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Investigating the Link between Narcissism and Problem Behaviors in Adolescence

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Abstract

Previous research has shown that narcissistic traits such as exploitativeness, exhibitionism, and entitlement are associated with delinquency and aggression in childhood and adolescence. However, there is a paucity of longitudinal research examining these associations, and virtually no research examining other problem behaviors such as drug use and early sexual behavior. In this study, we extended previous research by testing whether two facets of narcissism, exploitativeness and superiority, assessed at age 14, predicted problem behaviors at age 16, while controlling for problem behaviors at age 14. We applied two-part count models to data from a longitudinal study of 674 Mexican-origin adolescents living in the United States followed over a two-year period from age 14 to 16. Adolescents with higher exploitativeness levels at age 14 were more likely to engage in drug use, commit delinquent acts, have sexual intercourse, and exhibit symptoms of conduct disorder at age 16, compared to adolescents with lower exploitativeness levels. Superiority had almost no associations with problem behaviors. Thus, exploitativeness may be one personality risk factor that underlies the development of multiple forms of problem behaviors in adolescence.

Keywords

narcissism; exploitativeness; superiority; problem behaviors; adolescence

Narcissism is a multi-faceted trait that consists of a wide range of characteristics such as feelings of superiority, a sense of grandiosity, exhibitionism, exploitative behaviors in the interpersonal domain, feelings of entitlement, and a lack of empathy (Cain, Pincus, & Ansell, 2008). Recent conceptualizations of narcissism, such as the Narcissism Spectrum Model (Krizan & Herlache, 2018), define a sense of entitled self-importance as the core of the construct, which expresses itself as grandiosity (e.g., overconfidence, self-enhancement, “engagement in exploitative and self-serving relationships focused on personal pleasure” [p. 12; Krizan & Herlache, 2018]) and/or vulnerability (e.g., inferiority, low self-esteem, distrust of others’ intentions). Our study focuses on two facets that are part of the grandiosity dimension of the Narcissism Spectrum Model, namely superiority and exploitativeness. In

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adulthood, some facets of narcissism such as superiority are known to have positive effects on adjustment and well-being (Rhodewalt & Morf, 1995; Sedikides, Rudich, Gregg, Kumashiro, & Rusbult, 2004; Trzesniewski, Donnellan, & Robins, 2008). Yet, at the same time, other facets of narcissism such as exploitativeness increase risk for aggression and other self-defeating, problematic behaviors (Miller et al., 2009; Muris, Merckelbach, Otgaar, & Meijer, 2017; Vazire & Funder, 2006). However, little is known about how narcissism is related to problem behaviors in adolescence, a time when many problem behaviors first emerge and a sense of vulnerability, grandiosity, and manipulativeness becomes increasingly widespread (Carlson & Gjerde, 2009; Hill & Lapsley, 2011; Hill & Roberts, 2012).

The present research investigates developmental links between narcissism and problem behaviors. To provide a comprehensive portrait of the consequences of narcissism in adolescence, we explored a wide range of problem behaviors, including delinquency, drug use, sexual behavior, and two psychiatric disorders considered part of the externalizing spectrum [Oppositional Defiant Disorder (ODD) and Conduct Disorder (CD)].

The Impact of Narcissism on Problem Behaviors in Adolescence

From a theoretical perspective, narcissism, and in particular exploitativeness, entails a callous disregard for other people, a belief that others exist only to serve the grandiose needs of the self, and the view that conventional societal rules and norms do not apply. Clearly, such an orientation toward people and society could engender a broad range of antisocial behaviors. Moreover, because people high on narcissism are impulsive and reward oriented (Campbell, Bush, Brunell, & Shelton, 2005; Vazire & Funder, 2006) and continuously seek external self-affirmation (Morf & Rhodewalt, 2001), they may engage in problem behaviors such as drug use, delinquency, and sexual conquests that provide immediate self-gratification for adolescents, as well as more long-term rewards in terms of attention and admiration from their peers.

Delinquency/conduct problems/aggression

Research has shown that youth with high levels on narcissistic traits such as exploitativeness, entitlement, and exhibitionism are at increased risk for conduct problems and delinquency, both concurrently and longitudinally (Barry, Frick, Adler, & Grafeman, 2007; Barry, Frick, & Killian, 2003; Barry, Grafeman, Adler, & Pickard, 2007; Fanti, 2013; Lau, Marsee, Kunimatsu, & Fassnacht, 2011). For example, Barry and colleagues formed a “maladaptive narcissism” composite made up of exploitativeness, entitlement, and exhibitionism. They showed that this maladaptive composite was significantly related to conduct problems ($r = .32$), whereas an “adaptive narcissism” composite of authority and self-sufficiency was not significantly related to conduct problems (Barry et al., 2003). In another study of nine- to 15-year-olds, they showed that the maladaptive narcissism composite predicted the sum of delinquent acts the youth engaged in two years later (Barry, Frick, et al., 2007). Moreover, the narcissism facets of exploitativeness, exhibitionism, and entitlement are related to many forms of aggression among adolescents, including overt and relational aggression (Lau & Marsee, 2013; Lau et al., 2011), proactive and reactive aggression (Rasmussen, 2016; Washburn, McMahon, King, Reinecke, & Silver, 2004), and

self- (but not peer) reported aggression (Kauten & Barry, 2014). Taken together, previous research suggests that youth with higher levels of exploitativeness, exhibitionism, and entitlement are more likely to engage in delinquent, aggressive, defiant, and antisocial behaviors.

Drug use

Very little research has examined the association between narcissism and drug use, especially prior to adulthood. The few extant studies suggest that narcissism is associated with substance use dependency disorders in adolescents (Carter, Johnson, Exline, Post, & Pagano, 2012), and drug use in undergraduate students (MacLaren & Best, 2013).

Sexual behavior

To our knowledge, no research has examined the relation between narcissism and sexual behavior in adolescence.

The Present Study

The present study used data from a large sample of Mexican-origin youth to test the prospective effect of narcissism on delinquency, drug use, early sexual behavior, and psychiatric problems (ODD and CD symptoms). Based on previous empirical studies linking the narcissism facets of exploitativeness, exhibitionism, and entitlement with problem behaviors, we predicted that narcissistic exploitativeness at age 14 would be associated with higher levels of adolescent problem behaviors at age 16, even after controlling for problem behaviors at age 14. Because there is no research linking narcissistic superiority with problem behaviors, we did not expect superiority to be related to problem behaviors.

The current study extends previous research in several substantive and methodological ways. First, there is a dire need for research that moves beyond cross-sectional studies and examines the temporal relations of narcissism using longitudinal data. Second, although there is an increasing amount of research on narcissism in adulthood, there is a paucity of longitudinal research examining narcissism in adolescence. Third, although several studies have examined composites of narcissistic traits in relation to problem behaviors, very few studies have investigated narcissistic superiority and narcissistic exploitativeness in particular. Fourth, we examine a wide range of problem behaviors (i.e., delinquency, symptoms of ODD, symptoms of CD, drug use, and sexual behavior) that are known to become increasingly prevalent in adolescence (Moffitt, 1993). Fifth, whereas most previous research relied exclusively on self-report data, we assessed problem behaviors using multi-method data, including child-reports, parent reports, and psychiatric interview data. The use of multi-method data decreases the likelihood of inflated effect sizes due to shared method variance. Finally, whereas most previous research on narcissism and problem behaviors has used predominantly Caucasian samples, the present study focuses on an underrepresented and understudied ethnic minority group, Mexican-origin youth.

Method

Sample

Data came from the California Families Project, an ongoing longitudinal study of 674 Mexican-origin children (50% female) and their parents who are living in the United States. The California Families Project was granted approval by the University of California, Davis Institutional Review Board (Protocol # 217484–21). The families were randomly selected from student rosters provided by two school districts in Northern California, with the following exclusion criteria: the focal child had to be in the 5th grade, of Mexican origin, and living with his or her biological mother. Of the eligible families, 73% agreed to participate. At the first assessment in 2006, the children were 10.8 (*SD* = .61) years of age on average. Trained interviewers collected the data in the participants' home. The interview language was either English or Spanish, depending on the preference of the participant.

In the present study, we analyzed data from the age 14 and 16 assessments because that is when both narcissism and problem behaviors were assessed. Relative to the original sample of 674, the retention rate was 90% at both the age 14 and the age 16 assessments. Attrition analyses were conducted to test whether families who participated in the age 16 assessment differed significantly from non-participating families. No significant differences were found for child gender, parent education, and family income at age 10, or for superiority, exploitativenes, delinquency, ODD, CD, and drug use at age 14 (all *p*s > .05). Furthermore, no significant differences were found between continuers and drop-outs for drug use, ODD, and CD at age 10 and child-reported delinquency at age 12.

Measures

Table 1 shows descriptive statistics for all measures, and Table 2 shows intercorrelations among the problem behaviors at age 16.

Narcissism—Narcissism was assessed using the Narcissistic Personality Questionnaire for Children – Revised (NPQC-R; Ang & Raine, 2009), a self-report questionnaire designed for children and adolescents. The NPQC-R measures two facets of narcissism, superiority and exploitativeness. Superiority captures the grandiose aspects of narcissism such as feelings of superiority, vanity, and inflated self-views. A sample item on the superiority scale is "I am going to be a great person." Exploitativeness captures the interpersonally toxic aspects of narcissism including interpersonal exploitativeness, feelings of entitlement, and manipulativeness. A sample item on the exploitativeness scale is "I am good at getting people to do things my way." Participants responded on a five-point rating scale ranging from *not at all like me* (1) to *completely like me* (5). At age 14, the omega total reliability coefficients for scores on the two facets were 0.79 for superiority and 0.76 for exploitativeness. The latent correlation between superiority and exploitativeness was 0.34.

Delinquency—To assess delinquency, we used a scale from the National Longitudinal Study of Adolescent Health (ADD Health). It contains 15 items that all start with, "In the past 12 months, how often did you…" The items describe behaviors such as "deliberately damage property that didn't belong to you", "get into a serious physical fight", or "steal

something worth more than $50". Children rated the frequency of these behaviors on a four-point scale with the response options *never*, *1 or 2 times*, *3 or 4 times*, and *5 or more times*. Parents completed the same 15-item measure but the questions were re-worded in the third person (e.g., "In the past 12 months, how often did [CHILD'S NAME] get into a serious physical fight?"). For both child- and parent-reports, we used the sum score across all items in the analyses. Sum scores of mother- and father-reported delinquency were averaged to obtain an overall index of parent-reported child delinquency.

Drug use—A count score of seven items from the Alcohol, Tobacco, and Other Drug Use Scale, which contained items adapted from the National Youth Survey (Elliot, Huizinga, & Ageton, 1985), was used to indicate participants' experiences with a number of substances. Each of the seven items asked "Have you ever used or tried…" a particular substance including beer (more than just a few sips), wine (more than just a few sips), hard liquor, cigarettes, marijuana, inhalants, and any other illegal drug (such as cocaine, heroin). Drug use was assessed via child-report at age 14 and age 16.

Sexual behavior—Two questions assessing sexual behavior were analyzed: "Have you had sexual intercourse during the past 12 months?" and "How many people have you had sexual intercourse with during the past 12 months?" Participants were only asked the second question if they had responded "yes" to the first question. The responses to both items were combined into one variable with 0 representing no sexual intercourse and positive integers representing the number of sexual partners. This variable was available as child-report at age 16. At age 16, 70% of the participants reported not having had sexual intercourse during the past 12 months, 18% reported one sexual partner, 5% two sexual partners, 3% three sexual partners, 1% four sexual partners, and 2% five or more sexual partners.

Symptoms of conduct disorder and oppositional defiant disorder—The Diagnostic Interview Schedule for Children (DISC-IV) is a structured diagnostic interview developed by the National Institute on Mental Health to assess child and adolescent Axis 1 diagnoses (Shaffer, Fisher, Lucas, Dulcan, & Schwab-Stone, 2000). Studies indicate good reliability and validity of both the English and Spanish version (Bravo et al., 2001). In the present study, we analyzed responses to symptoms of CD and ODD, both disorders from Module E "Disruptive". Children or adolescents with CD display a pattern of aggressive, violent, and disruptive behaviors. Symptoms of CD include behaviors such as shoplifting, skipping school/work, and starting a fire without permission. ODD is characterized by defiant or argumentative behavior and vindictiveness toward people in authority. Symptoms of ODD include behaviors such as doing things just to annoy people/make them mad and doing things on purpose that caretakers said not to do. Youth responded "yes" or "no" to questions about each symptom. We used a composite score of the symptom count for the past year for each disorder in our analyses. In addition, we computed symptom counts for the emotion dysregulation and defiance facets of ODD. CD and ODD data were available at age 14 and 16.

Analyses

Our analyses focused on longitudinal relations among narcissism and adolescent problem behaviors. We estimated a separate model for each problem behavior. Since the problem behaviors were count data (e.g., number of substances tried, number of symptoms of CD)[1], we applied models that specifically take the structure of count data into account. A number of models have been developed for count data, including Poisson regression, the negative binomial model, zero-inflated models, and two-part models (Cameron & Trivedi, 2013). Two-part models are conceptually the most appropriate for our data, which show strongly skewed distributions with a large amount of zeros (see barplots for the problem behaviors at age 16 in supplemental Figure S1). Two-part models divide the count data into a binary part and a continuous part. The binary part predicts having a value other than zero vs. having a value of zero. For people with non-zero values, the continuous part predicts the amount. For example, with drug use, the binary part would predict having tried any substance vs. none. For adolescents who tried at least one substance, the continuous part would predict the number of substances.

To test whether exploitativeness predicted adolescent problem behaviors, we modeled exploitativeness at age 14 and the respective problem behavior at age 16 with exploitativeness predicting the problem behavior (see Figure 1 for the basic structure of the model). Importantly, our model also includes a path linking problem behavior at age 14 with problem behavior at age 16 to control for prior levels on the problem behavior. Specifically, the binary part of the problem behavior at age 14 predicted the binary part of the problem behavior at age 16, and respectively for the continuous parts. In addition, the problem behavior at age 14 (both parts) was correlated with exploitativeness at age 14. Therefore, the influence of exploitativeness on problem behaviors at age 16 was over and above their concurrent relation at age 14. We conducted the same analysis for superiority at age 14 and overall narcissism at age 14 predicting problem behaviors at age 16. Adolescent problem behaviors were treated as observed variables in the models whereas superiority and exploitativeness were modeled as latent variables. Overall narcissism was modeled as a latent variable by using all superiority and exploitativeness items.

All analyses were conducted in Mplus (Version 7.4; Muthén & Muthén, 1998-2017) using maximum likelihood estimation. We dealt with missing data by using full information maximum likelihood estimation to fit models directly to the raw data (Schafer & Graham, 2002). Model fit indices are not available for models with count data. To confirm that two-part models were adequate to describe the data, we compared the relative model fit between a Poisson model, a negative binomial model, and a two-part model for each problem behavior using Akaike's Information Criterion (AIC; Akaike, 1973) and the Bayesian Information Criterion (BIC; Schwarz, 1978). For all analyses reported below, the two-part models provided the best fit to the data (see supplemental Tables S1, S2, and S3), and thus we report results using these models.

[1]Delinquency was assessed using a rating scale and therefore technically does not constitute count data. Nevertheless, the distribution of the sum scores was very similar to count data (most adolescents responded "never" on all items and diminishing numbers of adolescents reported more delinquent acts, see Figure S1). Thus, we think it is justified to model and interpret these data like count data.

Results

Stability of Adolescent Problem Behaviors

Drug use at age 14 correlated strongly with drug use at age 16 ($r = 0.63$), although the stability may be overestimated because the age 14 and 16 responses were not independent (e.g., if someone had ever tried liquor at age 14, they had also done so at age 16). The stabilities of child-reported delinquency ($r = 0.39$) and parent-reported delinquency ($r = 0.43$) were both moderate in size. The symptom counts for CD and ODD showed moderate stability from age 14 to age 16 ($r = 0.44$ and $r = 0.46$, respectively)[2].

Does Narcissistic Exploitativeness Predict Adolescent Problem Behaviors?

For most problem behaviors, exploitativeness predicted the binary part of the behavior, representing whether or not the behavior had occurred, but not the continuous part, representing the amount of the behavior (see Table 3). For example, the regression coefficient for exploitativeness at age 14 predicting the binary part of drug use at age 16 was 0.40 ($p = .001$; bootstrapped 95% CI = [0.14, 0.64]). Thus, the odds of having tried any substance vs. none were 1.49 times higher for adolescents with a trait level of 1 on exploitativeness (1 SD above the mean) compared with adolescents with a trait level of 0 on exploitativeness (the mean). In contrast, the regression coefficient for predicting the amount of drug use beyond having tried at least one substance was not significant ($b = 0.04$, $p = .389$). Similar results were found for child-reported and parent-reported delinquency, number of sexual partners, and symptoms of CD with odds ratios for the binary part ranging from 1.35 (parent-reported delinquency) to 1.62 (number of sexual partners)[3]. Thus, adolescents with higher exploitativeness levels were more likely to engage in drug use and delinquent acts, have sexual intercourse, and exhibit symptoms of conduct disorder than adolescents with lower exploitativeness levels. Exploitativeness did not significantly predict symptoms of ODD, although the effects were in the same direction as the other measures of problem behaviors. A post-hoc exploratory analysis of the ODD facets emotion dysregulation and defiance showed that exploitativeness at age 14 predicted symptoms of defiance at age 16 ($b = 0.12$, bootstrapped 95% CI = [0.02, 0.21], $p = .017$), but not symptoms of emotion dysregulation.

Our first hypothesis was therefore largely supported by the findings. In addition, as would be expected, previous levels of a behavior were significantly related to the behavior at age 16. This was the case for both the binary part of the model (the occurrence) as well as for the continuous part of the model (the amount). In sum, for most problem behaviors, exploitativeness predicted whether or not adolescents showed the behavior, but not the amount of the behavior beyond the threshold of having shown it.

[2]The stability of exploitativeness and superiority from age 14 to age 16 was moderate to strong with average stability coefficients of 0.46 for exploitativeness and 0.61 for superiority (see Wetzel & Robins, 2016).

[3]Exploitativeness also predicted the binary part of a composite across child-, mother-, and father-reported delinquency ($b = 0.39$, $p = .001$).

Does Narcissistic Superiority Predict Adolescent Problem Behaviors?

The only significant effect in the analysis of narcissistic superiority predicting adolescent problem behaviors was found for superiority at age 14 predicting the binary part of child-reported delinquency at age 16 ($b = –0.24$, $p = 0.023$). Thus, adolescents with higher levels of superiority at age 14 were less likely to report delinquent acts at age 16 than adolescents with lower levels of superiority at age 14. However, this effect did not replicate for parent-reported delinquency (see Table 4)[4].

Does Overall Narcissism Predict Adolescent Problem Behaviors?

Overall narcissism at age 14 did not predict any of the problem behaviors at age 16 (see Table S6).

Discussion

The present study investigated the associations between narcissism and adolescent problem behaviors using multi-method data from a large longitudinal study of Mexican-origin children and their parents. The findings provide evidence for a developmental link between adolescent exploitativeness and multiple forms of problem behaviors, including drug use, delinquency, CD symptoms, and risky sexual behavior. Below we discuss the findings and their theoretical and practical implications in more detail.

Narcissistic Exploitativeness is Associated with a Wide Range of Problem Behaviors

We found that exploitative tendencies at age 14 were associated with the occurrence of multiple forms of problem behaviors at age 16. Specifically, adolescents higher on exploitativeness at age 14 were more likely to engage in delinquency (child- and parent-report) and display symptoms of conduct disorder at age 16. These findings replicate previous concurrent and longitudinal research on the association between narcissism facets, such as exploitativeness, exhibitionism, and entitlement, and delinquency/conduct problems (Barry, Frick, et al., 2007; Barry et al., 2003; Barry, Grafeman, et al., 2007; Baskin-Sommers, Waller, Fish, & Hyde, 2015; Fanti, 2013; Frick, Ray, Thornton, & Kahn, 2014; Lau et al., 2011; Longman, Hawes, & Kohlhoff, 2016). For example, in a longitudinal study, Barry, Frick, et al. (2007) found that their maladaptive narcissism composite of exploitativeness, exhibitionism, and entitlement predicted delinquency two years later in a sample of 98 nine- to 15-year-olds. Although their composite included exhibitionism and entitlement in addition to exploitativeness, the items on the exploitativeness subscale in the NPQC-R also contain some content from these other two facets (e.g., exhibitionism: “I would do almost anything if you dared me.”; entitlement: “If I ruled the world, it would be a better place.”), making our results at least partially comparable to theirs. Although adolescent exploitativeness at age 14 was not related to overall ODD symptoms at age 16, it was related to symptoms of the defiance facet of ODD. The two facets of ODD differ conceptually (Herzhoff & Tackett, 2016) and also show distinct developmental trajectories during adolescence (Atherton, Ferrer, & Robins, 2018; Leadbeater & Homel, 2015). The defiance facet captures oppositionality as characterized by arguing/talking back to

[4]Superiority also did not predict a composite across child-, mother-, and father-reported delinquency (binary part: $b = –0.16$, $p = .122$).

caretakers, doing things on purpose that caretakers said not to do, and doing mean things to people on purpose. In contrast, the emotion dysregulation facet mainly captures irritability and includes symptoms such as losing one's temper or being grouchy/easily annoyed. One possible reason for our finding that exploitativeness was related to defiance, but not to overall ODD or emotion dysregulation, is that narcissistic exploitativeness in the NPQC-R is mainly assessed with behavioral items (e.g., I am good at getting people to do things my way.; When I am supposed to be punished, I can usually talk my way out of it.) and has few items that tap into emotional reactions, such as feeling irritable about not getting one's way. Future research should investigate whether other narcissism facets, such as the vulnerability dimension of the Narcissism Spectrum Model(Krizan & Herlache, 2018), are related to the emotion dysregulation facet of ODD.

We also found that adolescent exploitativeness at age 14 was related to drug use at age 16. Our study is one of the first to show this association with the exception of one previous study that showed that narcissism is associated with substance use dependency disorders among adolescents (Carter et al., 2012). Thus, our findings provide some initial evidence that exploitative tendencies may serve as a risk factor for drug use in adolescence.

Last, our results showed that adolescent exploitativeness at age 14 prospectively predicted sexual behavior at age 16, which provides initial evidence for an association between narcissistic tendencies and sexual behavior in adolescence. To our knowledge, no studies have examined the association between narcissistic tendencies and sexual behavior in adolescence. These findings suggest that both behavioral and affective features of narcissistic exploitativeness may influence the occurrence of early sexual behavior among youth.

In sum, exploitativeness may be one personality risk factor that underlies the development of multiple forms of problem behaviors in adolescence, suggesting evidence for multifinality (Cicchetti & Rogosch, 2002). In other words, exploitative adolescents may engage in a wide range of problem behaviors, such as being delinquent, under the influence of drugs, and sexually active because they provide immediate, short-term rewards and enhance feelings of power over others. We analyzed these relations in a Mexican-origin sample and would not expect the associations between exploitativeness and problem behaviors to differ across ethnic groups because, from a theoretical perspective, these associations should be part of a general developmental process; and from an empirical perspective, similar findings for delinquency/conduct problems have been reported for other ethnic groups such as White, non-Latino and African American youth (Barry, Frick, et al., 2007; Barry et al., 2003).

Narcissistic Superiority and Overall Narcissism Are not Associated with Problem Behaviors

As expected, superiority was not related to most of the problem behaviors we investigated with the exception of a negative association with child-reported delinquency. Future research should investigate whether superiority is related to positive outcomes and behaviors in adolescence, as has been shown for adulthood (e.g., Rhodewalt & Morf, 1995). The results for overall narcissism mirrored those for superiority in that overall narcissism did not predict any of the problem behaviors. One possible reason for this is that the superiority indicators

showed higher factor loadings on overall narcissism than the exploitativeness indicators. Thus, overall narcissism was more strongly influenced by superiority than exploitativeness.

Limitations

The present study has several limitations that merit attention. First, as noted above, we are attempting to predict problem behaviors that are relatively infrequent at age 16. It is possible that the influence of exploitativeness on the *amount* of problem behaviors (versus the occurrence) would be more evident later in development. Future research should investigate these developmental links later in adolescence or young adulthood when these behaviors become more common. Second, our data do not allow any causal interpretations. It is possible that third variables (e.g., self-esteem, impulsivity) not investigated in the present study are responsible for the associations we found. Third, we focused our investigation on aspects of grandiose narcissism because we did not have measures of vulnerable narcissism. Future research would benefit from considering how vulnerable narcissism relates to adolescent problem behaviors. It is conceivable that vulnerable narcissism, which is characterized by self-esteem fluctuations and the devaluation of others, might show similar relations to problem behaviors in adolescence as exploitativeness.

Conclusion

The current study provides evidence for longitudinal associations between adolescent exploitativeness and problem behaviors including delinquency, drug use, symptoms of conduct disorder, and sexual behavior. Exploitativeness may be one personality risk factor that underlies the development of multiple forms of problem behaviors in adolescence.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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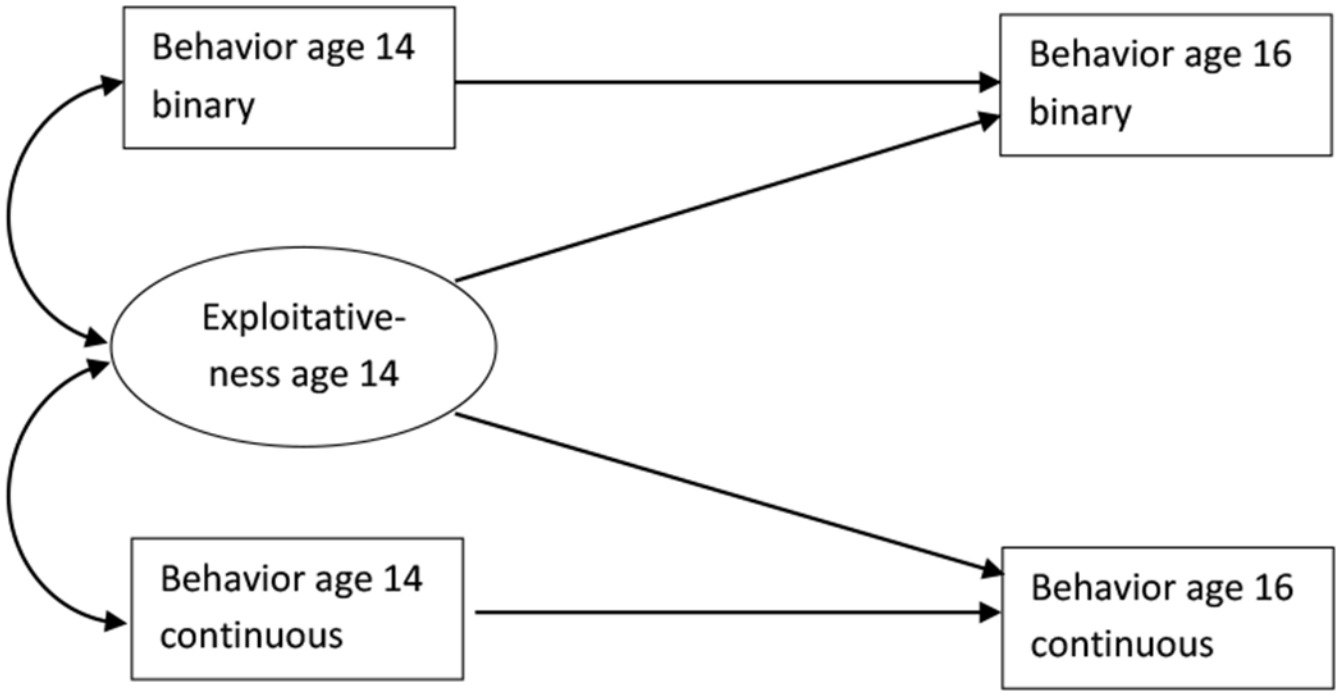

Figure 1.
Two-part model with exploitativenss and a problem behavior. The measurement model for exploitativeness at age 14 is not shown. The same model was run for superiority and overall narcissism.

Table 1:

Descriptive Statistics for all Study Variables

		Age 14			
Variable	**Report**	***M* (*SD*)**			
Superiority	Child	3.35 (0.72)			
Exploitativeness	Child	2.42 (0.72)			
Overall narcissism	Child	2.88 (0.57)			
		Age 14		**Age 16**	
Problem behaviors		***M* (*SD*)**	***Md***	***M* (*SD*)**	***Md***
Drug use	Child	0.84 (1.38)	0	1.47 (1.75)	1
Delinquency	Child	1.73 (3.41)	0	1.61 (2.78)	1
	Parents	0.50 (1.13)	0	0.52 (1.17)	0
# of sexual partners	Child	-	-	0.54 (1.06)	0
Conduct disorder	Child	1.04 (1.68)	0	1.35 (1.87)	0
Oppositional defiant disorder	Child	2.29 (2.62)	1	1.56 (2.09)	1

Note. Superiority and exploitativeness were assessed on a scale from 1 to 5; adolescent problem behaviors were assessed as count variables.

Table 2:

Intercorrelations among Problem Behaviors at Age 16

	Delinquency child-report	Delinquency parent-report	Sexual partners	Conduct disorder	Oppositional defiant disorder
Drug use	***.45***	***.22***	***.38***	***.45***	***.22***
Delinquency (child-report)		***.37***	***.36***	***.44***	***.28***
Delinquency (parent-report)			***.21***	***.19***	.06
# of sexual partners				***.22***	***.09***
Conduct disorder					***.44***

Note. Correlation coefficients significant at $\alpha = .05$ are depicted in bold and italics.

Table 3:

Unstandardized Regression Coefficients (e^b) from Two-part Models of Exploitativeness Predicting Adolescent Problem Behaviors

	Binary part			Continuous part		
Behavior	**threshold**	**beh14 → beh16**	**exp14 → beh16**	**Intercept**	**beh14 → beh16**	**exp14 → beh16**
Drug use	***0.64 (1.90)***	***2.41 (11.10)***	***0.40 (1.49)***	***0.60 (1.83)***	***0.39 (1.47)***	0.04 (1.04)
Delinquency (child report)	***0.62 (1.86)***	***1.49 (4.45)***	***0.36 (1.44)***	***0.50 (1.64)***	***0.29 (1.33)***	0.10 (1.11)
Delinquency (parent report)	***1.50 (4.46)***	***1.82 (6.18)***	***0.30 (1.35)***	***0.24 (1.27)***	***0.32 (1.37)***	0.05 (1.06)
Sexual partners	***0.90 (2.47)***	-	***0.49 (1.62)***	***0.41 (1.50)***	-	0.02 (1.02)
Conduct disorder	***1.10 (3.00)***	***1.94 (6.97)***	***0.31 (1.36)***	***0.83 (2.29)***	***0.14 (1.15)***	0.07 (1.07)
Oppositional defiant disorder	***0.81 (2.24)***	***1.39 (4.03)***	0.16 (1.17)	***0.53 (1.69)***	***0.30 (1.36)***	0.04 (1.04)

Note. Exp = exploitativeness, beh = behavior. Regression coefficients significant at $\alpha = .05$ are depicted in bold and italics. Bootstrapped 95% CIs for the binary part are reported in Table S4 in the supplemental material.

Table 4:

Unstandardized Regression Coefficients (e^b) from Two-part Models of Superiority Predicting Adolescent Problem Behaviors

	Binary part			Continuous part		
Behavior	**threshold**	**beh14 → beh16**	**sup14 → beh16**	**Intercept**	**beh14 → beh16**	**sup14 → beh16**
Drug use	***0.67 (1.94)***	***2.45 (11.63)***	−0.12 (0.89)	***0.61 (1.83)***	***0.41 (1.51)***	0.04 (1.04)
Delinquency (child report)	***0.71 (2.03)***	***1.67 (5.3)***	***−0.24 (0.79)***	***0.48 (1.61)***	***0.35 (1.42)***	0.02 (1.02)
Delinquency (parent report)	***1.49 (4.42)***	***1.83 (6.21)***	−0.15 (0.86)	***0.25 (1.29)***	***0.29 (1.34)***	−0.02 (0.98)
Sexual partners	***0.86 (2.36)***	-	−0.07 (0.94)	***0.41 (1.51)***	-	−0.06 (0.94)
Conduct disorder	***1.13 (3.09)***	***2.02 (7.55)***	−0.14 (0.87)	***0.82 (2.28)***	***0.18 (1.2)***	0.05 (1.05)
Oppositional defiant disorder	***0.83 (2.28)***	***1.42 (4.15)***	−0.14 (0.87)	***0.52 (1.69)***	***0.31 (1.36)***	−0.03 (0.97)

Note. Sup = superiority, beh = behavior. Regression coefficients significant at α = .05 are depicted in bold and italics. Bootstrapped 95% CIs for the binary part are reported in Table S5 in the supplemental material.