# More than a preference for online social interaction: Vulnerable narcissism and phubbing.

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## Abstract

This study was the first to examine whether the relationship between vulnerable narcissism and phubbing (phone snubbing) can be explained by preference for online social interaction. Participants (*N*=402) completed measures of narcissistic vulnerability, phubbing, and preference for online social interaction, along with measures of grandiose narcissism, psychopathy, Machiavellianism, and social anxiety, which were included as covariates in a mediation analysis. As hypothesised, preference for online social interaction mediated the vulnerable narcissism—phubbing relationship, however this effect was only partial, with narcissistic vulnerability still having a significant and positive direct effect on phubbing. These results indicate that phubbing may allow individuals with vulnerable narcissism to meet contingent self-esteem needs —i.e., needs which are more readily managed through the asynchronous and more controllable online environment—but that other aspects of narcissistic vulnerability also drive phubbing behaviours.


*Keywords:* uses and gratifications theory; mobile phone; phone snubbing; phubbing; preference for online social interaction; smartphone; social anxiety; vulnerable narcissism

## 1. Introduction

Phubbing (phone snubbing)—a relatively recent social phenomenon—refers to instances when a person ignores their current social companions to use their phone (Al-Saggaf & O'Donnell, 2019). Phubbing is predicted by personality characteristics such low conscientiousness and high neuroticism (Erzen et al., 2019). Phubbing is also related to internet and smartphone addiction (Davey et al., 2018), trait boredom (Al-Saggaf et al., 2019), and FOMO (i.e., fear-of-missing-out) (Davey et al., 2018).

Despite recommendations to explore the possible role of narcissism as a predictor of phubbing (see Al-Saggaf & O'Donnell's 2019 review), to date, narcissism—long identified as being related to social media use (e.g., Mehdizadeh, 2010)—has only been investigated as a predictor of phubbing in one study (i.e., Grieve & March, in press). Narcissism is a member of the 'dark triad' of personality: a cluster of socially aversive traits that exist at both clinical and subclinical levels (Furnham et al., 2013). Narcissism is characterised by inflated feelings of superiority and can be differentiated into two subtypes (e.g., Miller et al., 2011; Pincus et al., 2009). *Grandiose* narcissism is associated with grandiosity and inflated self-belief, while *vulnerable* narcissism reflects contingent self-esteem and a vulnerability that emanates from the need to seek validation and approval from others, and is associated with hypersensitivity, shame, and negative affect. Grieve and March (in press) found that vulnerable narcissism, but not grandiose narcissism, predicted phubbing, and concluded that vulnerable narcissists are driven to use their phones in the presence of others because they are highly invested in the potentially richer opportunities to fulfil self-esteem needs online, for example via abundant interactions on social networking sites.

However, an alternative explanation for the relationship between narcissistic vulnerability and phubbing may simply be that vulnerable narcissists prefer to interact online rather than face-to-face. Compared to offline, online social interaction is asynchronous and

more controllable, and social media allow users to carefully curate the image that they present (see Schlosser, 2020, for a review). Thus, for those high in vulnerable narcissism, online social interactions afford effective self-presentation where they can maximise presentation of positive self-aspects whilst hiding self-aspects associated with their shame and self-doubt. If so, vulnerable narcissists may be phubbing not only because the phone allows them to meet contingent self-esteem needs via a potentially powerful and readily accessible audience, but also because they prefer interacting in the online environment where they more easily manufacture their desired self-presentation. This explanation is consistent with Uses and Gratifications Theory: a well-established framework to understand traditional media use, which has also been applied in online contexts (e.g., Yu & Zheng, 2020). Uses and Gratifications Theory posits that media users are actively motivated to have their individual needs gratified through media engagement (e.g., Rubin, 1986). The current study was the first to investigate this possibility.

### 1.1 Hypothesis

In sum, there is preliminary evidence that vulnerable narcissism predicts phubbing (Grieve & March, in press). However, it is not clear if this is association can be explained in part or in full by a preference for online social interaction. Therefore, the aims of this study were to (1) confirm the positive relationship between vulnerable narcissism and phubbing, and (2) examine the possible mechanism of action for the relationship between vulnerable narcissism and phubbing i.e., through a preference for online interaction. We hypothesised that preference for online social interaction would mediate the relationship between vulnerable narcissism and phubbing, per Figure 1.

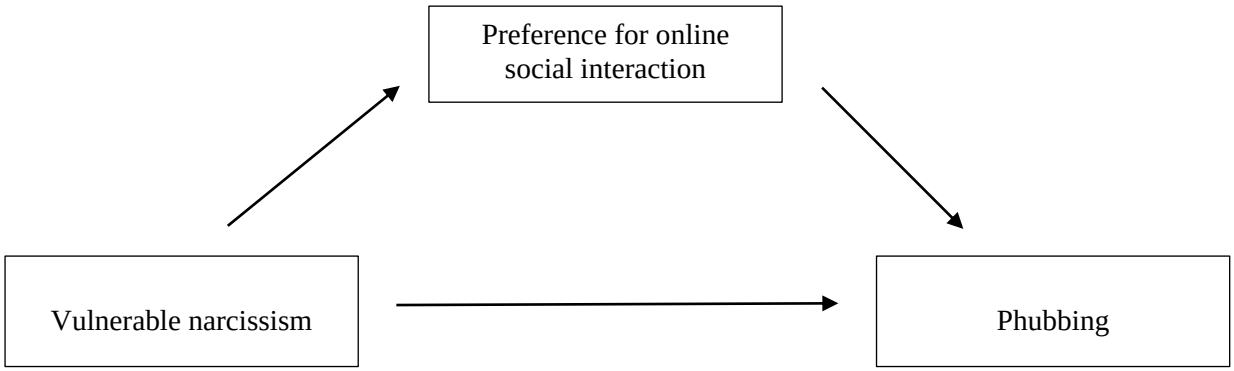


*Figure 1.* Proposed mediation model.

Due to shared variance, we followed Furnham et al.'s (2013) recommendation to include other dark triad traits (grandiose narcissism, psychopathy, and Machiavellianism) as covariates. Further, to control for the possibility that participants' levels of social anxiety (characterised by fear of negative evaluations in social situations and concerns over showing visible anxiety symptoms such as flushing or shaking, e.g., Spence & Rapee, 2016) might add noise to the preference for online social interaction data, we also elected to include social anxiety as a covariate.

## 2. Method

### 2.1 Participants

Participants were 402 smartphone users. The sample was mostly female (female *n*=302; male *n*=99; other *n*=1), with an average age of 23.49 years (*SD*=8.50, range 18-74). The majority of the sample were iPhone (65.4%) and Android (32.6%) users, primarily using their phones for text messaging (98.3%), phone calls (96%), surfing the web (91.8%), and social media, predominantly Facebook (91%), Instagram (73.1%), and Snapchat (70.1%).

### 2.2 Measures

Phubbing was measured using Grieve and March's (in press) 7-item phubbing measure. Participants respond to items (e.g., "If I am talking to my friends/family in person,

and I receive a text message, I will read the text message"; in the current sample, Cronbach's $\alpha$=.88) on a 5-point scale (1=never; 2= rarely; 3=sometimes; 4=often; 5=all the time). Scores are averaged. Higher scores indicate more phubbing behaviour.

Preference for online social interaction was assessed using 4 items per Caplan (2005). Participants respond to items (e.g. "I prefer communicating with other people online rather than face-to-face"; current $\alpha$=.88) on a 7-point scale (1=strongly disagree; 7=strongly agree). Scores are averaged and higher scores indicate stronger preference for online social interaction.

Consistent with Grieve and March (in press), we operationalised narcissistic vulnerability using 12 items from the Pathological Narcissism Inventory (Pincus et al., 2009). A sample item is "It's hard to feel good about myself unless I know other people admire me". Participants respond on a 6-point scale with the anchors 0= not at all like me and 5=very much like me. Scores are averaged and higher scores indicate higher levels of vulnerable narcissism. Cronbach's $\alpha$=.94 in this study.

Grandiose narcissism, psychopathy, and Machiavellianism were assessed using the SD3 (Jones & Paulhus, 2014), with 9 items assessing each construct (current $\alpha$ at .70, .76, and .78, respectively). Sample items are "People see me as a natural leader" (grandiose narcissism). "Payback needs to be quick and nasty" (psychopathy) and "I like to use clever manipulation to get my way" (Machiavellianism), and participants respond to items on 5-point scale (1=strongly disagree; 5 =strongly agree).

To measure social anxiety, we used the 3-item Mini-SPIN (Connor et al., 2001). Participants respond to items (e.g., "Fear of embarrassment causes me to avoid doing things or speaking to people"; current $\alpha$=.81) on a 5-point scale (0 =not at all; 1 = a little bit; 2 = somewhat; 3 = very much; 4= extremely). Higher scores indicate reflect greater levels of social anxiety.

### 2.3 Procedure and Analysis

Ethical clearance was obtained from the institutional review board prior to data collection. Interested individuals were invited to complete an online anonymous survey on their smartphone usage, which was made available via weblink.

Analysis was via mediation. We used bootstrapping (5000 bootstrap samples using 95% confidence intervals) with PROCESS Model 4 (Hayes, 2018) with vulnerable narcissism as the predictor, preference for online social interaction as the mediator, and phubbing as the outcome variable. Psychopathy, grandiose narcissism, Machiavellianism, and social anxiety were included in the model as covariates, thereby allowing us to account for their effect across all pathways in the model.

## 3. Results

As the sample was predominantly female, we checked whether phubbing differed between females and males[1]. All relevant assumptions for this comparison were met: independence of observations was manifest in the research design; both distributions were normally distributed per the histograms and skewness and kurtosis statistics (males: skewness=-.003, kurtosis=.047; females: skewness=.013, kurtosis=.097); and homogeneity of variance was evident via a non-significant Levene's test, $p$=.502). There was no significant difference, $t(399)$=-1.43, $p$=.16, with a small effect size ($d$=.15), therefore all data were combined for analysis. Descriptive statistics and bivariate correlations are presented in Table 1 and were consistent with recent research (e.g. Grieve et al., 2020; Grieve & March, in press; Waddell et al., 2020). Correlations between social anxiety and preference for online social interaction, as well as between the dark traits, validated their inclusion as covariates in the analysis.

[1] The "other" gender group could not be included due to $n$=1

Table 1 *Descriptive Statistics and Bivariate Correlations*

| | Mean | *SD* | Phubbing | POSI | Social anxiety | Vulnerable narcissism | Grandiose narcissism | Psychopathy | Machiavellianism |
|---|---|---|---|---|---|---|---|---|---|
| Phubbing | 3.05 | .72 | | .22*** | .11* | .26*** | .03 | .10* | .14** |
| POSI | 3.26 | 1.52 | | | .38*** | .38*** | -.21*** | .16[a] | .26*** |
| Social anxiety | 2.01 | .98 | | | | .47*** | -.46*** | -.10* | .08 |
| Vulnerable narcissism | 2.13 | 1.23 | | | | | .07 | .15* | .25*** |
| Grandiose narcissism | 2.64 | .54 | | | | | | .36*** | .28*** |
| Psychopathy | 2.09 | .61 | | | | | | | .49*** |
| Machiavellianism | 2.76 | .62 | | | | | | | |

*Note.* POSI=preference for online social interaction *$p$<.05, **$p$<.01, ***$p$<.001, [a]$p$=.001

The total model was significant, $R$=.27, $F$(5,396)=6.20, $p$<.001. The total effect of vulnerable narcissism on phubbing was significant, .0114 (SE=.0028, $t$=4.10, $p$<.001, LowerCI95=.0060—UpperCI95=.0169; partially standardised effect=.0159; completely standardised effect=.2340). As detailed in Figure 2, mediation analysis indicated that preference for online social interaction significantly mediated the vulnerable narcissism—phubbing relationship, .0017 (SE=.0008, Lower CI95=.0003—Upper CI95=.0034; partially standardised effect=.0023, SE=.0011, LowerCI95=.0005—UpperCI95=.0046; completely standardised effect=.0341, SE=.0155, LowerCI95=.0067—UpperCI95=.0678). However, this mediation effect was only partial, as the direct effect of vulnerable on phubbing remained significant, .0098 (SE=.0028, Lower CI95=.0042—Upper CI95=.0153; partially standardised effect=.0136; completely standardised effect=.1998) even with the presence of the significant indirect effect. The ratio of the completely standardised indirect effect to the completely standardised direct effect was .1706, indicating that preference for online social interaction explained around 17% of the effect of vulnerable narcissism on phubbing.

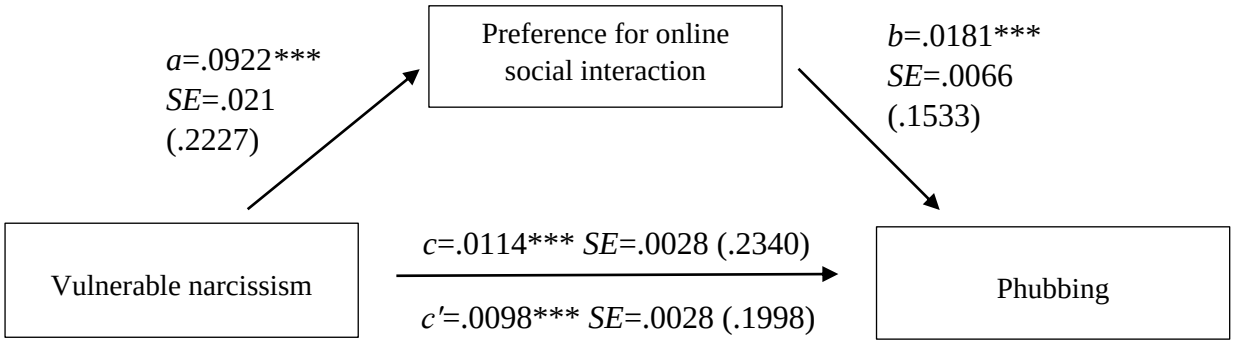


*Figure 2.* Mediation model showing effects for a, b, c, and c′ paths. Standardised coefficients are presented in parentheses. SE denotes Standard Error; *** denotes $p$<.001

## 4. Discussion

As predicted, narcissistic vulnerability predicted preference for online social interaction, which in turn predicted phubbing, with the mediation effect suggesting that those with vulnerable narcissism may be phubbing because they prefer interacting with people online compared to the people they are face-to-face with. The online environment facilitates control over self-presentation (Schlosser, 2020), and our findings are consistent with those that highlight how this environment meets the needs of those high in narcissism (e.g. Mehdizadeh, 2010). In particular, our results indicate that a preference for online interactions—perhaps as product of low social self-efficacy and higher social anxiety—in those with narcissistic vulnerability, may result in unregulated, inappropriate phone checking behaviour.

It is important to also note that the mediation effect was only partial, and that a direct, significant relationship remained between vulnerable narcissism and phubbing. Thus, while the vulnerable narcissist may prefer online social interactions in turn increasing phubbing, the characteristics associated with trait vulnerable narcissism (i.e., contingent self-esteem; Miller et al., 2011) still directly predict phubbing behaviour.

As with any mediation model, it is possible that other explanatory models may also fit the data, and causality cannot be inferred using the current research design. However, it remains that narcissism is considered a relatively stable personality characteristic that does predict behavioural outcomes (Miller et al., 2007), thus it is conceptually appropriate to consider it as a predictor variable here. The current data are also consistent with Billieux's (2012) model of problematic mobile phone use which presents several pathways leading to maladaptive phone use, including dysfunctional emotional regulation, poor self-esteem, and insecure attachment: all of which are characteristic of narcissistic vulnerability (see Miller et al., 2011). Nonetheless, given that the online environment may afford the development of

narcissistic traits (Brailovskaia & Bierhoff, 2020), it is possible that a reciprocal relationship between preference for online social interaction and narcissistic vulnerability may emerge over time, and ideally future research could investigate this.

These results confirm the positive relationship seen between vulnerable narcissism and phubbing in Grieve and March (in press). The focus of the current study was on one possible mechanism to explain the vulnerable narcissism—phubbing relationship, however given that the data indicated partial mediation, it seems likely that other mechanisms of action exist. For example, mindful of the role of contingent self-esteem in narcissistic vulnerability (Pincus et al., 2009), it would be interesting to consider whether reward sensitivity or sensitivity to social norms might play a part. Relatedly, in the context of earlier research investigating the role of vulnerable narcissism in phubbing (Grieve & March, in press), it is reasonable to conclude from the current study that phubbing allows those high in narcissistic vulnerability to meet contingent self-esteem needs through access to a potentially broad online audience, *and* that those individuals prefer interacting with others in the online environment because it allows them to more carefully curate their self-presentation. This interpretation of our findings is consistent with Uses and Gratifications Theory; nonetheless, future research explicitly unpacking the initial evidence seen here (and in Grieve & March) would be useful. Such a study might further draw on Uses and Gratifications Theory to consider exactly (for example) which applications are being used when phubbing and which needs are being met through those applications, as well as the extent to which those individuals high in vulnerable narcissism are manipulating their self-presentation on those applications.

### 4.1 Additional Considerations

In the current study, social anxiety was included as a control. This was important as it meant that any effect of preference for online social interaction (with its asynchronous and

more controllable nature) was not merely an artefact of concerns about social evaluation. However, it remains that other socially pertinent variables might also be relevant when investigating the role of narcissism in phubbing, such as humility or propensity towards affiliation. Similarly, greater understanding of the possible role of smartphone addiction or mental health might provide additional insight. The inclusion of grandiose narcissism, Machiavellianism, and psychopathy strengthened the current study by allowing for common variance between the 'dark traits' to be accounted for within the model. Nonetheless, although beyond the scope of the current study, it may be helpful for future research to include additional personality variables that are known to be associated with phubbing (e.g., high neuroticism and low conscientiousness, Erzen et al., 2019) in combination with the dark traits examined here. Indeed, it would be helpful to see the extent to which prosocial 'light traits' such as humanism and Kantianism (e.g., Neumann et al., 2020) might buffer phubbing in narcissistically vulnerable individuals.

It is important to note that there were more females than males in the current sample. Although no significant differences in phubbing as a function of gender emerged, we advise that current findings should not be generalised without additional research.

**4.2 Implications**

Increasing understanding of phubbing and its antecedents is important. Phubbing is a common behaviour in modern social interactions (Aagaard, 2019; Chotpitayasunondh & Douglas, 2016). There are multiple negative outcomes associated with phubbing (Al-Saggaf & O'Donnell, 2019). Phubbing negatively impacts the quality of communication (e.g., Vanden Abeele & Postma-Nilsenova, 2018), breaches social norms (Kadylak et al., 2018; Nuñez et al., 2020), and being phubbed can result in reduced trust (Roberts & David, 2020), greater anxiety, depression, loneliness, and less satisfaction with life (Ergün et al., 2020), as well as feeling annoyed and disrespected (Aagaard, 2019). Unsurprisingly, phubbing also

negatively impacts personal relationships (e.g., Chotpitayasunondh & Douglas, 2018). Recent studies also reveal secondary effects of phubbing, with parental phubbing related to cyberbullying behaviours by their adolescent children (Wang et al., in press), and to increased depression in children via decreased parental warmth and increased parental rejection (Xie & Xie, 2020).

Across the globe, it is estimated that 5 billion people own mobile devices, and in recent years smartphone use has increased substantially, with median smartphone ownership at 76% of adults in advanced economies (range: 59% to 95%), and at 45% in emerging economies (Silver, 2019). Thus, although the effect sizes seen in the current study were modest, in the context of the ubiquitousness of phubbing and its multiple negative outcomes, the current study's findings are likely to still be practically meaningful. We also note that people who engage in phubbing are judged to be less warm and less competent (Nuñez et al., 2020) and that in light of the negative impact of phubbing on relationships (Chotpitayasunondh & Douglas, 2018), it is feasible that although individuals high in narcissistic vulnerability might be effectively using phubbing to meet contingent self-esteem needs in the short-term, their phubbing behaviours might be damaging their ongoing, face-to-face social relationships.

### 4.3 Concluding comments

Because of the negative social implications associated with phubbing (such as impaired social affiliation and connectedness, e.g., Al-Saggaf & O'Donnell, 2019) improving knowledge of the precursors of phubbing is warranted. By revealing the role of preferences for online social interaction in unpacking the narcissistic vulnerability—phubbing relationship, the current research adds to the growing literature showing the utility of examining narcissism subtypes when attempting to understand human behaviour (e.g., Freis & Hansen-Brown, 2021; Grieve et al., 2020), particularly in the online context.

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