Lonely, impulsive, and seeking attention: Predictors of narcissistic adolescents' antisocial and prosocial behaviors on social media

Ying Wang[1] [iD], Skyler T. Hawk[1], Natalie Wong[1] and Yan Zhang[2]

Abstract

Narcissistic youth use social media to engage in a variety of self-promotional behaviors, which have either antisocial or prosocial characteristics. Differing views exist to explain the processes underlying narcissistic self-promotion, either characterizing these actions as intentional, or as impulsive. This study compared intentional attention-seeking and impulsivity as potential mediators of relations between narcissism and both aggressive (i.e., cyberbullying) and prosocial online behavior, and examined whether youth's loneliness might strengthen these associations. Among Chinese early adolescents ($N=213$, $M_{age}=13.26$), narcissism positively predicted youth-reported cyberbullying offending and online prosocial behavior. Loneliness moderated the link between narcissism and attention-seeking, but not impulsivity. Among adolescents higher in loneliness, narcissism indirectly predicted cyberbullying and online prosocial behaviors via attention-seeking. These results highlight narcissism, loneliness, and their interplay as potential predictors of youth's social media behaviors. Links with attention-seeking, in particular, suggest that educators and practitioners might target youth's conscious expectations for social rewards when counseling narcissistic adolescents about self-promotional social media use.

Narcissistic youth often promote themselves on social media (Hawk et al., 2019), and engage in both antagonistic and prosocial behaviors to attain status (Grapsas et al., 2020). While narcissistic aggression has received much research attention (Lambe et al., 2018), fewer studies have simultaneously examined prosocial behavior as a potential alternative for building or maintaining status. Prior theories have largely characterized narcissistic individuals' self-promotional behaviors as either intentional and strategic (Grapsas et al., 2020; Morf & Rhodewalt, 2001) or as stemming from dispositional impulsivity (Vazire & Funder, 2006). Both perspectives also regard loss of social validation as a risk factor that might aggravate self-promotional tendencies. The present study compared these two accounts, examining whether early adolescents' trait narcissism, lack of peer support, and the interaction between these two factors predicted their aggressive and prosocial online behaviors via strategic attention-seeking or impulsivity.

Narcissistic Adolescents' Behaviors on Social Media

Youth narcissism is often conceptualized as a continuous personality trait, characterized by inflated self-views of superiority, entitlement, and willingness to exploit others. These traits are normally distributed in the general population, rather than representing a clinical personality disorder (Thomaes et al., 2008). Narcissistic traits predispose individuals to behave aggressively in interpersonal interactions (Lambe et al., 2018), including youth cyberbullying behaviors (Tanrikulu & Erdur-Baker, 2021).

In contrast to this emphasis on narcissistic antagonism, recent research has also suggested that narcissistic individuals can become "strategic helpers" (Konrath et al., 2016). For example, young adults' narcissism positively predicts helping behaviors when others are watching, as well as opportunistic prosocial behaviors that offer potential benefits like admiration or social approval (Konrath et al., 2016). Recent research has also linked narcissism to "prosocial" motivations for social media use (March & Marrington, 2023), such as fulfilling belongingness needs. To date, however, no research to our knowledge has examined the link between narcissism and more typical conceptualizations of prosociality (i.e., behaviors that directly benefit others) in social media interactions. Most social media platforms integrate private

[1]The Chinese University of Hong Kong, Hong Kong
[2]Shenzhen University, China

Corresponding author:
Yan Zhang, School of Media and Communication, Shenzhen University, Rm823, Zhiyi building, 3688# Nanhai avenue, Shenzhen 518000, China.
Email: zhangyansmile@szu.edu.cn

messaging functions with opportunities for public interaction, meaning that youth can enact prosocial behaviors both within specific relationships (e.g., sending private supportive messages) and in the presence of online peers (e.g., publicly giving "likes"). Considering that narcissistic prosocial behaviors have received less attention, compared to aggression, addressing this issue can offer insights into a potentially positive aspect of narcissism in social media interactions.

Prior studies on narcissism and social media have mainly focused on late adolescents and emerging adults, with less attention to early adolescence (Hawk et al., 2019). However, individual differences in narcissism are increasingly apparent from early adolescence and can contribute to observed differences in youth's cognitive and behavioral patterns (Thomaes et al., 2008). During adolescence, individuals often undergo peak fragility in their self-concept, and they are inclined to assess their self-worth based on peer perception. Adolescents higher in narcissism might therefore be especially likely to experience self-concept fragility and social sensitivity along with grandiose features, and narcissistic traits are a relevant predictor of peer interpersonal behavior during this developmental period (Thomaes et al., 2008). Early adolescence is also when individuals begin to establish independent social media accounts and practice how to achieve social goals with peers (Nesi et al., 2018). Adaptive social media adjustment can benefit adolescents' broader, long-term development of social cognitive functioning (Nesi et al., 2018). Examining these adjustment processes in younger populations can provide guidance for early instruction and intervention efforts before youth's maladaptive social media habits become more ingrained and result in adverse developmental outcomes.

Accounting for Narcissistic Adolescents' Online Behaviors

Many theories of narcissism characterize self-promotional behaviors as intentional and strategic. Extending classic self-regulatory processing perspectives (Morf & Rhodewalt, 2001), the Status Pursuit In Narcissism (SPIN) model (Grapsas et al., 2020) proposes that narcissistic individuals' core behavioral motivation is to pursue prominence, respect, and interpersonal influence. These status goals often entail efforts to garner attention, popularity, and likeability among peers (Kiefer & Ryan, 2011). Prior longitudinal research found that adolescent narcissism positively predicted subsequent attention-seeking motivations on social media, which in turn predicted problematic social media use (Hawk et al., 2019). We therefore expected that attention-seeking might account for associations between narcissism and self-promotional social media behaviors.

The SPIN model suggests that narcissists utilize two strategies to fulfill their explicit desires for higher status. One strategy, termed the "rivalry pathway," consists of using aggression to derogate others whose achievements they view as a hindrance to their own status. Recent research indeed suggests that cyberbullying can be a goal-oriented behavior that is at least partially motivated by status pursuits (Lambe et al., 2018; Tanrikulu & Erdur-Baker, 2021). A second strategy, termed the "admiration pathway," is to gain positive regard by displaying competence and other desirable qualities. These efforts might manifest as prosocial behaviors that allow one to appear highly capable or generous. The SPIN model would therefore suggest that narcissists' intentional pursuit of status can explain both their aggressive and prosocial behaviors. Although narcissists typically default to the admiration pathway, the rivalry pathway becomes active when efforts to acquire affirmation are blocked (Grapsas et al., 2020).

Alternatively, narcissistic adolescents' self-promotion might stem from greater dispositional impulsivity (Vazire & Funder, 2006). This view posits that narcissists' maintenance of overly positive self-perceptions routinely leads to an exhaustion of self-control resources (Vazire & Funder, 2006), which in turn leads to hostility. Supporting this account, narcissism predicts preferences for smaller, immediate rewards over larger, later benefits in a delay discounting task (Malesza & Kalinowski, 2019). This pattern captures the potential consequences of cyberbullying perpetration, in which behaviors that feel good "in the moment" can negatively impact one's long-term reputation (Leckelt et al., 2015). Impulsivity also accounts for the relations between narcissism and non-aggressive self-enhancement behaviors, such as materialistic consumption (Rose, 2007). Especially when they have an opportunity to build social capital, narcissists might act impulsively to display desirable qualities like generosity without fully considering related costs. In summary, narcissists might have difficulty suppressing both aggressive and prosocial self-promotional impulses.

Narcissistic Adolescents' Responses to Loneliness

Peer relationships begin to replace family as the primary source of social support in early adolescence. Perceptions of peer rejection may represent a chronic form of status loss for adolescents; loneliness is therefore highly relevant to their interpersonal experiences (Asher et al., 1984; Qualter et al., 2015). Lonely adolescents are prone to using social media to compensate for low peer support and increase social connection (Nesi et al., 2022). Related status recovery can either involve antisocial behaviors, such as exploitation and manipulation, or engagement in socially valued prosocial behaviors (Johnson et al., 2012; Ren et al., 2018).

Strategic and impulsivity perspectives on narcissistic self-promotion can both offer explanations for why loneliness might exacerbate social media behaviors. Narcissists' self-views are contingent on positive social feedback, and lack of social affirmation can trigger threats to fundamental psychological needs (e.g., self-esteem, belongingness, control, and meaningful existence) and induce subsequent compensatory behaviors (Grapsas et al., 2020; Mazinani et al., 2021). Adolescents' narcissism is associated with an increasing attempt to retain power and intensively promote themselves when the environment does not validate their inflated self-views (Hawk et al., 2015, 2019). Loneliness in adolescence is a chronic lack of peer support, in which youth receive little social approval or affirmation from peers (Qualter et al., 2015). Therefore, loneliness should be considered as a social risk factor that threatens the self-views of narcissistic youth, in particular, likely prompting deliberate self-esteem recovery and affirmation-seeking behaviors (Grapsas et al., 2020; Hawk et al., 2019). Impulsivity perspectives, in contrast, suggest that external affirmation deficits require narcissists to use more internal resources to maintain self-worth
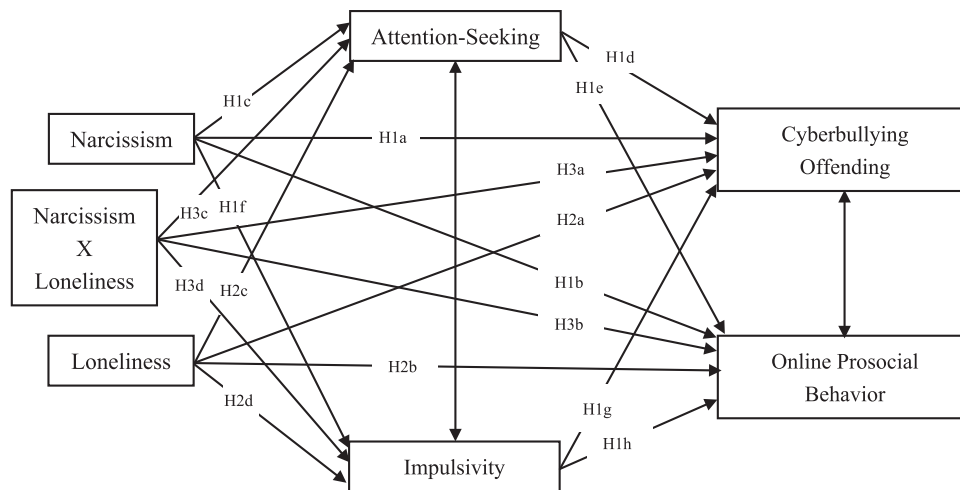
Figure 1. Hypothesized Conceptual Model. This model controlled for gender without priori hypotheses.

(Vazire & Funder, 2006), which might worsen self-control difficulties. In the present study, we hypothesized that loneliness would strengthen the links between narcissism, on the one hand, and attention-seeking motives and impulsivity, on the other hand. We additionally examined loneliness as a moderator of direct relations from narcissism to cyberbullying and online prosociality. This study can offer new information on narcissistic responses to self-concept threats (see Lambe et al., 2018 for a review), by addressing whether attention-seeking or impulsivity accounts for these behaviors.

Overview and Hypotheses

This study compared strategic and impulsivity accounts of associations between early adolescents' narcissism, cyberbullying offending, and online prosociality. We proposed three main hypotheses (Figure 1). First, narcissism would positively predict both cyberbullying and online prosociality (Hypotheses 1a–b); and links from narcissism to cyberbullying and online prosocial behaviors would be mediated by attention-seeking (Hypotheses 1c–e) and impulsivity (Hypotheses 1f–h). Second, loneliness would positively predict cyberbullying and online prosocial behaviors, both directly and indirectly via attention-seeking and impulsivity (Hypotheses 2a–d). Third, loneliness would strengthen the associations between narcissism and attention-seeking, impulsivity, cyberbullying, and online prosocial behaviors (Hypotheses 3a–d). Finally, because prior studies have provided inconsistent evidence for gender differences in cyberbullying and online prosocial behaviors (Ferenczi et al., 2017), we controlled for gender without *priori* hypotheses.

Method

Participants

This research recruited participants from a middle school in one of the most economically developed districts in Shenzhen, Guangdong Province. The participants were from 7th to 8th grade, with six classes recruited for each grade. Only those whose

parents signed the consent forms completed the questionnaires. In our sample ($N = 224$), 63.6% of fathers and 58.7% of mothers were college-educated or higher. We excluded 11 participants who reported having no personal social media account. Ultimately, we retained 213 adolescents (57.3% female; $M_{age} = 13.26$, $SD = 0.69$). Most were users of WeChat (88.7%) and QQ (86.9%), the most prevalent social media platforms in China.

Procedure

All research procedures were approved by the Ethics Review Board of Shenzhen University, with approval number 2019048. Data were collected in early autumn of 2019. Informed consent was obtained from participants, parents, and administrators of the participating school. Participants completed questionnaires administered by research assistants during homeroom periods. They were compensated with stationery sets for participating.

Measures

Two bilingual speakers obtained Chinese versions of existing scales using translation/back-translation procedures. Discrepancies were discussed to ensure adherence to the original content. English translations of all items utilized in this study and results of confirmatory factor analysis for each scale (with acceptable factor loadings and model fits) are available in the Supplementary Materials.

Narcissism. Participants' trait narcissism was measured with the ten-item Childhood Narcissism Scale (Thomaes et al., 2008). Responses were given on a four-point scale (1 = *not at all true*; 4 = *completely*), with higher mean scores indicating higher narcissism ($\alpha = .85$).

Loneliness. Participants responded to ten items relating to feelings of loneliness from the Childhood Loneliness Scale (Asher et al., 1984). Participants responded from 1 (*not true at all*) to 5 (*always true*), with higher mean scores indicating higher loneliness ($\alpha = .86$).

Table 1. Means, Standard Deviations, and Bivariate Correlations.

	M	SD	Min	Max	1	2	3	4	5	6
1. Narcissism	2.37	0.59	1.00	4.00	—					
2. Loneliness	1.98	0.76	1.00	4.80	−.17*	—				
3. Attention-seeking	1.80	0.74	1.00	4.00	.25***	.08	—			
4. Impulsivity	1.80	0.60	1.00	4.00	.22**	.09	.51***	—		
5. Cyberbullying	1.21	0.54	1.00	5.00	.25***	.18*	.49***	.51***	—	
6. Prosocial behavior	3.46	0.95	1.00	5.00	.29***	−.19**	.39***	.36***	.27***	—

Note. N = 213.
*p < .050; **p < .010; *** p < .001.

Attention-Seeking on Social Media. Attention-seeking was measured with a five-item scale (Hawk et al., 2019). Participants responded from 1 (*not at all true*) to 4 (*very true*). Higher mean scores indicated higher attention-seeking motives (α = .88).

Impulsivity. Eight items from the Ego Under-Control Scale (Letzring et al., 2005) were adapted to specifically measure participants' social media impulsivity, to make it equivalent and directly comparable to the social media-specific measure of attention-seeking. Participants rated the items using a four-point scale (1 = *disagree very strongly*; 4 = *agree very strongly*), with higher scores indicating greater impulsivity (α = .85).

Cyberbullying Offending. Cyberbullying offending was measured with eight items adapted from three cyberbullying scales (Hinduja & Patchin, 2010; Lam & Li, 2013; Stewart et al., 2014). We sampled items to capture a wide range of perpetrating behaviors across scales while eliminating redundancies between them. The items assessed the frequency with which adolescents engage in cyberbullying perpetration during the past 30 days. Participants responded on a five-point scale (1 = *never*; 3 = *a few times*; 5 = *every day*; α = .93).

Online Prosocial Behaviors. Online prosocial behavior was measured with four items inspired by Wright and Li (2011), measuring the frequency of general prosocial behaviors toward peers via social media platforms. Participants rated the items on a five-point scale (1 = *never*; 3 = *sometimes*; 5 = *most/all the time*; α = .85).

Analytic Strategy

Mean scores for each scale were calculated only if at least 75% of items were completed, and otherwise were recorded as missing (missing rates ≤ 1.4%). Path analysis was conducted using maximum likelihood estimation in Mplus v.8.3 (Muthén & Muthén, 1998–2017) to examine our hypothesized model. All the scores were z-score standardized. Gender was coded as 0 = *female* and 1 = *male*. Missing values were dealt with using full information maximum likelihood (FIML) method. We examined indirect effects via bootstrapping with 10,000 resamples. Determinations of statistical significance were based on whether or not 95% confidence intervals contained zero. Significant interactions were interpreted using simple slopes and conditional indirect effect analysis at ± 1 *SD* of loneliness.

Results

Descriptive Statistics and Correlations

Mean scores, standard deviations, and bivariate correlations of all variables are shown in Table 1. Online prosocial behavior was positively correlated with narcissism, attention-seeking, and impulsivity, and negatively correlated with loneliness. Cyberbullying was positively correlated with all of the predictors.

Path Analysis

The path model with standardized coefficients can be seen in Figure 2. The model was fully saturated. This model explained 40.7% and 26.5% of the variance in cyberbullying offending and online prosocial behaviors, respectively. There were no significant gender differences in any endogenous variables. Attention-seeking and impulsivity were positively correlated (95% CI [.291, .598]), but cyberbullying and online prosocial behavior were not (β = .04, 95% CI [−.025, .115]).

Predicting Cyberbullying and Online Prosocial Behavior from Narcissism. Standardized direct and indirect effects on cyberbullying offending and online prosocial behaviors are shown in Table 2. Narcissism did not directly predict cyberbullying, contrary to Hypothesis 1a, but directly predicted prosocial behavior, supporting Hypothesis 1b. Supporting Hypotheses 1c–e, narcissism positively predicted attention-seeking (95% CI [.147, .460]), which in turn positively predicted cyberbullying and prosocial behavior. Attention-seeking significantly mediated the relations from narcissism to cyberbullying and online prosocial behaviors. Hypotheses 1f–h were not supported, in that narcissism was not significantly associated with impulsivity (β = .19, 95% CI [−.005, .380]).

Predicting Cyberbullying and Online Prosocial Behaviors from Loneliness. Hypotheses 2a–d were all supported. Loneliness was positively associated with attention-seeking (95% CI [.021, .290]), impulsivity (95% CI [.017, .309]), and cyberbullying offending, and negatively associated with prosocial behavior. We observed significant indirect effects from loneliness to cyberbullying offending and prosocial behaviors via both attention-seeking and impulsivity.

Narcissism x Loneliness Interaction. Only Hypothesis 3c was supported, in that the interaction between narcissism and
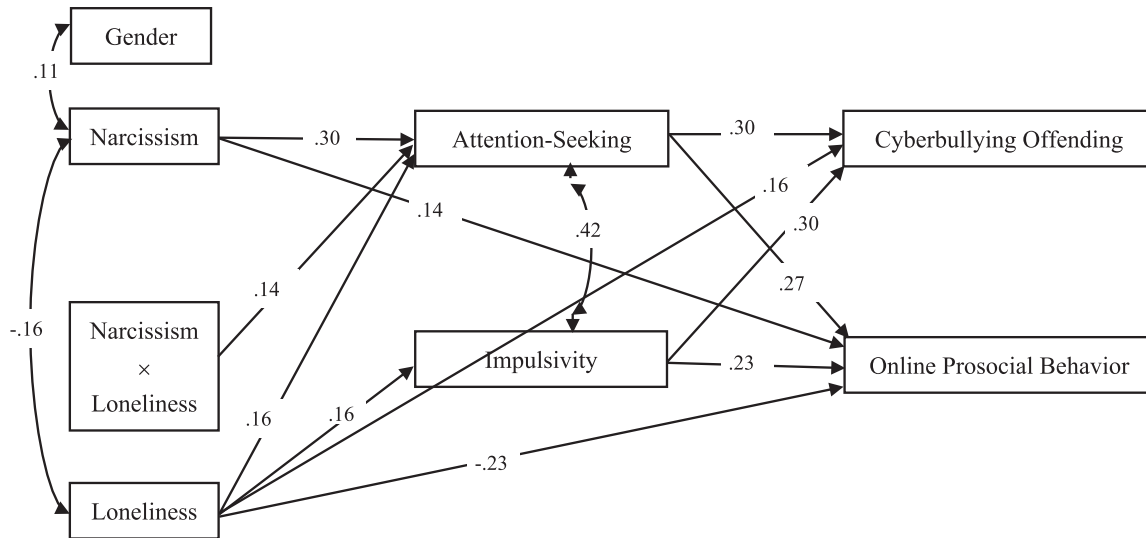
Figure 2. Path Model Examining Narcissism, Attention-Seeking, Impulsivity, Cyberbullying Offending, and Online Prosocial Behavior, Moderated by Loneliness and Controlling for Gender *N*=213. The model was fully saturated. Bootstrap=10,000. This figure only shows significant paths, and their statistical significance is determined using a 95% CI.

Table 2. Direct and Indirect Effects on Cyberbullying Offending and Online Prosocial Behaviors.

Direct and indirect effect	Cyberbullying offending				Online prosocial behaviors			
	β	SE	95% CI		β	SE	95% CI	
			LLCI	ULCI			LLCI	ULCI
Direct effect								
Gender	.148	.097	−.037	.343	.000	.125	−.254	.244
Narcissism	.094	.073	−.040	.245	**.140**	**.067**	**.014**	**.276**
Attention-seeking	**.295**	**.097**	**.124**	**.506**	**.265**	**.074**	**.119**	**.404**
Impulsivity	**.302**	**.099**	**.134**	**.531**	**.231**	**.079**	**.073**	**.378**
Loneliness	**.163**	**.084**	**.005**	**.333**	**−.225**	**.072**	**−.363**	**−.083**
N x L	.124	.108	−.088	.320	−.060	.075	−.198	.095
Indirect effect								
Narcissism → Attention-Seeking →	**.088**	**.043**	**.028**	**.209**	**.079**	**.030**	**.034**	**.153**
Narcissism → Impulsivity →	.057	.032	.011	.144	.044	.027	.005	.117
Loneliness → Attention-Seeking →	**.047**	**.025**	**.011**	**.115**	**.042**	**.022**	**.008**	**.094**
Loneliness → Impulsivity →	**.048**	**.026**	**.012**	**.126**	.037	.022	.006	.097
N x L → Attention-Seeking →	**.043**	**.022**	**.010**	**.100**	**.038**	**.021**	**.003**	**.089**
N x L → Impulsivity →	.053	.033	.004	.140	.040	.025	.003	.106
Conditional effect								
Narcissism → Attention-Seeking →								
at −1 *SD* Loneliness	.045	.043	−.009	.171	.041	.033	−.015	.119
at +1 *SD* Loneliness	**.130**	**.053**	**.049**	**.267**	**.117**	**.040**	**.050**	**.207**

Note. N=213. LLCI=lower limit 95% confidence interval, ULCI=upper limit 95% confidence interval, N x L=Narcissism x Loneliness. Significant effects are in bold.

loneliness predicted attention-seeking (95% CI [.006, .257]) but not impulsivity (β=.174, 95% CI [−.006, .348]). Simple slope analyses at ±1 *SD* of loneliness (Figure 3) showed that narcissism positively predicted attention-seeking when loneliness was high, but not when loneliness was low. Further conditional indirect effect analyses (Table 2) showed that when loneliness was high, attention-seeking significantly mediated the associations from narcissism to cyberbullying and online prosocial behaviors.

Discussion

This study provides a more complete picture of narcissistic adolescents' interpersonal adjustment on social media by examining both online aggression (i.e., cyberbullying) and online prosocial behaviors. Self-regulatory processing theories emphasizing intentionality (Grapsas et al., 2020; Morf & Rhodewalt, 2001) and perspectives emphasizing impulsivity (Vazire & Funder, 2006) offer differing accounts of narcissistic self-promotion.
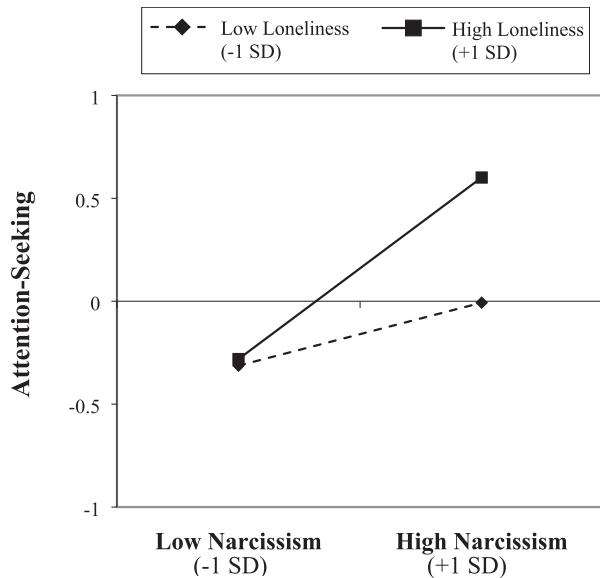
Figure 3. Attention-Seeking at ± 1 *SD* of Loneliness and Narcissism (*N* = 213).

To our knowledge, the present study is the first to directly compare these two accounts in the context of social media behavior, by examining intentional attention-seeking and impulsivity as dual mediators. Supporting self-regulatory processing accounts, the results of this novel comparison suggested that associations between narcissism and both cyberbullying and online prosocial behaviors represent strategic efforts to gain attention and status. Furthermore, the SPIN model (Grapsas et al., 2020) posits that social factors can intensify narcissists' pursuit of status, with self-concept threats likely to activate narcissistic individuals' "rivalry" pathway over an "admiration" pathway. Our findings partially supported this account; while we found stronger associations between adolescent narcissism and attention-seeking in the context of high youth loneliness, we did not find differential patterns for cyberbullying and prosociality. Our findings suggest avenues for how educators and practitioners might counsel adolescents engaging in self-promotional social media activities, and steer these tendencies toward more positive forms of expression.

Accounts of Narcissistic Youth's Cyberbullying and Online Prosocial Behaviors

Generally, our findings supported strategic accounts (Grapsas et al., 2020; Morf & Rhodewalt, 2001) over impulsivity accounts (Vazire & Funder, 2006), in that only attention-seeking mediated the associations that narcissism held with cyberbullying and prosocial behaviors. The present study addresses calls to provide further extensions and replications of the SPIN model (Grapsas et al., 2020) by providing further evidence regarding how social context might predict the rivalry versus admiration pathways.

Many studies have established relations between narcissism and aggressive tendencies (Lambe et al., 2018). The SPIN model (Grapsas et al., 2020) characterizes narcissistic antagonism as a strategic attempt to pursue status. This "rivalry" pathway becomes particularly salient in contexts where narcissists' efforts

to garner positive affirmation have fallen short. Supporting this notion, youth's attention-seeking fully mediated the relation between narcissism and cyberbullying offending in the context of average-to-high loneliness. Narcissistic youth might strategically derogate others through verbal assaults, hurtful memes, or threats on social media with the aim of elevating their status. Similar to prior studies on narcissistic youth's social media behavior (Hawk et al., 2019), this effect was significant even when their social relationships were at the "average" level, relative to peers. During adolescence, youth are prone to believing that dominant behaviors, which often manifest as overt aggression, can deliver social success and display a form of rebelliousness admired in peer culture (Kiefer & Ryan, 2011). Cyberbullying might not only benefit narcissists' short-term popularity among peers but also harm their social standing over time (Leckelt et al., 2015). Adolescence is also a period characterized by higher levels of impulsive, reward-seeking behaviors, especially in the presence of peers (Shulman et al., 2016). The positive correlation between attention-seeking and impulsivity found here suggests some compatibility between the two theoretical accounts; youth might have difficulty considering the long-term negative ramifications of aggressive behaviors that can contribute to more immediate feelings of power, particularly when they are relatively high in both narcissistic traits and loneliness.

The SPIN model also posits that narcissistic status pursuits can manifest as admiration-seeking, self-constructional behaviors when self-esteem needs are being met (Grapsas et al., 2020). Partially supporting this "admiration pathway" notion, attention-seeking partially mediated the association between narcissism and online prosocial behaviors; however, we also found that the positive indirect association from narcissism to prosocial behaviors via attention-seeking was stronger when loneliness was higher. Deviating from the SPIN model's emphasis on psychological fulfillment as a condition for narcissistic prosociality, our study indicates that narcissistic adolescents might also engage in prosocial behaviors in a chronic status-loss situation. Narcissistic youth might find "shallow" social media interactions especially useful for constructing a positive image with loose social ties because some online behaviors like sending a supportive message can deliver social rewards without requiring the time and emotional commitments of face-to-face interactions (Nesi et al., 2018). In this sense, narcissistic adolescents' seemingly other-oriented prosocial behaviors might still be deliberate, self-serving attempts to fulfill their own admiration needs. Future research can explore whether the intentional prosocial actions of low-status narcissistic youth resemble those of high-status adolescents, or alternatively, show more superficial and manipulative characteristics (Konrath et al., 2016). In addition, it is notable that most variance in prosocial behavior remained unexplained. Future research can explore the reasons why narcissistic youth might engage in prosocial behaviors on social media.

Adolescents' loneliness is a social risk factor for interpersonal difficulties (Qualter et al., 2015). Consistent with previous research, loneliness both directly and indirectly predicted more cyberbullying, and directly predicted less prosocial behavior. Interestingly, we also found that loneliness held an indirect positive association with prosocial behaviors via both attention-seeking and impulsivity. This seems to suggest that social media can provide opportunities for lonely adolescents to connect with others and engage in positive social interactions. Educators and

practitioners should acknowledge that social media potentially serves as a comfortable platform for introverted and lonely adolescents to (re)build social status (Nesi et al., 2018) and provide guidance on healthy status-recovery behaviors.

Practical Implications

Our findings suggest avenues for how educators and practitioners might counsel adolescents engaging in problematic social media activities, and steer self-promotional tendencies toward more positive forms of expression. Others have noted that many interventions targeting youth's problematic social media use predominantly emphasize the risks of social media behavior, while overlooking adolescents' psychological needs and expectations of benefits (Hawk et al., 2019). Educators and practitioners should ascertain the rewards adolescents anticipate from their social media behaviors, and help youth explore appropriate interpersonal strategies to achieve their social goals. Narcissistic, lonely adolescents might be especially important targets of related intervention efforts. For example, one objective of current treatments for narcissism is to raise empathy and prosociality (Hepper et al., 2014). This study highlights that practitioners should be vigilant to narcissistic youth's underlying motivations for online helping. Practitioners should encourage other-oriented prosocial actions that can provide long-term, sustainable needs fulfillment, such as encouraging warm and genuine online communication as opposed to self-serving, perfunctory responses.

Strengths, Limitations, and Future Directions

This study holds notable strengths. In contrast to most studies on narcissism and social media targeting late adolescents and emerging adults, we focused on early adolescents, who are just beginning to establish an individual presence on social media and increasingly depend on peers as their primary sources of social support. Furthermore, using measures of attention-seeking and impulsivity tailored specifically to social media behavior allowed for a more direct comparison between two accounts of narcissistic adjustment and in online contexts, which are increasingly relevant to adolescents' interpersonal interactions.

Our study also has certain limitations. First, self-enhancement and social desirability biases might exist in narcissistic adolescents' self-reports (Konrath et al., 2016). Future studies can use content coding of actual social media posts, or behavioral observation in mock online interactions. Second, our model relied on cross-sectional data, which cannot provide evidence of causal processes. For instance, as opposed to predicting cyberbullying from loneliness, adolescents' aggression might prompt greater peer rejection (Qualter et al., 2015). Future research can utilize experimental manipulations of perceived social benefits and/or rejection to observe whether narcissism predicts subsequent antisocial or prosocial responses. In addition, longitudinal designs can provide insights into potential bi-directional relations between online behaviors and social status in both the short- and long-term. Third, this study did not differentiate between public and private social media interactions. The privacy level and perceived presence of online audiences might be important concerns when making decisions about interaction

strategies (Grapsas et al., 2020). Future studies can investigate whether and how narcissistic youth favor aggressive behaviors or prosocial behaviors based on different interaction contexts.

Conclusion

Our study highlights potential personality and social-environmental factors associated with adolescents' aggressive and prosocial online behaviors. Attention-seeking, but not impulsivity, mediated associations between narcissism and both cyberbullying and online prosocial behavior. These results suggest that narcissistic youth's aggressive and prosocial behaviors online might both represent strategic efforts to gain recognition. These associations were stronger in the context of higher loneliness, highlighting status-loss contexts as a potential risk factor for heightened narcissistic attention-seeking. Our findings provide guidance for educators and practitioners working to address adolescents' self-promotional social media activities and suggest that practitioners might attempt to steer such tendencies toward socially desirable forms of online behavior.

ORCID iD

Ying Wang ⓘD https://orcid.org/0000-0003-3524-8674

Supplemental Material

Supplemental material for this article is available online.

References

Asher, S. R., Hymel, S., & Renshaw, P. D. (1984). Loneliness in children. *Child Development*, *55*(4), 1456–1464. https://doi.org/10.2307/1130015

Ferenczi, N., Marshall, T. C., & Bejanyan, K. (2017). Are sex differences in antisocial and prosocial Facebook use explained by narcissism and relational self-construal? *Computers in Human Behavior*, *77*, 25–31. https://doi.org/10.1016/j.chb.2017.08.033

Grapsas, S., Brummelman, E., Back, M. D., & Denissen, J. J. A. (2020). The "why" and "how" of narcissism: A process model of narcissistic status pursuit. *Perspectives on Psychological Science*, *15*(1), 150–172. https://doi.org/10.1177/1745691619873350

Hawk, S. T., ter Bogt, T. F. M., van den Eijnden, R. J. J. M., & Nelemans, S. A. (2015). Too little power, too much information! Power, narcissism, and adolescents' disclosures on social networking sites. *Computers in Human Behavior*, *52*, 72–80. https://doi.org/10.1016/j.chb.2015.05.014

Hawk, S. T., van den Eijnden, R. J. J. M., van Lissa, C. J., & ter Bogt, T. F. M. (2019). Narcissistic adolescents' attention-seeking following social rejection: Links with social media disclosure, problematic social media use, and smartphone stress. *Computers in Human Behavior*, *92*, 65–75. https://doi.org/10.1016/j.chb.2018.10.032

Hepper, E. G., Hart, C. M., & Sedikides, C. (2014). Moving narcissus: Can narcissists be empathic? *Personality and Social Psychology Bulletin*, *40*(9), 1079–1091. https://doi.org/10.1177/0146167214535812

Hinduja, S., & Patchin, J. W. (2010). Bullying, cyberbullying, and suicide. *Archives of Suicide Research*, *14*(3), 206–221. https://doi.org/10.1080/13811118.2010.494133

Johnson, S. L., Leedom, L. J., & Muhtadie, L. (2012). The dominance behavioral system and psychopathology: Evidence from self-report, observational, and biological studies. *Psychological Bulletin*, *138*(4), 692–743. https://doi.org/10.1037/a0027503

Kiefer, S. M., & Ryan, A. M. (2011). Students' perceptions of characteristics associated with social success: Changes during early adolescence. *Journal of Applied Developmental Psychology*, *32*(4), 218–226. https://doi.org/10.1016/j.appdev.2011.05.002

Konrath, S., Ho, M.-H., & Zarins, S. (2016). The strategic helper: Narcissism and prosocial motives and behaviors. *Current Psychology*, *35*(2), 182–194. https://doi.org/10.1007/s12144-016-9417-3

Lam, L. T., & Li, Y. (2013). The validation of the E-Victimisation Scale (E-VS) and the E-Bullying Scale (E-BS) for adolescents. *Computers in Human Behavior*, *29*(1), 3–7. https://doi.org/10.1016/j.chb.2012.06.021

Lambe, S., Hamilton-Giachritsis, C., Garner, E., & Walker, J. (2018). The role of narcissism in aggression and violence: A systematic review. *Trauma Violence Abuse*, *19*(2), 209–230. https://doi.org/10.1177/1524838016650190

Leckelt, M., Kufner, A. C., Nestler, S., & Back, M. D. (2015). Behavioral processes underlying the decline of narcissists' popularity over time. *Journal of Personality and Social Psychology*, *109*(5), 856–871. https://doi.org/10.1037/pspp0000057

Letzring, T. D., Block, J., & Funder, D. C. (2005). Ego-control and ego-resiliency: Generalization of self-report scales based on personality descriptions from acquaintances, clinicians, and the self. *Journal of Research in Personality*, *39*(4), 395–422. https://doi.org/10.1016/j.jrp.2004.06.003

Malesza, M., & Kalinowski, K. (2019). Willingness to share, impulsivity and the Dark Triad traits. *Current Psychology*, *40*(8), 3888–3896. https://doi.org/10.1007/s12144-019-00351-5

March, E., & Marrington, J. Z. (2023). Antisocial and prosocial online behaviour: Exploring the roles of the Dark and Light Triads. *Current Psychology*, *42*, 1390–1393. https://doi.org/10.1007/s12144-021-01552-7

Mazinani, Z., Shakiba, S., Pourshahbaz, A., & Vahedi, M. (2021). Five Factor Narcissism and threat to fundamental needs following social exclusion engendered by the Cyberball game. *Personality and Individual Differences*, *168*, Article 110279. https://doi.org/10.1016/j.paid.2020.110279

Morf, C. C., & Rhodewalt, F. (2001). Unraveling the paradoxes of narcissism: A dynamic self-regulatory processing model. *Psychological Inquiry*, *12*(4), 177–196. https://doi.org/10.1207/s15327965pli1204_1

Muthén, L. K., & Muthén, B. O. (1998–2017). *Mplus user's guide* (8th ed.).

Nesi, J., Choukas-Bradley, S., & Prinstein, M. J. (2018). Transformation of adolescent peer relations in the social media context: Part 1-A theoretical framework and application to dyadic peer relationships. *Clinical Child and Family Psychology Review*, *21*(3), 267–294. https://doi.org/10.1007/s10567-018-0261-x

Nesi, J., Rothenberg, W. A., Bettis, A. H., Massing-Schaffer, M., Fox, K. A., Telzer, E. H., Lindquist, K. A., & Prinstein, M. J. (2022). Emotional responses to social media experiences among adolescents: Longitudinal associations with depressive symptoms. *Journal of Clinical Child & Adolescent Psychology*, *51*(6), 907–922. https://doi.org/10.1080/15374416.2021.1955370

Qualter, P., Vanhalst, J., Harris, R., Van Roekel, E., Lodder, G., Bangee, M., Maes, M., & Verhagen, M. (2015). Loneliness across the life span. *Perspectives on Psychological Science*, *10*(2), 250–264. https://doi.org/10.1177/1745691615568999

Ren, D., Wesselmann, E. D., & Williams, K. D. (2018). Hurt people hurt people: Ostracism and aggression. *Current Opinion in Psychology*, *19*, 34–38. https://doi.org/10.1016/j.copsyc.2017.03.026

Rose, P. (2007). Mediators of the association between narcissism and compulsive buying: The roles of materialism and impulse control. *Psychology of Addictive Behaviors*, *21*(4), 576–581. https://doi.org/10.1037/0893-164X.21.4.576

Shulman, E. P., Smith, A. R., Silva, K., Icenogle, G., Duell, N., Chein, J., & Steinberg, L. (2016). The dual systems model: Review, reappraisal, and reaffirmation. *Developmental Cognitive Neuroscience*, *17*, 103–117. https://doi.org/10.1016/j.dcn.2015.12.010

Stewart, R. W., Drescher, C. F., Maack, D. J., Ebesutani, C., & Young, J. (2014). The development and psychometric investigation of the Cyberbullying Scale. *Journal of Interpersonal Violence*, *29*(12), 2218–2238. https://doi.org/10.1177/0886260513517552

Tanrikulu, I., & Erdur-Baker, O. (2021). Motives behind cyberbullying perpetration: A test of uses and gratifications theory. *Journal of Interpersonal Violence*, *36*(13–14), NP6699–NP6724. https://doi.org/10.1177/0886260518819882

Thomaes, S., Stegge, H., Bushman, B. J., Olthof, T., & Denissen, J. (2008). Development and validation of the childhood narcissism scale. *Journal of Personality Assessment*, *90*(4), 382–391. https://doi.org/10.1080/00223890802108162

Vazire, S., & Funder, D. C. (2006). Impulsivity and the self-defeating behavior of narcissists. *Personality and Social Psychology Review*, *10*(2), 154–165. https://doi.org/10.1207/s15327957pspr1002_4

Wright, M. F., & Li, Y. (2011). The associations between young adults' face-to-face prosocial behaviors and their online prosocial behaviors. *Computers in Human Behavior*, *27*(5), 1959–1962. https://doi.org/10.1016/j.chb.2011.04.019