Reactivity to Exclusion Prospectively Predicts Social Anxiety Symptoms in Young Adults

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Abstract

Peer victimization leads to negative outcomes such as increased anxiety and depression. The prospective relationship between peer victimization and social anxiety in children and adolescents is well established, and adults with social anxiety disorder (SAD) are more likely than individuals with other anxiety disorders to report a history of teasing. However, a crucial bridge between these findings (peer victimization in young adults) is missing. We manipulated perceptions of peer exclusion in a young adult sample ($N = 108$) using the Cyberball Ostracism Task. Reactivity to exclusion prospectively predicted social anxiety symptoms at a 2-month follow-up, whereas self-reported teasing during high school and current relational victimization did not. This research suggests that *reactions* to peer victimization may be a worthwhile target for clinical interventions in young adults. Targeting how young adults react to stressful social interactions such as exclusion may help prevent the development of SAD. Future research should test if reactivity to exclusion plays a role in the relationship between other disorders (e.g., depression) and peer victimization.

Keywords

social anxiety; peer victimization; exclusion; Cyberball

Peer victimization increases the risk of psychosocial maladjustment and leads to negative outcomes such as increased anxiety and depression, particularly in children and adolescents (Gilbert, 1992; Hawker & Boulton, 2000; Leary, 1990). A meta-analysis on the cross-sectional relationship between peer victimization and psychosocial maladjustment in children and adolescents found support for a consistent relationship between peer victimization and distress, including depression, generalized anxiety, self-esteem, and loneliness (Hawker & Boulton, 2000). Peer victimization is clearly associated with distress in general.

More specific research on social anxiety has suggested a relationship between peer victimization and social anxiety symptoms. Erath, Flanagan, and Bierman (2008) found that, in middle school adolescents, both self- and peer-reported peer victimization predicted social anxiety in cross-sectional data. Siegel, La Greca, and Harrison (2009) found that over the course of 2 months, both overt (e.g., physical aggression) and relational (e.g., teasing or social exclusion) victimization prospectively predicted social anxiety in middle school adolescents. These authors also found that social anxiety prospectively predicted peer victimization over time. In terms of types of victimization, Siegel and colleagues found that relational victimization showed a stronger prospective relationship with social anxiety than

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overt aggression. This latter finding was consistent with results from a study of ninth-grade adolescents conducted by Storch, Masia-Warner, Crisp, and Klein (2005), who found that relational peer victimization, but not overt peer victimization, prospectively predicted social anxiety over a 1-year period. These converging results suggest that verbal teasing or social exclusion (i.e., relational victimization) may have a greater impact on social anxiety than overt, physical aggression.

Some initial evidence suggests that these effects on adolescents may apply in adulthood. Adults with more memories of childhood teasing report higher levels of social anxiety (Roth, Coles, & Heimberg, 2002). In a clinical sample, adults with social anxiety disorder (SAD) were more likely to report a history of teasing than individuals with obsessive compulsive or panic disorder (McCabe, Antony, Summerfeldt, Liss, & Swinson, 2003). Despite the evidence reviewed above, a crucial bridge between adolescence and adulthood is missing. Findings in children and adolescents are prospective and suggest that victimization leads to social anxiety, whereas in adults we have found no tests of whether *prospective links* between peer victimization and social anxiety extend into adulthood.

Perhaps of most interest would be a test of whether prospective relationships with social anxiety extend into young adulthood, as adolescents transition into adulthood. The transition to college represents a context of particular interest, because it may elevate risk for peer victimization due to increased contact between peers (i.e., living in dormitories). It seems plausible that peer victimization during college, as well as in the recent past (i.e., high school) could serve as a stressor that produces increased levels of social anxiety. There are several potential pathways between social anxiety and peer victimization. One possibility is that peer victimization (either past or current) leads to increases in social anxiety symptoms over time. Second, individuals with higher social anxiety in the present may be more likely to be teased or victimized in the future. Third, perhaps individuals who report higher social anxiety in the present are more likely over time to recall and report teasing in the past (e.g., as memories of past experiences are influenced by experience of psychological symptoms). Cognitive models of SAD suggest that part of the anxiety in social situations may stem from the way that the individual perceives the environment (i.e., hypervigilance for signs of social threat) as well as beliefs about how one will be perceived (i.e., negative evaluation is likely; Clark & Wells, 1995; Heimberg, Brozovich, & Rapee, 2012; Hofmann, 2007). In accordance with cognitive models, individuals with higher levels of social anxiety may be likely to perceive external events as signs of rejection and therefore react negatively and experience heightened anxiety. In addition, cognitive models and empirical data suggest that individuals with higher social anxiety have difficulty with emotion regulation (Erwin, Heimberg, Schneier, & Liebowitz, 2003). Therefore, individuals who are higher in social anxiety may be more likely to both perceive social interactions as exclusion and rejection as well as react more negatively when exclusion and rejection occur. Therefore, we speculated (in line with the cognitive models of social anxiety noted above) that it might only be individuals who are particularly reactive to victimization who experience increases in social anxiety.

In summary, existing research suggests that peer victimization itself increases social anxiety, with no clear indication of when this relationship stops (i.e., whether it persists into young adulthood). We suspect that the relationship between peer victimization and social anxiety could reduce at the end of adolescence, but we know of no tests of that hypothesis. Further, it may be that aspects of peer victimization that contribute to social anxiety change with age. For example, it may be that different forms of victimization (i.e., relational vs. overt victimization) or cognitive responses (i.e., memories of victimization or reactions to victimization) contribute more to social anxiety as individuals age. Clinicians could benefit from a clearer picture of which aspects of peer victimization are likely to be an issue in

regard to social anxiety in young adults. These tests in young adults may help inform whether treatments for SAD should address peer victimization.

To test these potential prospective relationships, we assessed self-reported victimization and social anxiety at two time points, approximately 2 months apart; we also assessed reactivity to exclusion at Time 1 utilizing a computer simulation of peer victimization. We hypothesized that reports of past teasing, current victimization, and reactivity to exclusion would each uniquely predict social anxiety symptoms at Time 2, over and above social anxiety symptoms at Time 1. We did not expect that social anxiety at Time 1 would predict report of victimization at Time 2, because such findings are less consistent in adolescents than findings for victimization predicting social anxiety (Siegel et al., 2009; Storch et al., 2005). In addition, it is possible that social anxiety at Time 1 would predict changes in memory of teasing in high school, although notably we were not able to find any previous tests of this question. We also tested whether any of these predictive paths differed across gender because previous research has reported gender differences in the methods and prevalence of victimization, such that women are more likely to report engaging in relational victimization than do men (e.g., Baldry, 2003).

Methods

PARTICIPANTS

A total of 108 participants completed the Time 1 session and 100 participants returned to complete the Time 2 session to receive credit as part of their coursework at a midwestern metropolitan university. Participants were mostly white ($n = 63$; 58.3%) women ($n = 67$; 62.0%). Other ethnicities reported were Asian/Pacific Islander ($n = 34$; 31.5%), Black ($n = 6$; 5.6%), multiracial ($n = 4$; 3.7%), and Hispanic ($n = 1$; .9%). Two thirds of our participants were in either their freshman or sophomore year of college ($n = 69$; 63.9%) with a median age of 19.00 (range 17–24, $SD = 1.16$). One participant was 17 years old and parental permission was obtained for participation. Participants' scores on the straightforward social interaction anxiety measure (see below) ranged from very low to very high (range = 0 to 60, $M = 20.14$). A straightforward score of 28 or higher is analogous to a total score of 34, which has been previously found to indicate probable SAD, suggesting that we had probable cases of SAD in our sample (Rodebaugh et al., 2011). Participants were contacted for the second session via e-mail and then phone until a session was scheduled. Participants were told that participation in the second session would consist only of answering questionnaires (i.e., they knew there would be no additional exclusion computer task). There were no significant differences between participants who did not return for the second session ($n = 8$) and those who did on any measure of social anxiety (all ps > .554).

MEASURES

Straightforward Social Interaction Anxiety Scale (S-SIAS)—The S-SIAS (Mattick & Clarke, 1998; Rodebaugh et al., 2011) is a 20-item measure designed to assess social interaction anxiety. The items describe anxiety-related reactions to a variety of social situations. An example item is *I have difficulty talking with other people*. Overall, research on the scale suggests good to excellent reliability and good construct and convergent validity (see Heimberg & Turk, 2002, for a review). The three reverse-scored items are not scored here because available evidence suggests that the scale has better factor and construct validity when these items are removed (see Rodebaugh et al., 2011 for a review). Internal consistency in this sample was excellent (= .92).

Social Phobia Scale (SPS)—The SPS (Mattick & Clarke, 1998) is a 20-item scale designed to assess fear of scrutiny or performance fears. Items ask about fears of being

scrutinized during routine activities such as eating, drinking, or writing. Collectively, these types of fears comprise *fear of scrutiny*. An example item is *I would get tense if I had to carry a tray across a crowded cafeteria*. The SPS has been shown to have high levels of internal consistency, test–retest reliability, and to discriminate between individuals with social phobia and other disorders (i.e., agoraphobia, depression; Mattick & Clarke, 1998). Internal consistency in this sample was very good (= .89).

Teasing Questionnaire (TQ)—The TQ (Roth et al., 2002) is a 20-item measure that assesses the extent to which people recall having been teased about various topics. Items are rated on a 5-point Likert-type scale ranging from *I was never teased about this* to *I was always teased about this*. Items were developed by Roth et al. based on a review of the literature on teasing, as well as from clinicians' reports of situations that their clients reported being teased about. Participants were asked to rate the items in terms of how much they were teased about that topic in the past (through high school). We used the total score of this measure as a composite of past teasing (through high school). Internal consistency in this sample was good (= .79).

Revised Peer Experiences Questionnaire (PEQ-R)—The PEQ-R (Prinstein, Boergers, & Vernberg, 2001) measures overt and relational forms of peer victimization and is based on the Peer Experiences Questionnaire (Vernberg, Jacobs, & Hershberger, 1999). We used the items that measure relational victimization (*Some of my peers left me out of an activity or conversation I really wanted to be included in*) because relational victimization shows the strongest relationship with social anxiety (as opposed to overt victimization) and excluded items pertaining to overt victimization[1] as has been done in previous research (Siegel et al., 2009; Storch et al., 2005). Participants were asked to rate each item from 1 *(never)* to 5 *(a few times a week)* in terms of how often they have had the behaviors directed at them. We changed the wording of the items from "teen" to "peer" (e.g., replacing the word "teen" with "peer," as in the following example item: *I tried to damage a* teen's *social reputation by spreading rumors about them*). We decided to use the word "peer" instead of "teen" because some participants in our sample were no longer teens or had peers who were not exclusively teens. In the current sample the relational victimization scale exhibited very good internal consistency (= .81).

Brief State Anxiety Measure (BSAM)—The BSAM (Berg, Shapiro, Chambless, & Ahrens, 1998) is a brief version of the State-Trait Anxiety Inventory (STAI; Spielberger, 1983) and was used to measure state anxiety. It contains 6 of the original 20 items (e.g., *strained*) rated on a 1 (*not at* all) to 4 (*very much so*) Likert-type scale. Berg et al. report that this measure showed good internal consistency and a high correlation with the full 20-item scale (*r = .93*). This measure was used to assess anxiety after the first round of the computer task and after the final round of the computer task. In the current study, the BSAM exhibited very good internal consistency (= .84).

<u>**Social anxiety symptom composite:**</u> To assess if peer victimization/exclusion led to increased social anxiety symptoms over time, we standardized and summed scores on the SIAS and the SPS. This composite had very good internal consistency (r_{yy} = .90; Nunnally & Bernstein, 1994) and test–retest reliability from Time 1 to Time 2 (*r* = .78).

<u>**Peer victimization/exclusion computer task (Williams & Jarvis, 2006):**</u> We used the Cyberball computer task to simulate peer victimization or exclusion. The task simulates a game of catch between three other players and was designed to manipulate ostracism.

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[1]When overt items were included there were no significant changes to any results.

Cyberball has been used in multiple studies to simulate exclusion and has been shown to have excellent construct validity, regardless of whether players are told they are playing with real players or with a computer (Eisenberger, Lieberman, & Williams, 2003; van Beest & Williams, 2006; Zadro, Boland, & Richardson, 2006). For example, Eisenberger et al. found that there was greater activation in the anterior cingulate cortex (the area of the brain that responds to pain) when players were ostracized during Cyberball, even without the belief that the other players were real. In Condition 1, participants played a round in which they were excluded from the game of catch (they were included during the first three ball tosses, then the other players did not throw the ball to them for the remainder of the game). In the second round, participants were included in the game of catch and could toss the ball to other players. In Condition 2, the rounds were reversed: inclusion, followed by exclusion. Photographs of real people were used to simulate the other players, in addition to a picture of the participant next to his or her player. The photographs ($N = 17$) of the other players were obtained from multiple sources: (a) those included with Cyberball software, (b) those taken of volunteers who agreed to their images being used in research, and (c) those downloaded from the photo-sharing website Flickr (only photographs authorized for such use). All photographs were randomly assigned. Photographs were intended to reflect the peer group of the participants and were therefore of individuals who appeared approximately 19 years of age, were primarily women ($n = 10$) and simulated the ethnicity distribution of the sample (e.g., most were apparently White, with five individuals appearing Asian American, African American, or multiracial). Participants were asked to imagine that they were playing with real people. Participants were randomly assigned to play either the inclusion or exclusion round first (Condition 1: $n = 55$; Condition 2: $n = 53$). There were no effects for condition or interactions with condition in any tests reported below (all $ps > .14$). Participants played the computer task for about 5 minutes total.

PROCEDURE

Participants completed a two-session experiment with sessions spaced approximately 2 months apart (range = 1 month and 14 days through 2 months and 2 days), which is a similar time period as in Siegel et al. (2009). At Time 1, participants completed a short packet of questionnaires (see above) and then completed the Cyberball computer task (described above) to simulate peer victimization/exclusion. Prior to the computer task, participants' photographs were taken so that their picture could be used to represent them in the game. After completion of the packet, participants received verbal instructions to complete two rounds of Cyberball. In between the two rounds of the computer task, participants filled out a BSAM. At the end of the computer task, participants filled out another BSAM. Approximately 2 months later participants returned to complete Time 2, which comprised completing the measures listed above (but not the Cyberball task).

Reactivity to Exclusion—To create a measure of anxiety (*reactivity*) experienced during the exclusion portion of the computer task, we subtracted anxiety experienced during the inclusion condition from anxiety experienced during the exclusion condition.

Data Analytic Procedure: Structural Equation Modeling—To test a model of social anxiety and peer victimization we used the maximum likelihood estimator in Mplus Version 6.1 (Muthén & Muthén, 2012). Available n dropped to 104 because 4 participants were missing data on an independent variable. Mplus is able to estimate missing data using the maximum likelihood estimator when the data contain all independent variables at Time 1 (i.e., does not have missing data at Time 1). Model fit was evaluated using the (a) comparative fit index (CFI; Bentler, 1990), (b) Tucker-Lewis incremental fit index (TLI; Tucker & Lewis, 1973), (c) root mean square error of approximation (RMSEA; Steiger & Lind, 1980), and (d) standardized root mean square residual (SRMR; Bentler, 1990). The

magnitudes of these indices were evaluated with the aid of recommendations by Hu and Bentler (1999). Essentially, for the CFI and TLI, values of .90 and above were considered adequate, whereas values of .95 or above were considered very good; for the RMSEA and SRMR, values of .08 and below were considered adequate and .05 or less very good. We also tested for gender invariance in predictive paths by testing multiple-group models and utilizing the chi-square difference test to identify whether a model with paths unconstrained across gender fit significantly better than a model with all paths constrained.

Results

Table 1 displays means, standard deviations, and intercorrelations among all variables. In a single model, all Time 1 predictors were used to predict all Time 2 constructs. The initial model fit was perfect by definition because the model was saturated. However, model fit when nonsignificant paths ($ps > .10$) were dropped was excellent (df = 6; CFI = 1.00, TLI = 1.00, RMSEA = .00, SRMR = .03). As can be seen in Figure 1, reactivity to exclusion (estimate = .16, $p = .008$) was the only significant predictor of Time 2 social anxiety symptoms above and beyond Time 1 social anxiety symptoms. Notably, the predictive path for past teasing was near zero and the path for Time 1 relational victimization was both nonsignificant and in the opposite of the hypothesized direction. As can be seen in Table 1, relational victimization at Time 1 also did not have a significant zero-order relationship with social anxiety at Time 2.

Additional predictive paths were found for other constructs, however. Time 1 past teasing significantly predicted Time 2 relational victimization (estimate = .26, $p < .001$). Time 1 past teasing was the only significant predictor of Time 2 past teasing, although social anxiety symptoms at Time 1 approached significance (estimate = .14, $p = .069$). That is, social anxiety at Time 1 showed a trend to prospectively and positively predict increases in self-report of past teasing (during high school) at Time 2.

GENDER INVARIANCE

We also tested if the model was invariant across gender by specifying a multiple group model. A model that was unconstrained across gender did not fit significantly better than a model that constrained all paths across gender, $\chi^2(12, n = 95) = 16.50$, $p = .182$, suggesting that paths could be constrained across gender.

POST HOC POWER ANALYSIS

We conducted a power analysis to test our achieved power for the medium-sized effect (part $r = .27$) found by Storch et al. (2005), who reported that relational victimization prospectively predicted social anxiety in adolescents. We had reasonable power (power = .80) to detect this effect.

Discussion

We found that reactivity to exclusion simulated by the Cyberball computer task prospectively predicted social anxiety 2 months later. Against hypothesis, and in contrast with findings regarding children and adolescents, past teasing through high school. and current relational victimization at Time 1 did not prospectively predict social anxiety. These results bridge findings between childhood and adolescent research and research on adults with SAD (e.g., Erath et al., 2008; McCabe et al., 2003; Ranta, Kaltiala-Heino, Fröjd, & Marttunen, 2012; Siegel et al., 2009), potentially shedding light on a transition between adolescence and adulthood in regard to maintenance of social anxiety. Instead of finding that victimization continued its previously found effects on social anxiety after high school and

into college, we found no indication of self-reported victimization predicting social anxiety over time. Indeed, we found that social anxiety might lead to changes in *memories* of previous victimization, although even that finding was not statistically significant. Instead of current experiences of peer victimization, it appears that processes already put into place by past victimization tend to maintain themselves over time. As a consequence, findings with adults who have SAD (McCabe et al., 2003) might represent an internalization of past experiences, or even an increasingly biased view of these past experiences, rather than an ongoing process beyond adolescence. This idea is consistent with research suggesting that individuals with higher social anxiety tend to perceive themselves and their experiences more negatively than individuals with lower social anxiety (e.g. Moscovitch, Orr, Rowa, Gehring Reimer, & Antony, 2009).

The influence of reactivity to exclusion on future social anxiety displayed in our data suggests two additional conclusions. The first is that peer reactions, potentially falling short of victimization, may continue to influence the development of social anxiety, perhaps without even entering the consciousness of young adults. That is, social anxiety might be maintained by negative reactions to relatively subtle peer behavior that does not appear evident as victimizing per se. We also speculate that the current findings may be dependent upon a relatively supportive college environment, such as the one from which our current sample was drawn. For young adults in a nonsupportive environment we find it plausible that peer victimization would continue to maintain social anxiety. It may be that the process of relational aggression leading to social anxiety may trail off in college and potentially for young adults not enrolled in college, though this idea is speculative and population-based research is needed to address prevalence of peer victimization in young adulthood and across all ages and grade levels.

Reactivity from a computer task was a better predictor of social anxiety symptoms than self-reports of past and current victimization, suggesting that reactivity, rather than victimization per se, may constitute the link between social anxiety and victimization in young adults and potentially in adolescents as well. That is, we theorize that in adolescents and children, reactivity to exclusion might explain any tendency for exclusion itself to prospectively predict social anxiety. We also found that our model was invariant across gender. Reactivity appears to be a general construct that may enhance the risk for social anxiety in both genders. This finding is consistent with cognitive models of social anxiety that suggest that individuals with SAD are likely both to perceive interactions as rejecting and to be highly concerned about the consequences of rejection, therefore reacting with heightened anxiety (e.g., Clark & Wells, 1995; Heimberg et al., 2012; Hofmann, 2007). It may be that this reactivity to a negatively perceived event is the factor that drives further development of social anxiety symptoms. Further, we found that increased relational victimization at Time 2 was predicted by memories of past teasing at Time 1. It may be that individuals who were teased in high school are at greater risk of continued victimization through college. Alternatively, because these are self-report measures, it could be that individuals who perceive heightened teasing in high school also perceive heightened victimization in college.

Our findings should be considered with the limitations of the study in mind. First, these results are based on primarily self-report and are therefore subject to the limitations of self-report data such as biased or inaccurate responding. Future researchers could expand upon these results and include physiological or behavioral measures of reactivity. In addition, our sample consisted mostly of young adult women selected in part due to convenience. Future researchers should test whether these results generalize to additional populations, especially within individuals with clinical levels of social anxiety. However, we believe that young adults are an undersampled area of the population in terms of peer victimization research. Thus, in this study we have begun to test how peer victimization affects individuals in

college, and we are most concerned that, in future studies, these findings be tested in (a) young adults not attending college; (b) young adults in other cultures, and, in regard to the predictive power of reactivity to exclusion; (c) adolescents and children; and (d) clinical samples of individuals with SAD. We also think that the longitudinal design and use of a laboratory task help alleviate typical limitations associated with the use of undergraduate samples: We found support for a prospective relationship utilizing an in vivo computer task that simulates exclusion, rather than a cross-sectional relationship captured by self-report alone. Other methods, such as ecological momentary assessment and peer report of exclusion experiences, would be useful in testing the robustness of our findings.

With these limitations in mind, there are several clinical implications that stem from this research. Exclusion and peer victimization are powerful stressors that can lead to negative psychological outcomes (Hawker & Boulton, 2000). Our study further supported the general association between victimization and social anxiety. Specifically, our results suggest that one's reaction to victimization is a prospective predictor of social anxiety, whereas in young adults, past memories of teasing and current relational victimization may not predict. This result suggests that past findings linking social anxiety to peer victimization in adolescents and children may be better explained by *reactions* to victimization, rather than the experience of peer victimization leading directly to increased social anxiety (Erath et al., 2008; Siegel et al., 2009). However, we think it is important to keep in mind that these results were found in a normative sample of college students and could differ in young adults not in college or in clinical samples. That being said, clinicians who are treating adults with SAD (especially young adults in a college environment) may want to consider several points: (a) it may be the *reaction* rather than the actual presence of peer victimization that leads to increases in social anxiety and (b) the relationship between social anxiety and peer victimization may be due in part to memories of past victimization instead of ongoing victimization. Therefore, interventions (such as cognitive restructuring or imaginal exposure) that can help to alleviate negative reactions to peer victimization such as negative views of the self and intrusive memories about the event may be helpful.

Future researchers should investigate possible mechanisms that might explain why some individuals report greater anxiety after being excluded as well as *how* these reactions to exclusion lead to social anxiety over time. Research suggests that there are genetic contributions to social pain (Way & Taylor, 2011) and researchers have identified areas of the brain that are activated during social pain, exclusion, or rejection (e.g., Eisenberger, 2011). In one study, individuals who reported feeling heightened social rejection across a 10-day period also showed greater brain activation in social pain areas during the Cyberball exclusion task (Eisenberger, Gable, & Lieberman, 2007). It seems plausible that reactivity as measured during the Cyberball task may be a self-reported measure of these biological processes. Individuals who are biologically predisposed to experience (and report) heightened reactivity may go on to develop symptoms of SAD. Of course, future research linking these biological and physiological processes with self-report of reactivity is needed.

These data also speak to the importance of interventions with young adults that focus on how they react to and process stressful social interactions. It seems that reactivity to exclusion may be a useful target for screening and prevention of SAD. Itmay be that if we are able to prevent such negative reactions to social exclusion, we may also prevent the development of social anxiety symptoms. Perhaps an educational intervention teaching parents how to educate children on how to react in a more positive manner to exclusion (i.e., instead of blaming oneself or attributing the exclusion to negative characteristics of the self) could be used (as in Rapee, 2013). In addition, clinicians could work with patients to challenge their beliefs surrounding their memories of teasing and work with them on decreasing negative reactions to exclusion (perhaps through exposures that simulate

exclusion). It also seems worthwhile to test whether reactivity to exclusion may impact other disorders related to peer victimization (e.g. depression, eating disorders; Hawker & Boulton, 2000). We hope that future research can help shed light on interventions that can counteract the negative effects of peer victimization.

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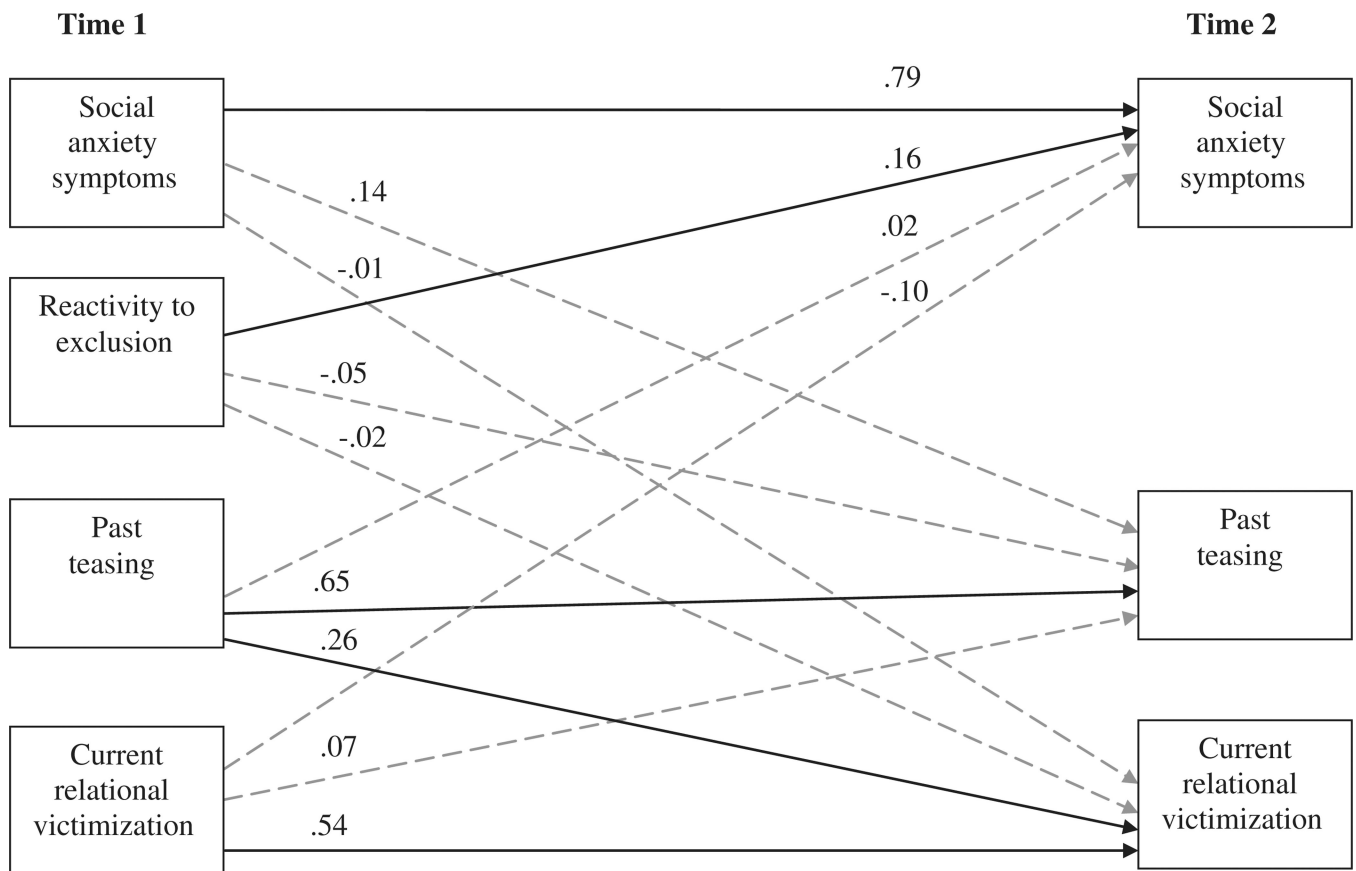**Time 1**   **Time 2**

FIGURE 1.

A model of past teasing, current relational victimization, reactivity to exclusion, and social anxiety symptoms over time. Reactivity is anxiety experienced during the exclusion task simulated by the Cyberball computer task. Social anxiety symptoms is a composite of the Straightforward Social Interaction Anxiety Scale and Social Phobia Scale. Past teasing is measured by the Teasing Questionnaire. Current relational victimization is measured by the Revised Peer Experiences Questionnaire. Solid lines indicate significant paths. Dashed, gray lines indicate nonsignificant paths.

Table 1

Zero-Order Correlations Between Time 1 and Time 2 Variables With Means and Standard Deviations

	Time 1				Time 2		
	Social anxiety	Past teasing	Relational victimization	Reactivity	Social anxiety	Past teasing	Relational victimization
Mean (SD)	−.01 (1.82)	10.14 (7.28)	16.53 (4.36)	.79 (1.92)	−.02 (1.72)	10.56 (8.39)	16.75 (4.99)
Time 1							
Social anxiety		.41**	.12	.07	.78**	.40**	.17
Past teasing			.31**	−.11	.28**	.75**	.43**
Relational Victimization				−.06	.00	.30**	.65**
Reactivity					.26*	−.10	−.10
Time 2							
Social anxiety						.30**	.05
Relational Victimization							

Social anxiety is a standardized composite of the Straightforward Social Interaction Anxiety (Time 1: M = 20.14, SD = 11.83; Time 2 M = 19.26, SD = 11.82) and Social Phobia Scale (Time 1: M = 15.87, SD = 10.87; Time 2, M = 14.47, SD = 10.87).

**
p < .01,

*
p > .05.