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Narcissism Fear of Missing out and Phubbing: The Moderating Role of Mindfulness

Shazia Anjum, Sidrah Kanwal & Bakhtawar Mughal*

Riphah Institute of Clinical and Professional Psychology, Lahore, Pakistan

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ABSTRACT

The study sought to investigate the relationship between narcissism, fear of missing out (FOMO), and phubbing behavior pertaining to the young adults, in which special focus was paid to moderating role of mindfulness. The study sample consisted of 300 young adults aged 18-25, comprising 145 males and 155 females. The variables were studied using the FOMO scale, standard narcissistic personality inventory (grandiose narcissism & vulnerable narcissism), mindful attention awareness scale. Results demonstrated FOMO as a reputable 'dangerous' narcissistic trait associated with phubbing since the two were positively linked to indulging in FOMO. FOMO was positively associated with the exhibition of phubbing behaviors. These findings imply the need of incorporating FOMO to the existing interventions that aim at curbing phubbing behavior amongst the young adults. Positioned in this way, the study emphasizes that the development of the curative strategy should contain the assumption of the role of mindfulness in moderating the effect of FOMO on social behaviors.

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INTRODUCTION

The growing power of technology and social media in contemporary times has created a network of interrelated phenomena, which has interested both scientists and practitioners. Of these, narcissism, the fear of missing out (FoMo) and phubbing stand out most prominently in terms of behavioral research and the welfare of individuals. This study aims to analyze how these constructs come together, and look into the moderating influence of mindfulness in particular. Narcissism, defined by low empathy and self-centeredness, has been associated with several maladaptive processes and problems with interpersonal relationships (Akat, et al., 2023). In cooperation with this, fear of missing out, also known as FOMO which implies high anxiety about potential enjoyable events occurring without the individual, has been researched with a particular focus on social media use and unpleasant emotions (Gupta, & Sharma, 2021). To add, phubbing or the act of ignoring a companion by looking at one's phone has raised concerns in respect to the relationship and mental health aspects of the phenomenon (Gao et al., 2023). Given these issues, the role of mindfulness the practice of focusing oneself in the current moment, as a potential moderator of such effects has been contemplated by the scientists.

Phubbing

As per Haigh (2015), phubbing is the act of intentionally snubbing people in a social setting in order to focus on the smart phone. Phubbing – a neologism blending 'phone' and 'snubbing' – has recently attracted noteworthy interest due to its possible impact on mental health and the quality of interpersonal relations. It involves focus and, therefore, neglecting of the person who is physically available and instead giving attention. Understanding the definition that was used, one can assume that this kind of behavior is highly undesirable as its consequences are negative; such

*Corresponding author:
Bakhtawar Mughal | Riphah Institute of Clinical and Professional Psychology, Lahore, Pakistan
e-mail: bakhtawartariq3@gmail.com

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as problems with showing feelings, talking with people, or feeling close with them (Ivanova et al., 2020; Knausenberger et al., 2022).

The notion of phubbing has been associated with quite a number of negative consequences. It has been found to be detrimental to relationships because individuals are made to feel ignored, devalued and cut off from any connection with persons (Roberts & David, 2016). On top of that, phubbing hinders the quality and depth of in person dialogues and therefore makes those interactions less rewarding (Chotpitayasunondh & Douglas, 2018). Hence individuals or couples will begin to experience more disagreements and more unhappiness in the relationship (Mc Daniel and Coyne 2016), ensuring that over more time then than ever before, individuals will become more distanced and intimate with one another (Przybylski and Weinstein, 2013).

Phubbing behavior makes use of the FOMO as an individual needs to constantly stay connected so as not to miss out on any social engagements and stays updated through social platforms. Those individuals that have high levels of FOMO are said to be more likely to engage in phubbing as their earrings strive to keep them updated through smart phones engagement (Elhai et al., 2017; Clayton et al., 2015). Owing to the inordinate dependence on devices in which people have their eyes glued to backstage phones that are used to access social media and their news feeds thus a sense of panic and stress arises off which can only spell intrusion to the executive's intra-personal relations in numerous ways (David & Roberts, 2017). As a result, the worry of staying out of anything important that may happen or the fear of being out of the picture contributes to individuals cycling though looking at their phones and entering into phubbing too as the environment is too distracting and not present (Przybylski & Weinstein, 2013; Dwyer, Kushlev, & Dunn, 2018).

Fear of Missing Out

One of the latest and least studied concepts, which has been quick to garner interest in this hour of social media is fear of missing out. This is the fear that one experiences when they don't stay tuned in to and hence miss out on, events, activities, experiences or, even choices that could possibly lead to a person's enrichment. This fear arises from a feeling of always being on the thing that other people are doing which creates a fear of missing something in terms of socialization, new things, and interesting events (Gupta & Sharma, 2021). According to Przybylski et al. (2013), FOMO refers to the discomfort social networking users feel when they have the believe their friends are indulging into thrilling activities or things without them. It is basically the fear of being left out because others seem to be having fun or experiencing enjoyable episodes in their absence (Przybylski et al., 2013).

It has been revealed that the need to interact and connect with other people and know what is happening to them on the social networks is more acute on individuals who have the fear of missing out (Salem, 2015). As indicated by Baker et al. (2016), the fear of missing out or otherwise known as FOMO is linked with increased physical complaints, sadness and anxiety as well as excessive use of social media and mobile phones. Besides, Karada et al. (2015) describes the fact that individuals experiencing FOMO are likely to engage in phubbing, the act of being more interested in one's phone than the people around them.

Some researchers have however noted that fear of missing out (FOMO) has a few narcissistic traits associated with it. People high on the narcissism scale are likely to develop a high level of FOMO owing to their need for approval and adoration from others (Elhai & Yang, 2019). Many narcissistic people depend on online social networks to enhance their image and to find evidence of their own significance and greatness (Oberst et al., 2017). Therefore, the anxiety about the loss of social interactions and the inability to impress others as well as oneself causes an increase in the levels of anxiety amongst narcissistic people which in return triggers excessive use of social networks and devices to tackle these feelings (Elhai et al., 2016). In addition, studies show that the factor of fear of missing out (FOMO) plays a mediating role in the impact of narcissism on unhealthy use of social media. Thus, FOMO may further the tendency of narcissistic people to more engage with digital platforms (Casale et al., 2016).

Narcissism

Narcissism, reflected in features like grandiosity, lack of empathy, and strong need for validation, has been the concern of psychological studies (Emamzadeh, 2022). The latter cannot be discounted highlighting also concerns and risks associated with narcissism above all its problematic aspects such as compulsive engagement in social media and internet use (Kacel et al., 2017). Notably, this porous encapsulation of narcissism also has links to why the vulnerable form of narcissism has been associated with the adoption of social media in excess to mask negative feelings (Casale, & Banchi, 2020). Today, the impact that social media contributes to reinforcing narcissism lends attraction to concerns about the adverse consequences of narcissism as people are afforded uninterrupted chances to promote themselves and seek affirmation from such activities (Devitt, 2021).

Narcissism is a social problematic personality feature which can be found in psychoanalytic practice and among the general population (Raskin & Hall, 1979). This overstated notion of self manifests itself through superiority, entitlement and self-centeredness (Roberts et al., 2018; Paulhus & Williams, 2002). That is, behavior characterized by narcissism can be displayed in direct and electronic form of communication. For instance, in the case of narcissism, there is a tendency to relate with social media as a means of self-portrayal on Facebook and self-advertisement on Instagram (Egan & McCorkindale, 2007). But in the last years these correlations have been already the topic of several emerging studies. Facebook narcissism, through its core elements of self-absorption, self-promotion and no empathy has been shown to have an inverse relationship with the practice of mindfulness where one is open only to the present moment (Mogoaşe et al., 2014; Weinstein et al., 2009). The present review outlines reasons why individuals with high narcissistic traits may be less likely to practice mindfulness, since they may be too consumed with self-betterment and self-validation to be present (Jonas et al.,

2017). Through teaching how to tolerate internal experience and not automatically react to it, mindfulness techniques seem to decrease main manifestations of narcissism, and help to build better relationships (Lu et al., 2016).

Mindfulness

Mindfulness, which is derived from the teachings of Buddhism, has earned itself a stable place in the domain of psychology. Over the last few decades, remarkable attention has been paid to the scientific study that has advanced at a startling pace, suggesting positive outcomes from this aspect of mental practice. This increase in research is seen in the rapid increase in the number of mindfulness publications which have exceeded 16000 publications over the last 55 years (Baminiwatta, & Solangaarachchi, 2021). Mindfulness is the state of being aware of one's inner and outer worlds without any form of evaluation in regard to present time (Davis & Hayes, 2021). It has been correlated with various benefits which include stabilization of emotions, management of stress, expanded cognitive abilities, and enhanced general well being (Keng, et al., 2011). Mindfulness is described as a state of focusing the entire attention on the present time that includes engagement of a person's inner and outer worlds including thoughts, emotions, feelings, sensations, actions and people and environment at any particular moment. (Mishra, 2004).

As stated by the study conducted by Mogoaşe et al. (2014), narcissism is always a personality trait which involves feelings of superiority, need for attention and lack of concern for others and it exhibits a negative relationship with the level of mindfulness practiced, implying that the narcissist predisposed individuals can embrace the practice of mindfulness in order to be more self-aware and develop concern for others. In the same manner, Bayer et al. In the study of Sriwilai and Charoensukmongkol (2016), it has been established that lower levels of mindfulness are associated with greater social media addiction. According to the classification of the practices of using a mobile device they discuss in the paper by Lentz et al. (2016), automatic texting habits and risky texting while driving have been correlated with lower scores on mindfulness, particularly its aspect relating to being detached / acting without awareness/ on the verge of impulsivity.

The concept of mindfulness has been proposed to help counteract the negative effects brought on by social media use such as fatigue, extreme stress, depression, and anxiety (Sharma & Kumar, 2021). Such an application of mindfulness may promote better social media usage among individuals (Jones et al., 2021). In addition, mindfulness has been considered widely useful in changing the behaviour phubbing–when one prefers their phone to face-to-face interactions- by encouraging wise phone use and mitigating phone addiction (Kraushaar & Novak, 2018; Lee et al., 2020).

Present Study

Within previous literature, it is understandable that many aspects of narcissism, fear of missing out (FOMO), phubbing, and mindfulness have been researched independently. Existing understanding, however, is rather naive as several studies embrace narcissism, FOMO, and phubbing without and phubbing without understanding how these factors construct relationships among them. The need for extending the study of narcissism, FOMO and phubbing with the moderating role of mindfulness is well-cited. Exploring the relationships of these phenomena, the structure of the factors, and the consequences of the phenomena and the behavior in one study would broaden the understanding of all these elements in the way of well being and relations with people.

Although prevailing studies on narcissism, FOMO, and phubbing have been conducted mainly among Western populations, seldom are studies that deal with such behaviors in cultural contexts outside that of the so-called West, like Pakistan, for instance. Variables like collectivism, social control or family roles may significantly moderate the development and prevalence of narcissism, FOMO and phubbing attitudes within the Pakistani culture. Hence, we are also proposing that there is a gap in the literature on narcissism, FOMO, and phubbing behaviors that appreciates the Pakistani cultural context and goes beyond the individual factors. Developing cultural constructs of the abovementioned notions is crucial for determining suitable measures aimed at intervention psychological health problems in Pakistan.

Another gap in the experience concerns the available literature regarding the effect of mindfulness on narcissism, the Fear of Missing Out (FOMO), and phubbing. It's popular practice since it targets several psychological problems, namely stress, anxiety, and depression, yet its moderating effects on narcissism, FOMO, and phubbing are sparsely featured. Explaining as well as directing how mindfulness practices can shape interactions between narcissism, phubbing, and FOMO related behaviors is likely to greatly assist in the understanding these phenomena. Furthermore, such variations should be taken into account, because culturally adapted measures that consider these cultural characteristics will be more effective in Pakistan contexts.

To conclude, the research gaps revealed regarding the present literature suggest that there is comparatively less emphasis on how narcissism, the fear of missing out and phubbing interact with each other and the likely accent of attention to mindfulness moderation in the emerging cultural context of Pakistan. Closing these gaps would improve the comprehension of these interactions and assist in developing ad hoc strategies for enhancing psychological well-being among Pakistani patients.

MATERIAL & METHOD

Research Design

A correlational research design was employed to achieve the goal of assessing the relationship.

Participants

A total of 300 young adults (145 males and 155 females) included in this study, with the ages ranging from 18 to 25 years. Participants were selected from private universities using purposive sampling methods. To be eligible, participants had to use their smartphones for at least two hours daily and have an active account on at least one social media platform like Facebook, Instagram, or WhatsApp. Prior to participation, all individuals provided informed consent willingly and anonymously.

Procedure of Data Collection

After receiving approval from the appropriate authorities, permission was obtained from the original authors of the questionnaires. The researcher obtained an official authorization letter from the institute to begin the research. Permission letters were then presented to the heads of departments at the designated universities, and upon their approval, in-class administrations were conducted. The researcher established clear criteria for participant inclusion and exclusion. Interested participants were informed about the purpose and the nature of the study with respect to confidentiality. The participants consented to be a part of the intervention and were subsequently given a toolkit to fill out. Participants asked questions or expressed concerns that were dealt with during the debriefing after the study was completed.

Measurement Tools

Demographic Information Questionnaire

The demographic section of the survey will substantiate the demographic information ie participants age, sex, level of education attained or formal study, family structure, length and amount of phone usage, social networking, and internet usage. After the collection of demographic data, the participants will then be requested to fill four questionnaires.

The Generic Scale of Phubbing

The Generic Scale of Phubbing (GSP), created by Chotpitayasunondh and Douglas in 2016, is a 15-item survey as a measure of phubbing tendencies which includes the phubbing oneself. This survey contains four factors: Nomophobia, personal conflicts, self-efficacy, and problem recognition. For example in this case for instance, "I end up on my mobile for more than I planned," and "There is always a sense of restlessness if I am away from my phone." Respondents rate each statement in terms of frequency in a 1-(never) to 7-(always) scale. The total score will be from 15 to to 105 would consist of the summed score with high rates depicting high level of phubbing behavior with the total of responses, al scores higher mean individuals are more phubbing behavior. The GSP scale is psychometrically sound as it has been demonstrated by several studies to retain good internal reliability between .86 and .92.

The FOMO Scale

The Przybylski Fear of Missing Out Scale, created by Przybylski et al. (2013) was used in order to measure participants' fear of missing out. This scale contains 10 items, where each statement is rated on a scale of 1 (not at all true of me) to 5 (extremely true of me). Overall totals of the scale vary from 10 to 50, higher totals indicating greater inclination to the fear of missing out. The FOMO Scale had high internal consistency (α = .89) and good validity against which it was tested. Also, the internal consistency for the FOMO Scale as evidenced by the Cronbach's alpha coefficient was α = .86.

The Mindful Attention Awareness Scale

The Mindful Attention Awareness Scale (MAAS) was created by Brown and Ryan in 2003 and includes 15 items for self evaluation regarding one's day to day situations. For each item participants are given a rating between 1 (almost always) to 6 (almost never) on 6 point Likert scale. Overall totals of MAAS scores vary from 15 to 90, Higher scores of MAAS tend to signify higher levels of trait mindfulness. No studies regarding the internal reliability of MAAS have shown the values of Calderon's alpha lower than .80 and higher than .89. In relation, Brown and Ryan (2003) recorded Cronbach score's alpha with value .88..

The Pathological Narcissism Inventory

The Pathological Narcissism Inventory- Brief, scale designed by Schoenleber et al. 2015 was useful in measuring pathological narcissism especially grandiose and vulnerable types. This shortened form consists of 28 items, containing seven aspects of pathological narcissism. Aspects of these characteristics were examinable in terms of exploitation, entitlement, rage, grandiose fantasy, self-sacrifice, or improvement for grandiose narcissism, and hiding the self, contingent self-esteem and devaluation for vulnerable narcissism. A 6 point Likert type scale was used on the level of agreement, the higher the scores the more the participants tended to present narcissistic characteristics. Internal consistency was high whether the Pathological Narcissism Inventory was used in its original or Brief version, at α = .83 for grandiosity and at α = .93 for vulnerability.

RESULTS & FINDINGS

The objective of the current research was to assess the relationship between narcissism, fear of missing out and phubbing behavior among young adults with emphasis on the role of attention or mindfulness. Initially, we checked the data for any missing information and assessed the reliability of our measurement tools using Cronbach's Alpha. Our tools were designed to ensure consistent measurement. We then used descriptive statistics like frequency, standard deviation, means, and percentages to summarize demographic data, employing quantitative methods for reporting. To delve into the relationships between narcissism, FOMO, mindfulness, and phubbing, we employed a Pearson Product Moment Correlation Analysis. Furthermore, we investigated how mindfulness might moderate these relationships through moderation analysis concerning narcissism, fear of missing out, and phubbing behavior.

Table 1

Psychometric properties of Fear of missing out Scale, Pathological Narcissism Inventory, Mindfulness attention awareness scale, and Generic scale of Phubbing

Variables	M	SD	Range	A
FOMO Scale	42.50	9.72	10-59	.97
NPI	118.07	24.87	29-147	.99
Grandiose	48.92	10.35	12-62	.99
Vulnerable	65.07	13.68	16-80	.99
MAAS	36.35	5.80	22-51	.72
PHUBBING (GSP)	63.41	16.38	15-95	.99
Nomophobia	16.90	4.37	4-26	.98
Interpersonal Conflict	16.93	4.41	4-27	.98
Self-isolation	16.94	4.42	4-26	.98
Problem acknowledgment	12.63	3.26	3-20	.99

Note: M=Mean, SD=Standard Deviation, a= Reliability Coefficient, FOMO =Fear of Missing OutScale, NPI = The Narcissistic Personality Inventory, MAAS = Mindful attention awareness scale, and GSP= The Generic Scale of Phubbing.

The reliability analysis results showed that the Cronbach's Alpha values for our study scales, including the FOMO Scale, NPI (Grandiose and Vulnerable), the MAAS Scale, and the GSP Scale (which measures interpersonal conflict, nomophobia, problem acknowledgment, and self-isolation), all indicated excellent reliability. This suggests that these scales were reliable measures for our study population in assessing the variables of interest.

Table 2

Correlation between FOMO Scale, NPI scale (with subscales), MAAS, and GSP (with subscales) (N=300)

Variables	M	SD	1	2	3	4	5	6	7	8	9	10
FOMO Scale	42.50	9.72	-									
NPI scale	118.07	24.87	.929**	-								
Grandiose	48.92	10.35	.929**	.999**	-							
Vulnerable	65.07	13.68	.915	.999**	.99**	-						
MAAS	36.35	5.80	.038	.037	.041	.034	-					
Phubbing (GSP)	63.41	16.38	.97**	.90**	.91**	.90**	.048	-				
Nomophobia	16.90	4.37	.972**	.906**	.914**	.898**	.043	.995**	-			
Interpersonal Conflict	16.93	4.41	.969**	.902**	.911**	.893**	.049	.995**	.990**	-		
Self-isolation	16.94	4.42	.968**	.905**	.914	.898	.049	.993	.983	.982	-	
Problem acknowledgment	12.63	3.27	.973**	.896**	.906	.888	.052	.993	.984	.982	.984	-

**Correlation is Significant at the 0.01 level (2-tailed).
*Correlation is significant at the 0.05 level (2-tailed).

The correlation matrix was generated using Pearson's Product Moment Correlation to explore the relationship between narcissism, fear of missing out (FOMO), mindfulness, and phubbing behavior. The results showed that the FOMO Scale was significantly and positively correlated with the dependent variable, phubbing (r=.97, p<.05), as well as its subcomponents: nomophobia (r=.97, p<.05), interpersonal conflict (r=.96, p<.05), self-isolation (r=.96, p<.05), and problem acknowledgment (r=.97, p<.05). Similarly, the NPI scale was significantly and positively correlated with phubbing (r=.90, p<.05) and its subcomponents: nomophobia (r=.90, p<.05), interpersonal conflict (r=.90, p<.05), self-isolation (r=.90, p<.05), and problem acknowledgment (r=.89, p<.05). However, the MAAS scale showed a non-significant positive correlation with phubbing (r=.048, p>.05) and its subcomponents: nomophobia (r=.043, p>.05), interpersonal conflict (r=.049, p>.05), self-isolation (r=.049, p>.05), and problem acknowledgment (r=.052, p>.05).

Table 3

Gender difference in Narcissism, FOMO and Phubbing behavior

Variables	Female		Male		t (300)	P	Cohen's d
	M	SD	M	SD			
Narcissism	137.51	12.92	97.29	16.27	-23.79	.000	0.18
Fear of missing out	50.08	5.60	34.39	5.89	-23.65	.000	0.25
Phubbing	76.38	10.29	49.56	8.38	-24.66	.000	0.19

Note; M=Mean, SD=Standard Deviation, *p=<0.1, **p=<0.01, ***p=<0.005

The analysis of gender scores revealed that females displayed higher levels of narcissism, fear of missing out (FOMO), and phubbing compared to males. Specifically, females had mean scores of 137.51 for narcissism, 50.08 for FOMO, and 76.38 for phubbing, with standard deviations of 12.92, 5.60, and 10.29 respectively. In contrast, males had mean scores of 97.29 for narcissism, 34.39 for FOMO, and 49.56 for phubbing, with standard deviations of 16.27, 5.89, and 8.38 respectively. The differences between genders were statistically significant, as indicated by t-tests with large effect sizes (d = 0.18, 0.25, and 0.19 respectively) and p-values less than .05. These results suggest that there are

significant gender variations in narcissism, fear of missing out, and phubbing behavior.

Table 4

Hierarchical Regression results for Phubbing

Variables	B	95% CI for B		SE	β	R2	ΔR²
		LL	UL				
Step 1						.82***	.82***
Constant	7.20***	11.00	3.40	1.93			
Narcissism	.59***	.56	.63	.016	.90 ***		
Step 2						.95***	.95***
Constant	7.11***	-9.09	5.14	1.00			
Narcissism	.036***	.007	.078	.02	.054***		
Fear of missing out	1.56***	1.45	1.66	.05	.926***		

Note: CI = Confidence Interval; LL = Lower Limit; UL = Upper Limit; SE = Standardized error.
***P < .001.

A hierarchical multiple regression analysis was conducted to predict phubbing based on narcissism and fear of missing out (FOMO). The first model explained less variance compared to the second model, with a significant difference in F-statistics (F (2,298) = 1397.77, p < .001). The subsequent model, model 2, accounted for more variance than model 1, with another significant difference in F-statistics (F (1,297) = 804.09, p < .001). The overall model demonstrated that 82% of the variance was accounted for (Adjusted R2 = .82), and with the inclusion of FOMO, 95% of the variance was explained (R^2 = .95). The regression analysis indicated that both narcissism and FOMO were significant positive predictors of phubbing.

Table 5

Regression Analysis Examining the Interaction Effect of Narcissism and Mindfulness on Phubbing (N=300)

Variables	Phubbing		
	B	SE	95 % CI
Constant	-3.54	12.86	[-28.86, 21.78]
Narcissism	.555***	.105	[.348, .762]
Mindfulness	-.099	.350	[-.788, .589]
Narcissism x Mindfulness	.012	.010	[.001,.041]
R^2		.82	
F		463.75	

***P < .001.

The statistical analysis showed that narcissism is a significant predictor of phubbing, meaning that higher levels of narcissism were associated with more phubbing behavior. However, mindfulness did not have a significant negative effect on phubbing, meaning that being more mindful did not necessarily reduce phubbing. Additionally, the interaction between narcissism and mindfulness did not significantly affect phubbing behavior. In other words, it was confirmed that mindfulness expectations did not influence the link between narcissism and phubbing.

Table 6

Regression Analysis Examining the Interaction Effect of FOMO and Mindfulness on Phubbing (N=300)

Variables	Phubbing		
	B	SE	95 % CI
Constant	-11.36	6.423	[-24.006, 1.278]
Fear of missing out	1.73***	.1469	[1.443, 2.021]
Mindfulness	.134	.173	[-.2068, .4749]
Fear of missing out x Mindfulness	-.0024	.0039	[-.010, .0054]
R^2	.95		
F	1971.42		

***P < .001.

The statistical analysis indicated that fear of missing out (FOMO) constitutes one of the main determinants of phubbing, whereby greater levels of FOMO tended to phubbing more. Nonetheless, being mindful, was not found to correlate with phubbing behavior. In addition, the combined effect of FOMO and mindfulness did not predict phubbing behavior as well. In other words, FOMO did not moderate the effect of phubbing.

Discussion

The aim of this study was to determine the role of narcissism, fear of missing out, mindfulness and phubbing behavior in young adulthood. Specifically, we wanted to assess the relevance of narcissism, FOMO, and mindfulness as correlates of phubbing. In addition, we sought to find out the effect of mindfulness on the relationship between narcissism and FOMO with founder's abuse of phubbing in his/her potential employees. The findings of such a study are interpreted with regards to previous studies in the area. These results extend knowledge on the link between vulnerable narcissism and phubbing behavior.

In contrast, it was found that there is a strong correlation between vulnerable narcissism and phonophobia. Affected individuals are keen on phubbing due to their narcissistic attitude towards their smartphones that they prefer to other peoples.

The results of this study correspond to the research hypothesis, which was concerned with the existence of a significant relationship between narcissism, fear of missing out FOMO and phubbing behavior. Our findings confirm positive relationship exist between narcissism and phubbing behavior of young adults. This means that individuals who exhibit higher levels of narcissism are more likely to phub others against their wearying of face – to – face interactions with fellow humans. A narcissist, for example, may seek external validation through his or her smart phone, and in this case over obsessive and disruptive ways of phone use such as phubbing might result.

This outcome is consistent to other studies, which indicate that people with vulnerable narcissism may turn to technology to compensate for their lack of attention and approval, yet in doing so they forego the need for any social interaction whatsoever (Twenge & Campbell, 2009; Marino et al., 2017). Moreover, Grieve et al. (2020) advance these conclusions as they analyze the effect of various types of narcissism on the phenomenon of phubbing. They, however, built on the extant literature on excessive smartphone use and offered the possible effects of narcissism on the frequency of phubbing. The investigation demonstrated that only the relationship between vulnerable narcissism and phubbing behavior stands out as positive. This again corresponds with our findings and emphasizes the importance of taking other narcissistic traits into consideration when one aims to understand the phenomena of phubbing.

The results are also consistent with the previous research of Akat et al. (2022) where they considered dark triad personality traits (narcissism, psychopathy, and Machiavellianism) and student phubbing with an emphasis on the relation FOMO plays, where the latter was also examined. They that vice and useful phubbing traits positively correlate From this, one can conclude that persons bearing any of the triads, particularly the narcissistic, psychopathic, and Machiavel prone more to phubbing their family members. The literature corroborates our present results as, Balta et al. (2020) went a step further and examined the presence of a phenomenon called FOMO and anxiety as personality traits and determined how these are linked to the FOMO behaviors of phubbing. They were also concerned with the indirect link between problematic use of Instagram and state FOMO. These results demonstrated both direct and indirect relationships between FOMO (state and trait) and phubbing behavior.

The results of current research also endorse the hypothesis regarding a link between narcissism, the desire to be connected at all times fear of missing out (FOMO), and the behavior of phubbing of young people. Our findings supports the hypothesis and demonstrate that narcissism and FOMO are essential elements, which allow forecasting one's potential engagement in phubbing. This means that those people are rather likely to engage in phubbing behavior who have high narcissistic traits and high levels of the fear of missing out excessive feelings. These findings are consistent with prior research for example, Franchina et al. (2018) were able to establish a link between the fear of missing out (FOMO) and the act of 'phubbing' such that FOMO was able to directly predict phubbing behavior. It has been noted that narcissistic personality attributes are follow merits in word of mouth marketing which requires by its nature using social networks thus contributing to smartphone overuse and phubbing behavior. Twenge & Campbell (2009), Marino et al. (2017). Likewise. Research also suggested that individuals dealing with FOMO tend to develop the urge to check their phones frequently, as they do not want to miss out on social events or communication, hence supporting more phubbing behavior (Przybylski et al., 2013; Balta et al., 2020).

The findings further support the hypothesis that fear of missing out (FOMO) positively predicts phubbing behavior among young adults. This is consistent with the previous research in the area. For instance, Franchina et al. (2018) examined the fear of missing out (FOMO) within the context of Internet use and mass media phone absorption which led to the correlation between FOMO and the act of phubbing. Their findings demonstrated a link between FOMO and phubbing, which meant that if one suffered from FOMO one was likely to engage in phubbing. These findings support the idea that individuals engage in phubbing due to the tendency of using smartphones excessively which is caused by the fear of missing out (FOMO). People may be fonder of their portable devices rather than their friends and feel a compulsive urge to look at their phones because they are afraid they may be missing on some social activity or communication.

Our study demonstrated that participating young adults differ in their narcissistic tendencies, fear of missing out, mindfulness, and phubbing behaviour in terms of their gender. Indeed, the research revealed that females have increased propensity of phubbing than males in the converse situation. This adds to the existing literature in the area as it explains gender differences in phubbing behaviour that have been documented. For instance, Kardag et al. (2015) conducted a study that also found females to exhibit more phubbing behavior than men which is consistent with other findings. This consistent pattern across studies indicates that there is a possibility that gender influences how individuals engage in phubbing behavior.

The gender differences regarding phubbing patterns exhibited by respondents are likely to have been influenced by several factors such as gender differences in socialization experiences, ways of communicating and technology preferences. More research looking into this gender variation in phubbing could benefit the understanding on how to counter misuse of smartphones by particular gender. It should be noted that the present research has an important strength in the fact that it has practically addressed all the 'missing holes' regarding narcissism, 'fear of missing out' (FOMO), mindfulness and phubbing behavior among young adults. The careful application of diverse and well-established assessment instruments and robust quantitative methods ensures that the, findings are reliable and valid. In addition, the sample being large and

heterogeneous increases generalizability of the results to the population in question. Also, the incorporation of previous literature and existing theoretical models into the current research further strengthens its theoretical orientation and adds to the existing body of knowledge in psychology. In conclusion, all of these strengths form into one better grade as well as significance and scholarly contribution of the research making a step further on how"sociological variables shape smartphone usage behavior in this day and age" has been elucidated.

Although some valuable contributions to the existing literature have been made, the following limitations have to be considered in this study. Some of the participants were biased which might have affected the validity of the results obtained. Also, the research was limited in scope and the timeframe of the data collection, which may have adversely affected the completeness of data collection and analysis. Furthermore, the study sampled very few universities for data collection and that may pose a risk to the applicability of the results. In order to overcome these drawbacks, future studies may employ experimental methods to test hypotheses and establish cause and effect relationships among the variables. In addition, expanding the sample population of the study to take participants from other nations and organizations would improve the external and internal validity of the study and provide a better explanation of the phenomena under study.

This research finding is significant in understanding and managing phubbing behavior in young adults. Understanding narcissism, and fear of missing out (FOMO) and others, this study explores additional predictors of phubbing tendencies. These discoveries enhance the creation of evidence-based primary and secondary preventive measures and practices that aim at curbing young adults' phubbing behaviors. More precisely, the outcomes may facilitate Non-Government Organizations (NGOs) in Pakistan in maximizing the impact of "Stop Phubbing" programs, aimed at enhancing public awareness pertaining to the vectors of phubbing doll. The information gathered to also have implications to treatment settings, where it may be used to design programs to eliminate smartphone induced craving and phubbing behavior. To sum up, this research enriches the body of knowledge regarding phubbing behavior by providing strategies and interventions to reduce its adverse effects on relationships among people's health.

CONCLUSION

The objective of this paper was to look into the relationship between narcissism, fear of missing out (FOMO) and phubbing among young adults. This suggests that with FOMO and narcissistic tendencies phubbing was more likely to happen. Even within the genders, some distinctions were noticeable, since females reported more phubbing than males. The findings are justified by other researchers' findings and some assumptions regarding the relation studied. However, the study does not illustrate the relationship of mindfulness as a moderator between narcissism, FOMO and Phubbing behavior. The abovementioned and other findings broaden our understanding of phubbing behavior and suggest some foci that should be taken into account in FOMO and narcissism reducing interventions for young adults.

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Ethical Compliance

All procedures performed in study involving human participants were in accordance with the ethical standards of the Board of Advanced Studies and Research (BASR) and Ethical Review Committee (ERC) Riphah Institute of Clinical & Professional Psychology (RICPP).

Informed Consent

Informed consent was obtained from all individual adult participants included in the study.

Conflict of Interests

The authors has declared that no competing interests exist.

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