



# Psychosocial and personality trait associates of phubbing and being phubbed in hispanic emerging adult college students

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Accepted: 14 May 2023 / Published online: 20 May 2023

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## Abstract

Phubbing is when one uses their smartphone in a social interaction instead of interacting with the other individual(s) in their presence. Phubbing and being phubbed are growing concerns as the number of smartphones and frequency of smartphone use increases. This study assessed the relationships between phubbing, being phubbed, psychosocial constructs, and socially adverse personality traits among Hispanic emerging adult college students. Hispanic college students ( $n = 452$ ) completed a survey assessing: sociodemographics, phubbing, being phubbed, depression, anxiety, stress, Machiavellianism, narcissism, psychopathy, and need for drama (interpersonal manipulation, impulsive outspokenness, persistent perceived victimhood). Hispanic emerging adult college students reported low-to-moderate levels of phubbing and being phubbed. Regarding phubbing findings, nomophobia (fear of separation from one's phone), interpersonal conflict, and problem acknowledgement were positively associated with negative affect. Moreover, interpersonal conflict, self-isolation, and problem acknowledgement were positively associated with interpersonal manipulation. Regarding being phubbed findings, perceived norms, feeling ignored, and interpersonal conflict were positively associated with persistent perceived victimhood. Findings indicate that Hispanic college students may use their smartphones in social settings to alleviate negative affect. Moreover, a virtual environment on a smartphone may be easier to manipulate and can be used to continue garnering attention and portraying oneself as the victim, fulfilling one's need for drama. Regarding exploratory mediations, phubbing and being phubbed mediated the relationships between multiple socially adverse personality traits and negative affect. The clinical implications of these results are discussed. Prospective studies are warranted to determine temporality.

**Keywords** Phubbing · Being phubbed · Mental health · Personality · Hispanic · College Student

Technology use has pervaded communication patterns likely due to the increase in smartphone users and use. From 2016 to 2022, worldwide smartphone users increased from 3.668 to 6.567 billion and are expected to reach 7.690 billion by 2027 (Statista, 2022a). Moreover, in one survey conducted in the United States in 2021, nearly half of the participants reported using their smartphone an average of 5 to 6 h per day (Statista, 2022b). Smartphones are used for multiple

purposes, from entertainment to communicating with others. However, greater frequency of smartphone use may have adverse effects on mental health (Demirci et al., 2015) and social interactions (Chotpitayasunondh & Douglas, 2018b). Specific to social interactions, the profusion of smartphones has resulted in a relatively novel phenomenon referred to as 'phubbing' (for review, see Al-Saggaf & O'Donnell, 2019).

Phubbing is a combination of the words 'phone' and 'snubbing' and is when one (the 'phubber') uses their smartphone in a social interaction instead of interacting with or paying attention to the other individual(s) in their presence. The one who is being phubbed and thus ignored in a social interaction is the 'phubbee' (Al-Saggaf & O'Donnell, 2019). Importantly, one can be both the phubber and phubbee simultaneously (Chotpitayasunondh & Douglas, 2016, 2018a). Phubbing is considered a worldwide behavior that is not special to any individual country or culture (Al-Saggaf,

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2022), yet no study has investigated if phubbing and being phubbed behaviors also occur within Hispanic groups. The term ‘Hispanic’ is used throughout the present study because past surveys have observed that Hispanic individuals are more likely to use ‘Hispanic’ to ethnically identify themselves rather than using ‘Latino’ or ‘Latinx’ (Noe-Bustamante et al., 2020). Given the recent increases in technology use among Hispanics (e.g., smartphones, social media; Lerma et al., 2021), investigating their phubbing and being phubbed behaviors is warranted, particularly for replication purposes to exhibit concordance with past studies.

Past studies have revealed that mobile phone addiction, social media addiction (Karadağ et al., 2015), fear of missing out, and decreased self-control predict phubbing (Chotpitayasunondh & Douglas, 2016). Additionally, phubbers are perceived as less polite and less attentive (Vanden Abeele et al., 2016), and report greater loneliness, lower self-esteem, and decreased life satisfaction (Błażuch & Przepiorka, 2019). Past studies have also observed that phubbing and being phubbed are associated with depression and anxiety (Ergün et al., 2020; Guazzini et al., 2019). Regarding socially adverse personality traits (e.g., the Dark Triad), only vulnerable narcissism was significantly associated with phubbing (Grieve & March, 2021).

Few scales have been developed to measure phubbing and being phubbed behaviors (Chotpitayasunondh & Douglas, 2018a; Karadağ et al., 2015). Of note, Chotpitayasunondh and Douglas (2018a) developed the Generic Scale of Phubbing (GSP) and the Generic Scale of Being Phubbed (GSBP). The GSP includes four subscales: 1) nomophobia (fear of separation from one’s phone), 2) interpersonal conflict (perceived conflict between one’s phone use and others), 3) self-isolation (using a smartphone to escape from social activities and isolate from others), and 4) problem acknowledgement (acknowledgement that one has a phubbing problem). The GSBP includes three subscales: 1) perceived norms (descriptions of others’ phone use), feeling ignored (feeling dismissed by others’ phone use), and interpersonal conflict (perceived conflict between oneself and others due to others’ phone use). For the present study, these individual subscales of the GSP and GSBP were investigated in relation to psychosocial constructs and adverse personality traits as these subscales may comprise unique and distinct features from each other.

## Psychosocial constructs

As briefly mentioned earlier, past literature has observed that depression and anxiety are positively associated with phubbing (Bitar et al., 2022; Ergün et al., 2020; Guazzini et al., 2019; McDaniel & Coyne, 2016; Sun & Samp, 2021), and

Ergün et al. (2020) found that both depression and anxiety were positively correlated with each of the four subscales of the GSP. McDaniel and Coyne (2016) reasoned that the relationship between phubbing and depression is likely bidirectional such that individuals with depression may resort to technology to cope with mental health problems, or that increased use of technology, especially when interfering with social interactions, may increase feelings of depression. As for anxiety, explanations may include that individuals with higher levels of anxiety may resort to phubbing to decrease anxiety and discomfort being created from their social interaction (Bitar et al., 2022; Guazzini et al., 2019). However, the relationships between being phubbed and depression and anxiety have been less addressed with one study observing that depression and anxiety were positively correlated with being phubbed and with each of the three subscales of the GSBP (Ergün et al., 2020). Social exclusion theory (i.e., the temporal need-threat model of ostracism; Williams, 2007, 2009) may help explicate the possible relationships between being phubbed and depression and anxiety. Social exclusion theory posits that individuals experience negative affect (e.g., depression, anxiety) and threat to their fundamental needs (e.g., belonging, meaningful existence) when they are socially excluded. Notably, past studies argue that phubbing may be a smartphone version of social exclusion (Chotpitayasunondh & Douglas, 2018a, b; Hales et al., 2018; Nuñez et al., 2020). Thus, individuals may experience greater mental health problems the more they are phubbed.

Limited studies have investigated the relationship between stress and phubbing with these studies observing that stress and negative affect are positively associated with phubbing (Bitar et al., 2022; Guazzini et al., 2021). Similar to depression and anxiety, individuals who are stressed may resort to their smartphones and thus phub others to cope with stress (Bitar et al., 2022). Furthermore, no study has investigated the relationship between being phubbed and stress. Here, social exclusion theory (Williams, 2007, 2009) may posit that individuals may experience stress as they are phubbed and socially excluded by their conversation partner. Given these limited studies and social exclusion theory, it may be important to investigate how phubbing and being phubbed behaviors relate to stress.

## Personality traits

Few studies have investigated how phubbing and being phubbed relate to socially adverse personality traits (Grieve & March, 2021; Grieve et al., 2021). One set of such adverse traits is the ‘Dark Triad’ which includes Machiavellianism, narcissism, and psychopathy in which individuals high in these traits exhibit behavioral propensities

toward manipulation, grandiosity, and low empathy (Paulhus & Williams, 2002). Studies have revealed a positive correlation between problematic smartphone use and the Dark Triad (Balta et al., 2019; Pearson & Hussain, 2015). However, pertaining to phubbing specifically, only vulnerable narcissism was significantly associated with phubbing (Grieve & March, 2021). Despite vulnerable narcissism emerging as the only significant associator of phubbing, politeness theory (Brown & Levinson, 1987) may help explicate the possible relationships between phubbing and adverse personality traits. Given that phubbing is typically considered an impolite behavior (Miller-Ott & Kelly, 2017; Vanden Abeele et al., 2016), and adverse personality traits are inherently impolite, it may be that individuals high in these traits will be more likely to phub others.

Need for drama is a novel compound personality trait comprised of three core components: interpersonal manipulation, impulsive outspokenness, and persistent perceived victimhood. Specifically, individuals with this trait impulsively manipulate others from a position of perceived victimization (Frankowski et al., 2016). Frankowski et al. (2016) observed that individuals with a need for drama are not low in empathy. Alternatively, individuals high in Dark Triad traits usually report low empathy and are emotionally cold (Paulhus & Williams, 2002), suggesting that the manipulative behaviors within need for drama differ from the manipulative behaviors within the Dark Triad (Frankowski et al., 2016). No study has investigated how phubbing and being phubbed are associated with need for drama. However, one study found that social media addiction was positively associated with need for drama (Lerma et al., 2021). Given that social media addiction is associated with need for drama in Hispanic college students (Lerma et al., 2021) and with phubbing in college students (Karadağ et al., 2015), it is important to explore if phubbing and being phubbed are associated with need for drama in Hispanic college students.

## Hispanics and emerging adults

From 2000 to 2020, Hispanic undergraduate enrollment increased by 148%, the greatest increase of any minority group (U.S. Department of Education, 2021). Hispanics are also the largest ethnocultural minority, with approximately 62.5 million individuals living in the U.S. in 2021 (Krogstad et al., 2022). Although phubbing and being phubbed have been investigated in college students (Ergün et al., 2020; Karadağ et al., 2015), no study has investigated phubbing and being phubbed in Hispanic college students. Moreover, social media use frequency has drastically increased among Hispanic college students in recent years, from an average

of 46 h per month in 2016 (Gutierrez & Cooper, 2016) to an average of 80 h per month in 2021 (Lerma et al., 2021). Similarly, 64% of Hispanic adults in the United States owned a smartphone in 2015, compared to 85% in 2021 (Statista, 2022c). This rise in technological use among Hispanic groups warrants investigation of their phubbing and being phubbed behaviors.

Notably, Hispanic individuals and emerging adults are at risk of developing a mental illness (National Institute of Mental Health [NIMH], 2022). Specifically, the NIMH (2022) reported that among ethnic/racial minorities, the past year prevalence of any mental illness was greatest among Hispanics. Similarly, emerging adults had the greatest prevalence of mental illness than any other adult group in the United States during 2020 (NIMH, 2022). Thus, investigating how phubbing and being phubbed relate to psychosocial constructs in Hispanic emerging adult college students is critical.

## Theoretical underpinnings

Not only are the constructs in the present study relevant empirically, but they also seem consistent with theories applied to phubbing and being phubbed in past studies (Grieve et al., 2021; Sun & Samp, 2021). As mentioned above, two theories were relevant for the present study. First, politeness theory (Brown & Levinson, 1987; Miller-Ott & Kelly, 2017) in which limited politeness may be associated with adverse personality traits leading to phubbing and/or with negative affect from being phubbed. Second, social exclusion theory (Williams, 2007, 2009) has also been utilized in regard to phubbing and being phubbed (Chotpitayasunondh & Douglas, 2018b; Knause-berger et al., 2022; McDaniel & Wesselmann, 2021) as researchers have argued that phubbing may be a smartphone version of social exclusion (Chotpitayasunondh & Douglas, 2018b; Hales et al., 2018). Thus, social exclusion may be associated with negative affect from being phubbed and/or with adverse personality traits leading to phubbing.

## Present study – aims and hypotheses

Given that no study has assessed phubbing and being phubbed behaviors among Hispanic groups, the present study primarily aimed to: 1) replicate past findings of phubbing and being phubbed to demonstrate concordance, and 2) investigate how additional unexplored variables may relate to phubbing and being phubbed. Specifically, the present study assessed how depression, anxiety, stress, Machiavellianism, narcissism, psychopathy, interpersonal manipulation, impulsive

outspokenness, and persistent perceived victimhood associate with the subscales of the GSP and GSBP in Hispanic emerging adult college students. Hypotheses included: 1) Depression, anxiety, and stress will be positively associated with GSP and GSBP subscales; 2) Machiavellianism, narcissism, and psychopathy will be positively associated with GSP and GSBP subscales; 3) Interpersonal manipulation, impulsive outspokenness, and persistent perceived victimhood will be positively associated with GSP and GSBP subscales. A secondary exploratory aim of the present study was to assess the potential that phubbing and being phubbed mediate the relationships between Machiavellianism, narcissism, psychopathy, interpersonal manipulation, impulsive outspokenness, and persistent perceived victimhood and negative affect.

## Method

### Participants

A sample of 591 college students participated in a larger online survey after completing an informed consent form. Participants were recruited from a U.S./Mexico border-region university. Inclusion criteria for the present study included identifying as Hispanic/Latinx, being 18–25 years old, and passing five of seven attention checks yielding a final sample size of 452 participants ( $M_{\text{age}} = 19.97$  years,  $SD = 1.89$ ; 77.2% female).

### Materials

#### Demographic survey

This 32-item demographic survey assesses demographic information (e.g., age, sex, ethnicity) and information related to the COVID-19 pandemic (e.g., have you ever been diagnosed with COVID-19).

#### Generic scale of phubbing (GSP)

This 15-item four-factor scale assesses: 1) nomophobia, 2) interpersonal conflict, 3) self-isolation, and 4) problem acknowledgment (Chotpitayasunondh & Douglas, 2018a). Items are answered on a 7-point Likert scale ranging from 1 (*Never*) to 7 (*Always*). Items within each factor are summed and a mean score for each factor is computed; higher scores indicate greater feelings of subscale constructs. Each subscale demonstrated moderate to high internal consistency in the present study (i.e., nomophobia,  $\alpha = 0.85$ ; interpersonal conflict,  $\alpha = 0.87$ ; self-isolation,  $\alpha = 0.86$ ; problem acknowledgment,  $\alpha = 0.79$ ).

#### Generic scale of being phubbed (GSBP)

This 22-item three-factor scale assesses: 1) perceived norms, 2) feeling ignored, and 3) interpersonal conflict (Chotpitayasunondh & Douglas, 2018a). Items are answered on a 7-point Likert scale ranging from 1 (*Never*) to 7 (*Always*). Items within each factor are summed and a mean score for each factor is computed. Higher scores indicate greater feelings of subscale constructs. Each subscale demonstrated high internal consistency in the present study (i.e., perceived norms,  $\alpha = 0.95$ ; feeling ignored,  $\alpha = 0.97$ ; interpersonal conflict,  $\alpha = 0.94$ ).

#### Depression, anxiety, and stress scale – 21 (DASS)

This 21-item three-factor scale assesses: 1) depression, 2) anxiety, and 3) stress (Lovibond & Lovibond, 1995). Items are answered on a 4-point Likert-like scale ranging from 0 (*Did not apply to me at all*) to 3 (*Applied to me very much or most of the time*). Items within each subscale are summed and multiplied by two; higher scores indicate greater levels of subscale constructs. Each subscale demonstrated high internal consistency in the present study (i.e., depression,  $\alpha = 0.92$ ; anxiety,  $\alpha = 0.86$ ; stress,  $\alpha = 0.88$ ).

#### Short dark triad scale (SD3)

This 27-item three-factor scale assesses: 1) Machiavellianism, 2) narcissism, and 3) psychopathy (Jones & Paulhus, 2014). Items are answered on a 5-point Likert scale ranging from 1 (*Strongly disagree*) to 5 (*Strongly agree*). Items within each subscale are summed and a mean score is computed; higher scores indicate greater levels of subscale constructs. Each subscale demonstrated moderate internal consistency in the present study (i.e., Machiavellianism,  $\alpha = 0.78$ ; narcissism,  $\alpha = 0.68$ ; psychopathy,  $\alpha = 0.74$ ).

#### Need for drama scale (NFD)

This 12-item three-factor scale assesses: 1) interpersonal manipulation, 2) impulsive outspokenness, and 3) persistent perceived victimhood (Frankowski et al., 2016). Items are answered on a 7-point Likert scale ranging from 1 (*Strongly disagree*) to 7 (*Strongly agree*). Items from each subscale are summed and a mean score is computed; higher scores indicate greater levels of subscale constructs. Each subscale demonstrated moderate to high internal consistency in the present study (i.e., interpersonal manipulation,  $\alpha = 0.83$ ; impulsive outspokenness,  $\alpha = 0.62$ ; persistent perceived victimhood,  $\alpha = 0.83$ ).

## Procedure

Prior to the study implementation, IRB approval was obtained. Participants were recruited via a secure web-based recruitment website. Participants read and electronically signed a consent form indicating that they agreed to take part in the online survey. Once consent was obtained, participants completed a series of surveys in randomized order and received course credit for their participation.

## Approach to analyses

To assess normality, cutoff scores of  $|Sk| < 2$  and  $|Ku| < 7$  were used (Kim, 2013). Using these guidelines, all variables were normally distributed. Previous studies of phubbing have also used these guidelines to assess normality of data (e.g., Franchina et al., 2018). Descriptive analyses were performed to yield participant characteristics. Bivariate correlations were conducted to reveal univariate associations of interest. Seven hierarchical multiple linear regressions were conducted to test hypotheses. Specifically, four hierarchical linear regressions were conducted with GSP subscales (nomophobia, interpersonal conflict, self-isolation, problem acknowledgement) serving as the dependent variables. Three hierarchical linear regressions were conducted with GSBP subscales (perceived norms, feeling ignored, interpersonal conflict) serving as the dependent variables. In each of the seven hierarchical linear regression models, control variables (i.e., participant age and sex) were entered in Step 1. Depression, anxiety, and stress were entered in Step 2. Dark Triad traits – Machiavellianism, narcissism, and psychopathy – were entered in Step 3, and need for drama traits – interpersonal manipulation, impulsive outspokenness, and persistent perceived victimhood – were entered in Step 4. There were no issues of multicollinearity as the variance inflation factor for each independent variable was less than 10. Data (Cooper, 2022) are available through figshare: <https://doi.org/10.6084/m9.figshare.19216899>.

Twelve mediation models were conducted to explore if phubbing and being phubbed mediate the relationships between adverse personality traits and negative affect. Mediation analyses were performed using Model 4 in PROCESS Macro for SPSS (Hayes, 2022) using ten thousand bootstrapped samples of 95% confidence intervals. Six mediational models were conducted with a composite phubbing score (calculated by summing the four GSP factors – nomophobia, interpersonal conflict, self-isolation, and problem acknowledgement) serving as the mediator. There were six mediation models for each of the six adverse personality traits (Machiavellianism, narcissism, psychopathy, interpersonal manipulation, impulsive outspokenness, and persistent perceived victimhood) with each trait serving as an independent variable. Similarly, six additional mediation models were conducted with a composite being

phubbed score (calculated by summing the three GSBP factors – perceived norms, feeling ignored, interpersonal conflict) serving as the mediator. There were six mediational models for each of the six adverse personality traits with each trait serving as an independent variable. The dependent variable in all twelve mediation models was a composite DASS score that was calculated by summing depression, anxiety, and stress scores. All models controlled for participant age and sex.

## Results

Table 1 displays the participant characteristics and descriptive statistics for all study variables. Supplemental Table 1 displays the bivariate correlations between study variables. Each GSP subscale was significantly positively correlated with each GSBP subscale with the exception of nomophobia and GSBP interpersonal conflict.

**Table 1** Participant Characteristics and Descriptive Statistics

Baseline Characteristic	Frequency	<i>n</i>		
<b>Biological Sex</b>				
Men	22.6%	102		
Women	77.2%	349		
<b>Measures</b>				
	<i>Mean</i>	<i>SD</i>	<i>Range</i>	
Age	19.97	1.89	18–25	
<b>GSP</b>				
Nomophobia	14.03	5.91	4–28	
Interpersonal Conflict	7.23	4.07	4–26	
Self-Isolation	7.22	4.23	4–28	
Problem Acknowledgement	9.24	4.51	3–21	
<b>GSBP</b>				
Perceived Norms	39.51	12.24	9–63	
Feeling Ignored	26.60	12.29	8–56	
Interpersonal Conflict	13.49	7.59	5–35	
<b>DASS</b>				
Depression	13.36	11.52	0–42	
Anxiety	11.45	10.14	0–42	
Stress	14.68	10.51	0–42	
<b>SD3</b>				
Machiavellianism	2.89	0.65	1.22–4.78	
Narcissism	2.83	0.55	1.11–4.89	
Psychopathy	2.15	0.61	1–4	
<b>NFD</b>				
Interpersonal Manipulation	2.41	1.27	1–6.25	
Impulsive Outspokenness	3.48	1.20	1–7	
Persistent Perceived Victimhood	3.99	1.33	1–7	

Any sample size deviations are a result of missing data; GSP: Generic Scale of Phubbing; GSBP: General Scale of Being Phubbed; DASS: Depression, Anxiety, and Stress Scale – 21; SD3: Short Dark Triad Scale; NFD: Need for Drama Scale

## Hierarchical multiple linear regressions

Table 2 displays the hierarchical multiple linear regressions for the GSP subscales. The final regression model assessing nomophobia was statistically significant ( $F(11,433)=7.311$ ,  $R^2=0.157$  (Adjusted  $R^2=0.135$ ),  $p<0.001$ ); nomophobia was positively associated with stress ( $\beta=0.178$ ,  $p=0.050$ ) and persistent perceived victimhood ( $\beta=0.142$ ,  $p=0.005$ ). The final regression model assessing interpersonal conflict was statistically significant ( $F(11,433)=7.726$ ,  $R^2=0.164$  (Adjusted  $R^2=0.143$ ),  $p<0.001$ ); interpersonal conflict was positively associated with anxiety ( $\beta=0.211$ ,  $p=0.007$ ), psychopathy ( $\beta=0.207$ ,  $p<0.001$ ), and interpersonal manipulation ( $\beta=0.127$ ,  $p=0.028$ ). The final regression model assessing self-isolation was statistically significant ( $F(11,433)=9.106$ ,  $R^2=0.188$  (Adjusted  $R^2=0.167$ ),  $p<0.001$ ); self-isolation was positively associated with psychopathy ( $\beta=0.239$ ,  $p<0.001$ ) and interpersonal manipulation ( $\beta=0.187$ ,  $p<0.001$ ) and negatively associated with sex ( $\beta=-0.096$ ,  $p=0.036$ ) and narcissism ( $\beta=-0.132$ ,  $p=0.007$ ). The final regression model assessing problem acknowledgment was statistically significant ( $F(11,433)=7.496$ ,  $R^2=0.160$  (Adjusted  $R^2=0.139$ ),  $p<0.001$ ); problem acknowledgment was positively associated with stress ( $\beta=0.224$ ,  $p=0.013$ ) and interpersonal manipulation ( $\beta=0.232$ ,  $p<0.001$ ) and negatively associated with sex ( $\beta=-0.135$ ,  $p=0.004$ ).

Table 3 displays the hierarchical multiple linear regressions for the GSBP subscales. The final regression model assessing perceived norms was statistically significant ( $F(11,433)=6.223$ ,  $R^2=0.137$  (Adjusted  $R^2=0.115$ ),  $p<0.001$ ); perceived norms was positively associated with sex ( $\beta=0.142$ ,  $p=0.003$ ) and persistent perceived victimhood ( $\beta=0.208$ ,  $p<0.001$ ) and negatively associated with psychopathy ( $\beta=-0.212$ ,  $p<0.001$ ). However, in step 3, perceived norms was positively associated with stress ( $\beta=0.190$ ,  $p=0.040$ ) and Machiavellianism ( $\beta=0.138$ ,  $p=0.010$ ), yet these associations disappeared in step 4 when need for drama subscales were entered. The final regression model assessing feeling ignored was statistically significant ( $F(11,433)=6.358$ ,  $R^2=0.139$  (Adjusted  $R^2=0.117$ ),  $p<0.001$ ); feeling ignored was positively associated with persistent perceived victimhood ( $\beta=0.231$ ,  $p<0.001$ ). The final regression model assessing interpersonal conflict was statistically significant ( $F(11,433)=4.826$ ,  $R^2=0.109$  (Adjusted  $R^2=0.087$ ),  $p<0.001$ ); interpersonal conflict was positively associated stress ( $\beta=0.197$ ,  $p=0.035$ ) and persistent perceived victimhood ( $\beta=0.183$ ,  $p<0.001$ ).

## Mediational analyses

Table 4 displays the mediational analyses of phubbing and being phubbed mediating the relationships between adverse personality traits and DASS. Regarding models with

phubbing serving as the mediator, phubbing significantly mediated the relationship between Machiavellianism and DASS ( $\beta=0.072$ , 95% CI: 0.037, 0.110). This was a partial mediation given that the direct effect of Machiavellianism on DASS was also significant ( $\beta=0.101$ ,  $p=0.023$ ). Phubbing significantly mediated the relationship between psychopathy and DASS ( $\beta=0.105$ , 95% CI: 0.066, 0.149). This was a partial mediation given that the direct effect of psychopathy on DASS was also significant ( $\beta=0.105$ ,  $p=0.024$ ). Phubbing significantly mediated the relationship between interpersonal manipulation and DASS ( $\beta=0.115$ , 95% CI: 0.074, 0.162). This was a full mediation given that the direct effect of interpersonal manipulation on DASS was not significant ( $\beta=0.055$ ,  $p=0.242$ ). Phubbing significantly mediated the relationship between impulsive outspokenness and DASS ( $\beta=0.044$ , 95% CI: 0.011, 0.079). This was a partial mediation given that the direct effect of impulsive outspokenness on DASS was also significant ( $\beta=0.128$ ,  $p=0.003$ ). Phubbing significantly mediated the relationship between persistent perceived victimhood and DASS ( $\beta=0.079$ , 95% CI: 0.046, 0.118). This was a partial mediation given that the direct effect of persistent perceived victimhood on DASS was also significant ( $\beta=0.273$ ,  $p<0.001$ ).

Regarding models with being phubbed serving as the mediator, being phubbed significantly mediated the relationship between Machiavellianism and DASS ( $\beta=0.034$ , 95% CI: 0.004, 0.067). This was a partial mediation given that the direct effect of Machiavellianism on DASS was also significant ( $\beta=0.140$ ,  $p=0.002$ ). Being phubbed significantly mediated the relationship between interpersonal manipulation and DASS ( $\beta=0.035$ , 95% CI: 0.008, 0.068). This was a partial mediation given that the direct effect of interpersonal manipulation on DASS was also significant ( $\beta=0.135$ ,  $p=0.003$ ). Being phubbed significantly mediated the relationship between persistent perceived victimhood and DASS ( $\beta=0.061$ , 95% CI: 0.030, 0.099). This was a partial mediation given that the direct effect of persistent perceived victimhood on DASS was also significant ( $\beta=0.291$ ,  $p<0.001$ ).

A post-hoc power analysis was performed using G\*Power, a statistical power analysis tool ( $n=452$ ,  $\alpha=0.05$ ,  $f^2=0.095$ ). The smallest adjusted  $R^2$  observed in the study ( $R^2=0.087$ ) determined effect size. The number of predictors was set to 11. From these values, power was estimated to be 99%.

## Discussion

The primary aim of the present study was to replicate past findings of phubbing and being phubbed and investigate if GSP and GSBP subscales are associated with psychosocial constructs and adverse personality traits in Hispanic emerging adult college students. In the present

**Table 2** Hierarchical Multiple Linear Regressions of Generic Scale of Phubbing Subscales and Study Variables

Variable	Nomophobia			Interpersonal Conflict		
	<i>B</i>	<i>SE</i>	$\beta$	<i>B</i>	<i>SE</i>	$\beta$
Step 1						
Sex	.005	.676	.000	-.270	.465	-.028
Age	.001	.152	.000	.005	.105	.002
<i>R</i> <sup>2</sup>						.000
						.001
Step 2						
Sex	.658	.648	.046	.139	.451	.014
Age	.048	.144	.015	.021	.100	.010
DASS-DP	.060	.039	.118	-.030	.027	-.084
DASS-AX	.025	.046	.042	<b>.107</b>	<b>.032</b>	<b>.265</b>
DASS-ST	<b>.112</b>	<b>.052</b>	<b>.199</b>	.043	.036	.110
<i>R</i> <sup>2</sup>						<b>.110</b>
$\Delta R^2$						<b>.110</b>
						<b>.090</b>
						<b>.089</b>
Step 3						
Sex	.217	.658	.015	-.440	.449	-.045
Age	.030	.143	.009	-.006	.097	-.003
DASS-DP	.047	.039	.091	-.046	.027	-.130
DASS-AX	.019	.046	.031	<b>.096</b>	<b>.031</b>	<b>.238</b>
DASS-ST	<b>.109</b>	<b>.051</b>	<b>.193</b>	.047	.035	.121
SD3-MV	.900	.478	.098	-.080	.326	-.013
SD3-NS	-.160	.530	-.015	-.229	.362	-.031
SD3-PP	.969	.534	.100	<b>1.837</b>	<b>.364</b>	<b>.274</b>
<i>R</i> <sup>2</sup>						<b>.136</b>
$\Delta R^2$						<b>.026</b>
						<b>.151</b>
						<b>.062</b>
Step 4						
Sex	.051	.661	.004	-.545	.453	-.056
Age	.056	.142	.018	.002	.097	.001
DASS-DP	.048	.039	.094	-.040	.027	-.114
DASS-AX	-.004	.046	-.007	<b>.085</b>	<b>.032</b>	<b>.211</b>
DASS-ST	<b>.100</b>	<b>.051</b>	<b>.178</b>	.041	.035	.105
SD3-MV	.493	.496	.054	-.336	.340	-.053
SD3-NS	-.350	.535	-.032	-.271	.367	-.036
SD3-PP	.534	.601	.055	<b>1.387</b>	<b>.412</b>	<b>.207</b>
NFD-IM	.407	.270	.087	<b>.409</b>	<b>.185</b>	<b>.127</b>
NFD-IO	-.104	.238	-.021	.044	.163	.013
NFD-PPV	<b>.634</b>	<b>.224</b>	<b>.142</b>	.182	.154	.059
<i>R</i> <sup>2</sup>						<b>.157</b>
$\Delta R^2$						<b>.021</b>
						<b>.164</b>
						.013
Variable	Self-Isolation			Problem-Acknowledgement		
	<i>B</i>	<i>SE</i>	$\beta$	<i>B</i>	<i>SE</i>	$\beta$
Step 1						
Sex	-.467	.481	-.046	<b>-1.450</b>	<b>.510</b>	<b>-.134</b>
Age	.081	.108	.035	.049	.115	.020
<i>R</i> <sup>2</sup>						.003
						<b>.018</b>
Step 2						
Sex	-.059	.469	-.006	<b>-.964</b>	<b>.491</b>	<b>-.089</b>
Age	.105	.104	.046	.078	.109	.032
DASS-DP	.013	.028	.036	.021	.029	.053
DASS-AX	.052	.034	.125	.016	.035	.037
DASS-ST	.057	.037	.142	<b>.103</b>	<b>.039</b>	<b>.240</b>
<i>R</i> <sup>2</sup>						<b>.082</b>
						<b>.115</b>

Table 2 (continued)

	$\Delta R^2$			<b>.079</b>		<b>.097</b>
Step 3						
Sex	-.715	.461	-.071	<b>-1.202</b>	<b>.503</b>	<b>-.111</b>
Age	.076	.100	.033	.067	.109	.028
DASS-DP	-.020	.028	-.054	.020	.030	.050
DASS-AX	.047	.032	.113	.010	.035	.022
DASS-ST	.063	.036	.158	<b>.102</b>	<b>.039</b>	<b>.238</b>
SD3-MV	.151	.335	.023	.179	.366	.026
SD3-NS	<b>-1.075</b>	<b>.372</b>	<b>-.140</b>	.253	.406	.031
SD3-PP	<b>2.109</b>	<b>.374</b>	<b>.304</b>	.603	.408	.081
$R^2$				<b>.163</b>		<b>.126</b>
$\Delta R^2$				<b>.081</b>		.012
Step 4						
Sex	<b>-.970</b>	<b>.462</b>	<b>-.096</b>	<b>-1.460</b>	<b>.502</b>	<b>-.135</b>
Age	.073	.099	.032	.070	.108	.029
DASS-DP	-.014	.028	-.038	.030	.030	.078
DASS-AX	.037	.032	.087	-.007	.035	-.015
DASS-ST	.064	.036	.159	<b>.096</b>	<b>.039</b>	<b>.224</b>
SD3-MV	-.176	.347	-.027	-.267	.377	-.038
SD3-NS	<b>-1.015</b>	<b>.374</b>	<b>-.132</b>	.275	.406	.033
SD3-PP	<b>1.653</b>	<b>.420</b>	<b>.239</b>	-.164	.457	-.022
NFD-IM	<b>.622</b>	<b>.189</b>	<b>.187</b>	<b>.823</b>	<b>.205</b>	<b>.232</b>
NFD-IO	-.279	.167	-.079	-.097	.181	-.026
NFD-PPV	.107	.157	.034	.172	.170	.051
$R^2$				<b>.188</b>		<b>.160</b>
$\Delta R^2$				<b>.025</b>		<b>.034</b>

**Bold text indicates significance at  $p < .05$ ;** Women were coded as 0 and men as 1; DASS: Depression, Anxiety, and Stress Scale – 21; SD3: Short Dark Triad Scale; NFD: Need For Drama; DP: Depression; AX: Anxiety; ST: Stress; MV: Machiavellianism; NS: Narcissism; PP: Psychopathy; IM: Interpersonal Manipulation; IO: Impulsive Outspokenness; PPV: Persistent Perceived Victimhood

sample, Hispanic college students reported low-to-moderate levels of phubbing and being phubbed. These findings indicate that phubbing and being phubbed behaviors also occur within Hispanic groups, further replicating the finding that phubbing is a worldwide behavior (Al-Saggaf, 2022). Initial bivariate correlations of interest revealed that all GSP subscales were positively correlated with all GSBP subscales (with the exception of nomophobia and GSBP interpersonal conflict). This is consistent with past studies reasoning that phubbing and being phubbed can and do occur simultaneously (Chotpitayasunondh & Douglas, 2016, 2018a).

## Sociodemographics

Consistent with prior work related to phubbing and being phubbed (Chotpitayasunondh & Douglas, 2016), sex differences were observed in the present study. Women were more likely to use a smartphone to isolate themselves from

social activities and acknowledge that they had a phubbing problem, whereas men were more likely to report a heightened focus on others' phone use. One study noted that patterns of phubbing were more common in women than men (Chotpitayasunondh & Douglas, 2016). Thus, it is possible that this propensity relates to the self-isolation and problem acknowledgment observed in women. Men, who seem to report less self-isolation and problem acknowledgment, may instead direct their focus on others' phone use patterns.

## Phubbing and psychosocial constructs

No unique associations were observed between phubbing and depression among other variables of interest in regression analyses. This finding adds to the inconsistency in previous literature as one study found that depression predicted phubbing (Sun & Samp, 2021). For the present study, two explanations may be possible. First, it may be that depression does not



**Table 3** Hierarchical Multiple Linear Regressions of Generic Scale of Being Phubbed Subscales and Study Variables

Variable	Perceived Norms			Feeling Ignored		
	<i>B</i>	<i>SE</i>	$\beta$	<i>B</i>	<i>SE</i>	$\beta$
Step 1						
Sex	2.530	1.395	.086	1.908	1.399	.065
Age	-.031	.314	-.005	.040	.314	.006
<i>R</i> <sup>2</sup>						.007
						.004
Step 2						
Sex	<b>3.637</b>	<b>1.366</b>	<b>.124</b>	<b>3.122</b>	<b>1.360</b>	<b>.106</b>
Age	.036	.304	.005	.113	.303	.017
DASS-DP	.054	.081	.050	.045	.081	.042
DASS-AX	.016	.098	.014	.110	.097	.090
DASS-ST	<b>.248</b>	<b>.109</b>	<b>.213</b>	.205	.108	.175
<i>R</i> <sup>2</sup>						<b>.076</b>
$\Delta R^2$						<b>.069</b>
						<b>.086</b>
						<b>.081</b>
Step 3						
Sex	<b>4.285</b>	<b>1.389</b>	<b>.146</b>	<b>2.756</b>	<b>1.398</b>	<b>.094</b>
Age	.073	.301	.011	.101	.303	.015
DASS-DP	.088	.083	.083	.014	.084	.013
DASS-AX	.026	.097	.021	.114	.098	.094
DASS-ST	<b>.222</b>	<b>.108</b>	<b>.190</b>	.206	.109	.176
SD3-MV	<b>2.617</b>	<b>1.010</b>	<b>.138</b>	.830	1.016	.044
SD3-NS	1.377	1.119	.062	-1.305	1.126	-.058
SD3-PP	<b>-3.372</b>	<b>1.127</b>	<b>-.168</b>	.960	1.134	.048
<i>R</i> <sup>2</sup>						<b>.101</b>
$\Delta R^2$						<b>.025</b>
						<b>.092</b>
						<b>.006</b>
Step 4						
Sex	<b>4.165</b>	<b>1.384</b>	<b>.142</b>	2.345	1.384	.080
Age	.167	.298	.025	.192	.297	.029
DASS-DP	.087	.083	.082	.012	.083	.011
DASS-AX	-.034	.097	-.028	.045	.097	.037
DASS-ST	.188	.107	.161	.178	.107	.152
SD3-MV	1.742	1.040	.092	-.329	1.039	-.017
SD3-NS	.635	1.120	.028	-2.000	1.120	-.089
SD3-PP	<b>-4.275</b>	<b>1.259</b>	<b>-.212</b>	-.114	1.259	-.006
NFD-IM	.453	.566	.047	.916	.566	.095
NFD-IO	.268	.499	.026	-.265	.499	-.026
NFD-PPV	<b>1.920</b>	<b>.470</b>	<b>.208</b>	<b>2.138</b>	<b>.470</b>	<b>.231</b>
<i>R</i> <sup>2</sup>						<b>.137</b>
$\Delta R^2$						<b>.036</b>
						<b>.139</b>
						<b>.047</b>
Interpersonal Conflict						
Variable	<i>B</i>	<i>SE</i>	$\beta$			
Step 1						
Sex	.172	.861	.009			
Age	.317	.194	.078			
<i>R</i> <sup>2</sup>						.006
Step 2						
Sex	.813	.850	.045			
Age	.334	.189	.082			
DASS-DP	-.074	.051	-.112			
DASS-AX	.079	.061	.105			
DASS-ST	<b>.163</b>	<b>.068</b>	<b>.226</b>			
<i>R</i> <sup>2</sup>						<b>.061</b>

**Table 3** (continued)

	$\Delta R^2$			<b>.055</b>
Step 3				
Sex	.459	.868	.025	
Age	.316	.188	.078	
DASS-DP	-.062	.052	-.094	
DASS-AX	.062	.061	.083	
DASS-ST	<b>.158</b>	<b>.067</b>	<b>.219</b>	
SD3-MV	.391	.631	.033	
SD3-NS	1.199	.699	.087	
SD3-PP	.705	.704	.057	
$R^2$				<b>.079</b>
$\Delta R^2$				<b>.018</b>
Step 4				
Sex	.273	.868	.015	
Age	.362	.186	.089	
DASS-DP	-.061	.052	-.092	
DASS-AX	.028	.061	.037	
DASS-ST	<b>.142</b>	<b>.067</b>	<b>.197</b>	
SD3-MV	-.196	.652	-.017	
SD3-NS	.849	.702	.061	
SD3-PP	.089	.789	.007	
NFD-IM	.489	.355	.082	
NFD-IO	-.042	.313	-.007	
NFD-PPV	<b>1.043</b>	<b>.295</b>	<b>.183</b>	
$R^2$				<b>.109</b>
$\Delta R^2$				<b>.030</b>

**Bold indicates significance at  $p < .05$** ; Women were coded as 0 and men as 1; DASS: Depression, Anxiety, and Stress Scale – 21; SD3: Short Dark Triad Scale; NFD: Need For Drama; DP: Depression; AX: Anxiety; ST: Stress; MV: Machiavellianism; NS: Narcissism; PP: Psychopathy; IM: Interpersonal Manipulation; IO: Impulsive Outspokenness; PPV: Persistent Perceived Victimhood

**Table 4** Mediation Analyses for DASS Outcomes

Variable			Total Effect (c)			Direct Effect (c')			Indirect Effect (ab)			95% CI for B	
IV	Mediator	DV	B	SE	$\beta$	B	SE	$\beta$	B	SE	$\beta$	Lower	Upper
MV	GSP	DASS	<b>7.890</b>	<b>2.111</b>	<b>.173</b>	<b>4.619</b>	<b>2.020</b>	<b>.101</b>	<b>3.271</b>	<b>.859</b>	<b>.072</b>	<b>1.693</b>	<b>5.037</b>
NS	GSP	DASS	-4.732	2.527	-.088	<b>-5.121</b>	<b>2.341</b>	<b>-.095</b>	.389	1.004	.007	-1.596	2.350
PP	GSP	DASS	<b>10.181</b>	<b>2.284</b>	<b>.210</b>	<b>5.105</b>	<b>2.254</b>	<b>.105</b>	<b>5.075</b>	<b>1.009</b>	<b>.105</b>	<b>3.206</b>	<b>7.111</b>
IM	GSP	DASS	<b>3.954</b>	<b>1.096</b>	<b>.170</b>	1.274	1.086	.055	<b>2.681</b>	<b>.516</b>	<b>.115</b>	<b>1.733</b>	<b>3.743</b>
IO	GSP	DASS	<b>4.248</b>	<b>1.145</b>	<b>.172</b>	<b>3.168</b>	<b>1.076</b>	<b>.128</b>	<b>1.080</b>	<b>.427</b>	<b>.044</b>	<b>.272</b>	<b>1.951</b>
PPV	GSP	DASS	<b>7.833</b>	<b>.979</b>	<b>.352</b>	<b>6.078</b>	<b>.963</b>	<b>.273</b>	<b>1.754</b>	<b>.415</b>	<b>.079</b>	<b>1.014</b>	<b>2.646</b>
MV	GSBP	DASS	<b>7.890</b>	<b>2.111</b>	<b>.173</b>	<b>6.361</b>	<b>2.048</b>	<b>.140</b>	<b>1.529</b>	<b>.737</b>	<b>.034</b>	<b>.165</b>	<b>3.082</b>
NS	GSBP	DASS	-4.732	2.527	-.088	<b>-5.010</b>	<b>2.240</b>	<b>-.093</b>	.279	.887	.005	-1.484	2.018
PP	GSBP	DASS	<b>10.181</b>	<b>2.284</b>	<b>.210</b>	<b>9.218</b>	<b>2.200</b>	<b>.190</b>	.963	.685	.020	-.293	2.408
IM	GSBP	DASS	<b>3.954</b>	<b>1.096</b>	<b>.170</b>	<b>3.141</b>	<b>1.063</b>	<b>.135</b>	<b>.813</b>	<b>.364</b>	<b>.035</b>	<b>.175</b>	<b>1.590</b>
IO	GSBP	DASS	<b>4.248</b>	<b>1.145</b>	<b>.172</b>	<b>3.774</b>	<b>1.102</b>	<b>.153</b>	.473	.371	.019	-.212	1.262
PPV	GSBP	DASS	<b>7.833</b>	<b>.979</b>	<b>.352</b>	<b>6.470</b>	<b>1.010</b>	<b>.291</b>	<b>1.363</b>	<b>.401</b>	<b>.061</b>	<b>.655</b>	<b>2.225</b>

**Bold indicates significance at  $p < .05$** ; All models controlled for participant age and sex; GSP: Generic Scale of Phubbing composite score; GSBP: Generic Scale of Being Phubbed composite score; DASS: Depression, Anxiety, and Stress Scale – 21 composite score; MV: Machiavellianism; NS: Narcissism; PP: Psychopathy; IM: Interpersonal Manipulation; IO: Impulsive Outspokenness; PPV: Persistent Perceived Victimhood

predict phubbing in Hispanic emerging college students. Second, it may be that sociocultural factors not measured in the present study may influence this relationship in Hispanic college students. For example, data were collected at a commuter heavy school suggesting that individuals may spend less time with friends and more time with family; peers may phub more, while family members may phub less. Familism, an important sociocultural factor within Hispanics, may be serving as a protective factor against depression. For example, one study (Gallegos & Segrin, 2022) observed that familism predicted lower loneliness, and lower loneliness predicted lower depression. Given that increased time with family may influence this relationship, future directions may include measurement of sociocultural constructs such as familism.

Three anxiety and stress associations were observed partially supporting hypotheses. First, that anxiety was positively associated with interpersonal conflict suggests that Hispanic college students' anxiety may increase due to attending to their smartphone rather than their social situation, or as previous studies have reasoned (e.g., Bitar et al., 2022) individuals with higher levels of anxiety may use their smartphone to cope with the anxiety being created from their social situation. Second, the positive association between stress and nomophobia suggests that college students reporting high levels of stress may use their smartphones frequently to alleviate stress, or that multitasking between a smartphone and a social situation may lead to higher stress levels. Third, a similar bidirectional possibility may also explain the positive association between stress and problem acknowledgment such that problem acknowledgment leads to heightened stress, or that heightened stress leads one to realize they have a phubbing problem. These findings are consistent with the literature, as one meta-analysis found a small-to-medium effect size between smartphone use and stress and anxiety ( $r=0.22$ ; Vahedi & Saiphoo, 2018). However, given the cross-sectional design of the present study, future studies should examine the temporality of these associations.

### Phubbing and personality traits

In relation to the Dark Triad, narcissism and psychopathy demonstrated significant associations with phubbing. That narcissism was negatively associated with self-isolation suggests that if grandiose and self-promoting behaviors are high (i.e., narcissistic tendencies), then one may be less likely to self-isolate by phubbing, as excluding oneself from a social situation is typically inconsistent with narcissistic traits. Psychopathy was positively associated with interpersonal conflict and self-isolation. Given that the facets of psychopathy include low empathy and emotional coldness (Paulhus & Williams, 2002), individuals with these facets may disregard conflict and others when phubbing. These findings

are inconsistent with past studies which observed that only vulnerable narcissism predicted phubbing (Grieve & March, 2021). However, politeness theory (Brown & Levinson, 1987; Miller-Ott & Kelly, 2017) may explicate the present findings as individuals with low empathy usually have limited politeness for others, thus disregarding conflict and other people.

As for need for drama, that interpersonal manipulation was positively associated with interpersonal conflict, self-isolation, and problem acknowledgment suggests the potential that a virtual environment may be easier to manipulate. This is consistent with past studies of social media addiction, as one study reasoned that individuals with a greater need for drama may exploit the accessibility of social media to engage in interpersonal manipulation (Lerma et al., 2021). The positive association between persistent perceived victimhood and nomophobia indicates that smartphones may serve as an important tool to continue garnering attention and portraying oneself as the victim, as a virtual environment usually reaches a larger audience than a given social situation.

### Being phubbed and psychosocial constructs

No associations were observed between depression, anxiety, and being phubbed in regression analyses. This finding adds to the inconsistency in previous literature as Ergün et al. (2020) found that anxiety predicted being phubbed. Explanations here may be similar to those regarding depression and phubbing discussed earlier. However, these findings are surprising given that social exclusion theory (Williams, 2007, 2009) postulates that being phubbed would be associated with negative affect, as phubbing is argued to be a smartphone version of social exclusion (Chotpitayasunondh & Douglas, 2018b; Hales et al., 2018). However, social exclusion theory may be supported by the positive association between stress and interpersonal conflict indicating that conflict between oneself and others' phone use may create high stress levels. Future directions may include ecological momentary assessments of negative affect as participants are being phubbed and/or experimental designs in which participants are randomly assigned to different phubbing conditions (e.g., Chotpitayasunondh & Douglas, 2018b).

### Being phubbed and personality traits

Findings revealed few of the hypothesized relationships between being phubbed and socially adverse personality traits. Regarding the Dark Triad, psychopathy was negatively associated with perceived norms. This suggests that individuals with low empathy and disregard for others (i.e., psychopathic tendencies, Paulhus & Williams, 2002) may be less likely to

direct their focus on others' phone use. Notably, stress and Machiavellianism were positively associated with perceived norms until need for drama was entered in the model suggesting that need for drama, and more specifically persistent perceived victimhood, may capture the more nuanced elements of focusing on others' smartphone use. Indeed, persistent perceived victimhood was positively associated with perceived norms, feeling ignored, and interpersonal conflict which suggests that one may report being phubbed more often to continue garnering attention and portraying oneself as the victim. Given these findings and the scarce literature assessing the associations between socially adverse personality traits, phubbing, and being phubbed, future studies should include these traits in similar and prospective studies.

### Exploratory mediations

The secondary aim of the present study was to explore phubbing and being phubbed as potential mediators of the relationships between adverse personality traits and negative affect. Findings demonstrated that phubbing mediated the relationships between Machiavellianism, narcissism, interpersonal manipulation, impulsive outspokenness, and persistent perceived victimhood and negative affect. These mediation effects indicate that individuals high in Machiavellianism, psychopathy, and need for drama are more likely to engage in phubbing which in turn leads to greater negative affect. This seems consistent with politeness theory (Brown & Levinson, 1987; Miller-Ott & Kelly, 2017) such that adverse personality traits are inherently impolite, and phubbing is typically considered an impolite behavior (Miller-Ott & Kelly, 2017; Vanden Abeele et al., 2016); thus, being high in socially adverse personality traits leads to greater phubbing. Subsequently, phubbing leads to greater negative affect suggesting that increased use of smartphones, especially when smartphones interfere with social interactions, may increase negative affect.

The present study also observed that being phubbed mediated the relationships between Machiavellianism, interpersonal manipulation, and persistent perceived victimhood and negative affect. These mediation effects suggest that individuals high in Machiavellianism and need for drama traits are more likely to be phubbed which in turn leads to greater negative affect. Chotpitayasunondh and Douglas (2016) observed that phubbers are more likely to be phubbed and thus have the behavior reciprocated. Along with these previous findings, the present study suggests that individuals high in Machiavellianism and need for drama traits may be more likely to be phubbed given that individuals reporting these traits are more likely to phub others as noted above. Subsequently, being phubbed leads to negative affect which

is in line with social exclusion theory (Williams, 2007, 2009) and past research (Chotpitayasunondh & Douglas, 2018b; Hales et al., 2018) such that being phubbed may be considered a form of social exclusion and leads to greater negative affect. Despite the novelty of these mediational findings, they should be interpreted with caution given that the present study employed a cross-sectional design in which temporality cannot be determined. Longitudinal studies are warranted to investigate the temporality of these observed mediational relationships.

### Limitations and strengths

Several limitations and strengths exist in the present study. First, the data were collected using a convenience sample that included mostly women and included only Hispanic emerging adult college individuals, therefore limiting generalizability to non-college Hispanic emerging adults and emerging adults from other ethnocultural groups. However, given that the literature concerning Hispanics, phubbing, and being phubbed is non-existent, the homogeneity of the sample is also a study strength. Second, the cross-sectional design of this study does not allow temporal assessment of observed relationships, necessitating prospective studies. In addition to a theoretically-based assessment within understudied Hispanic college students, strengths included: investigating the individual subscales of the GSP and GSBP, assessing psychosocial correlates commonly observed in non-Hispanic samples, and including potentially important personality traits.

### Future directions and conclusions

Findings from the present study suggest that anxiety, stress, narcissism, psychopathy, interpersonal manipulation, and persistent perceived victimhood relate to GSP and GSBP subscales in Hispanic college students. Moreover, phubbing and being phubbed mediated the relationships between multiple socially adverse personality traits and negative affect. While these findings are novel and yet to be replicated, clinical implications may deserve discussion. Mindfulness-based interventions may assist phubbers in staying in the present moment with the person(s) they are with which may also be effective in reducing anxiety and stress. Motivational enhancement in which phubbers weigh the advantages and disadvantages of phubbing may also be effective in decreasing phubbing behavior. Assertiveness training within cognitive-behavioral therapy may improve a phubbee's communication skills to inform their conversation partner of phubbing behavior. Prevention strategies targeting those with socially adverse personality traits and a propensity for phubbing may include psychoeducation of phubbing's impact on negative affect and

social skills training to develop and use techniques that promote strong, healthy social interactions.

Future prospective studies are warranted to determine the temporality of the associations observed in the present study and include other Hispanics, non-Hispanics, and non-college emerging adult samples. Studies should attend to the constructs measured presently as well as other non-measured constructs (e.g., familism) and the phubbing agent (e.g., friend, family). Additionally, due to the potential vagueness of phubbing and being phubbed, future studies may wish to define phubbing more concretely such as only occurring in a social interaction between two conversation partners, or among a group of people. Other methodologies such as ecological momentary assessment and experimental designs can be used to better capture these associations in real-time.

**Supplementary information** The online version contains supplementary material available at <https://doi.org/10.1007/s12144-023-04767-y>.

**Acknowledgements** The authors would like to acknowledge all past and present members of the Prevention and Treatment in Clinical Health laboratory.

**CRedit author statement** Garcia: Conceptualization, Formal analysis, Writing – original draft; Lerma: Conceptualization, Data curation, Writing – review and editing; Gainza Perez: Conceptualization, Data curation, Writing – review and editing; Sandoval Medina: Data curation, Writing – review and editing; Rodriguez-Crespo: Conceptualization, Data curation, Writing – review and editing; Cooper: Conceptualization, Methodology, Investigation, Resources, Formal analysis, Writing – review and editing, Supervision.

**Funding** This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

**Data availability** The datasets generated during and/or analysed during the current study are available in the figshare repository, [<https://doi.org/10.6084/m9.figshare.19216899>].

## Declarations

**Ethics approval** All procedures followed were in accordance with the ethical standards of the responsible committee on human experimentation (institutional and national) and with the Helsinki Declaration of 1975, as revised in 2000. Institutional review board approval was obtained from the University of Texas at El Paso. Informed consent was obtained from all patients for being included in the study.

**Conflict of interest** The Author(s) declare(s) that there is no conflict of interest.

## References

- Al-Saggaf, Y. (2022). *The psychology of phubbing*. Springer Singapore. <https://doi.org/10.1007/978-981-19-7045-0>
- Al-Saggaf, Y., & O'Donnell, S. B. (2019). Phubbing: Perceptions, reasons behind, predictors, and impacts. *Human Behavior and Emerging Technologies*, 1(2), 132–140. <https://doi.org/10.1002/hbe2.137>
- Balta, S., Jonason, P., Denes, A., Emirtekin, E., Tosuntaş, ŞB., Kircaburun, K., & Griffiths, M. D. (2019). Dark personality traits and problematic smartphone use: The mediating role of fearful attachment. *Personality and Individual Differences*, 149, 214–219. <https://doi.org/10.1016/j.paid.2019.06.005>
- Bitar, Z., Akel, M., Salameh, P., Obeid, S., & Hallit, S. (2022). Phubbing among Lebanese young adults: Scale validation and association with mental health (depression, anxiety, and stress). *Current Psychology*. <https://doi.org/10.1007/s12144-022-03104-z>
- Błażchnio, A., & Przepiorka, A. (2019). Be aware! If you start using Facebook problematically you will feel lonely: Phubbing, loneliness, self-esteem, and Facebook intrusion. A cross-sectional study. *Social Science Computer Review*, 37(2), 270–278. <https://doi.org/10.1177/0894439318754490>
- Brown, P., & Levinson, S. C. (1987). *Politeness: Some universals in language usage*. Cambridge University Press.
- Chotpitayasunondh, V., & Douglas, K. M. (2016). How “phubbing” becomes the norm: The antecedents and consequences of snubbing via smartphone. *Computers in Human Behavior*, 63, 9–18. <https://doi.org/10.1016/j.chb.2016.05.018>
- Chotpitayasunondh, V., & Douglas, K. M. (2018). Measuring phone snubbing behavior: Development and validation of the Generic Scale of Phubbing (GSP) and the Generic Scale of Being Phubbed (GSPB). *Computers in Human Behavior*, 88, 5–17. <https://doi.org/10.1016/j.chb.2018.06.020>
- Chotpitayasunondh, V., & Douglas, K. M. (2018). The effects of “phubbing” on social interaction. *Journal of Applied Social Psychology*, 48(6), 304–316. <https://doi.org/10.1111/jasp.12506>
- Cooper, T. V. (2022). Social media 2021. Figshare. [https://figshare.com/articles/dataset/Social\\_Media\\_2021/19216899](https://figshare.com/articles/dataset/Social_Media_2021/19216899)
- Demirci, K., Akgönül, M., & Akpınar, A. (2015). Relationship of smartphone use severity with sleep quality, depression, and anxiety in university students. *Journal of Behavioral Addictions*, 4(2), 85–92. <https://doi.org/10.1556/2006.4.2015.010>
- Ergün, N., Göksu, İ., & Sakız, H. (2020). Effects of phubbing: Relationships with psychodemographic variables. *Psychological Reports*, 123(5), 1578–1613. <https://doi.org/10.1177/0033294119889581>
- Franchina, V., Vanden Abeele, M., van Rooij, A. J., Lo Coco, G., & De Marez, L. (2018). Fear of missing out as a predictor of problematic social media use and phubbing behavior among Flemish adolescents. *International Journal of Environmental Research and Public Health*, 15(10), 2319. <https://doi.org/10.3390/ijerph15102319>
- Frankowski, S., Lupo, A. K., Smith, B. A., Dane'El, M., Ramos, C., & Morera, O. F. (2016). Developing and Testing a Scale to Measure Need for Drama. *Personality and Individual Differences*, 89, 192–201. <https://doi.org/10.1016/j.paid.2015.10.009>
- Gallegos, M. L., & Segrin, C. (2022). Family connections and the Latino health paradox: Exploring the mediating role of loneliness in the relationships between the Latina/o cultural value of familism and health. *Health Communication*, 37(9), 1204–1214. <https://doi.org/10.1080/10410236.2021.1909244>
- Grieve, R., & March, E. (2021). ‘Just checking’: Vulnerable and grandiose narcissism subtypes as predictors of phubbing. *Mobile Media & Communication*, 9(2), 195–209. <https://doi.org/10.1177/2050157920942276>
- Grieve, R., Lang, C. P., & March, L. (2021). More than a preference for online social interaction: Vulnerable narcissism and phubbing. *Personality and Individual Differences*, 175, 110715. <https://doi.org/10.1016/j.paid.2021.110715>
- Guazzini, A., Duradoni, M., Capelli, A., & Meringolo, P. (2019). An explorative model to assess Individuals’ phubbing risk. *Future Internet*, 11(1), 21. <https://doi.org/10.3390/fi11010021>
- Guazzini, A., Raimondi, T., Biagini, B., Bagnoli, F., & Duradoni, M. (2021). Phubber’s emotional activations: The association between

- PANAS and phubbing behavior. *Future Internet*, 13(12), 311. <https://doi.org/10.3390/fi13120311>
- Gutierrez, K. M., & Cooper, T. V. (2016). The use of social networking sites: A risk factor for using alcohol, marijuana, and synthetic cannabinoids? *Drug and Alcohol Dependence*, 163, 247–250. <https://doi.org/10.1016/j.drugalcdep.2016.03.021>
- Hales, A. H., Dvir, M., Wesselmann, E. D., Kruger, D. J., & Finkenauer, C. (2018). Cell phone-induced ostracism threatens fundamental needs. *The Journal of Social Psychology*, 158(4), 460–473. <https://doi.org/10.1080/00224545.2018.1439877>
- Hayes, A. (2022). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach* (3rd ed.). Guilford Press.
- Jones, D. N., & Paulhus, D. L. (2014). Introducing the Short Dark Triad (SD3): A brief measure of dark personality traits. *Assessment*, 21(1), 28–41. <https://doi.org/10.1177/1073191113514105>
- Karadağ, E., Tosuntaş, ŞB., Erzen, E., Duru, P., Bostan, N., Şahin, B. M., Çulha, İ., & Babadağ, B. (2015). Determinants of phubbing, which is the sum of many virtual addictions: A structural equation model. *Journal of Behavioral Addictions*, 4(2), 60–74. <https://doi.org/10.1556/2006.4.2015.005>
- Kim, H.-Y. (2013). Statistical notes for clinical researchers: Assessing normal distribution (2) using skewness and kurtosis. *Restorative Dentistry & Endodontics*, 38(1), 52–54. <https://doi.org/10.5395/rde.2013.38.1.52>
- Knausenberger, J., Giesen-Leuchter, A., & Echterhoff, G. (2022). Feeling ostracized by others' smartphone use: The effect of phubbing on fundamental needs, mood, and trust. *Frontiers in Psychology*, 13, 883901. <https://doi.org/10.3389/fpsyg.2022.883901>
- Krogstad, J. M., Passel, J. S., & Noe-Bustamante, L. (2022). *Key facts about U.S. Latinos for national Hispanic heritage month*. Pew Research Center. Retrieved October 3, 2022, from <https://www.pewresearch.org/fact-tank/2021/09/09/key-facts-about-u-s-latinos-for-national-hispanic-heritage-month/>
- Lerma, M., Marquez, C., Sandoval, K., & Cooper, T. V. (2021). Psychosocial correlates of excessive social media use in a Hispanic college sample. *Cyberpsychology, Behavior, and Social Networking*, 24(11), 722–728. <https://doi.org/10.1089/cyber.2020.0498>
- Lovibond, P. F., & Lovibond, S. H. (1995). The structure of negative emotional states: Comparison of the depression anxiety stress scales (DASS) with the Beck depression and anxiety inventories. *Behaviour Research and Therapy*, 33(3), 335–343. [https://doi.org/10.1016/0005-7967\(94\)00075-U](https://doi.org/10.1016/0005-7967(94)00075-U)
- McDaniel, B. T., & Coyne, S. M. (2016). “Technoference”: The interference of technology in couple relationships and implications for women's personal and relational well-being. *Psychology of Popular Media Culture*, 5(1), 85–98. <https://doi.org/10.1037/ppm0000065>
- McDaniel, B. T., & Wesselmann, E. (2021). “You phubbed me for that?” Reason given for phubbing and perceptions of interactional quality and exclusion. *Human Behavior and Emerging Technologies*, 3, 413–422. <https://doi.org/10.1002/hbe2.255>
- Miller-Ott, A. E., & Kelly, L. (2017). A politeness theory analysis of cell-phone usage in the presence of friends. *Communication Studies*, 68(2), 190–207. <https://doi.org/10.1080/10510974.2017.1299024>
- National Institute of Mental Health. (2022). *Mental illness statistics*. Retrieved December 12, 2022, from <https://www.nimh.nih.gov/health/statistics/mental-illness>
- Noe-Bustamante, L., Mora, L., & Lopez, M. H. (2020). *About one-in-four U.S. Hispanics have heard of Latinx, but just 3% use it*. Pew Research Center. Retrieved March 19, 2023, from <https://www.pewresearch.org/hispanic/2020/08/11/about-one-in-four-u-s-hispanics-have-heard-of-latinx-but-just-3-use-it/>
- Núñez, T. R., Radtke, T., & Eimler, S. C. (2020). A third-person perspective on phubbing: Observing smartphone-induced social exclusion generates negative affect, stress, and derogatory attitudes. *Cyberpsychology: Journal of Psychosocial Research on Cyberspace*, 14(3), 94–115. <https://doi.org/10.5817/CP2020-3-3>
- Paulhus, D. L., & Williams, K. M. (2002). The dark triad of personality: Narcissism, Machiavellianism, and psychopathy. *Journal of Research in Personality*, 36(6), 556–563. [https://doi.org/10.1016/S0092-6566\(02\)00505-6](https://doi.org/10.1016/S0092-6566(02)00505-6)
- Pearson, C., & Hussain, Z. (2015). Smartphone use, addiction, narcissism, and personality: A mixed methods investigation. *International Journal of Cyber Behavior, Psychology and Learning*, 5(1), 17–32. <https://doi.org/10.4018/ijcbpl.2015010102>
- Statista. (2022a). *Number of smartphone subscriptions worldwide from 2016 to 2027*. Retrieved September 22, 2022a, from <https://www.statista.com/statistics/330695/number-of-smartphone-users-worldwide/>
- Statista. (2022b). *How much time on average do you spend on your phone on a daily basis?* Retrieved September 22, 2022b, from <https://www.statista.com/statistics/1224510/time-spent-per-day-on-smartphone-us/>
- Statista (2022c). *Share of adults in the United States who owned a smartphone from 2011 to 2021, by ethnicity*. Retrieved December 8, 2022c, from <https://www.statista.com/statistics/195001/percentage-of-us-smartphone-owners-by-ethnicity/>
- Sun, J., & Samp, J. A. (2021). ‘Phubbing is happening to you’: Examining predictors and effects of phubbing behaviour in friendships. *Behaviour & Information Technology*. <https://doi.org/10.1080/0144929X.2021.1943711>
- U.S. Department of Education. (2021). *Total fall enrollment in degree granting postsecondary institutions, by level of enrollment, sex, attendance status, and race/ethnicity or nonresident alien status of student: Selected years, 1976 through 2020*. Retrieved from [https://nces.ed.gov/programs/digest/d19/tables/dt19\\_306.10.asp](https://nces.ed.gov/programs/digest/d19/tables/dt19_306.10.asp). Accessed October 1, 2022.
- Vahedi, Z., & Saipho, A. (2018). The association between smartphone use, stress, and anxiety: A meta-analytic review. *Stress and Health*, 34(3), 347–358. <https://doi.org/10.1002/smi.2805>
- VandenAbee, M. M. P., Antheunis, M. L., & Schouten, A. P. (2016). The effect of mobile messaging during a conversation on impression formation and interaction quality. *Computers in Human Behavior*, 62, 562–569. <https://doi.org/10.1016/j.chb.2016.04.005>
- Williams, K. D. (2007). Ostracism. *Annual Review of Psychology*, 58, 425–452. <https://doi.org/10.1146/annurev.psych.58.110405.085641>
- Williams, K. D. (2009). Ostracism: A temporal need-threat model. In M. P. Zanna (Ed.), *Advances in experimental social psychology*, Vol 41, (pp. 275–314). Elsevier Academic Press. [https://doi.org/10.1016/S0065-2601\(08\)00406-1](https://doi.org/10.1016/S0065-2601(08)00406-1)

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