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# Yearning for Popularity: How are Popularity Goals and Self-Perceived Popularity Related to Aggression and Victimization?

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## Abstract

Many adolescents want to be popular. Popularity goals are associated with adolescents' relational and overt aggression and aggression has been linked to greater risk for victimization. The current study sought to examine if popularity goals may be linked to victimization through associations with aggression and if self-perceived popularity and gender may moderate these relationships. Participants were 292 adolescents (60.3% girls; 44.5% seventh graders, 55.5% eighth graders; 79.5% White/Caucasian) from the Southern United States. Results indicated that relational aggression accounted for the association between popularity goals and victimization and that self-perceived popularity strengthened this indirect effect for girls but not for boys. Overt aggression also partially explained the relation of popularity goals with victimization similarly for boys and girls. The findings suggest that motivations for popularity and self-perceived popularity are important to understanding variation in adolescent aggression and victimization.

## Keywords

popularity goals, popularity, aggression, victimization

## **Introduction**

Many adolescents are concerned with popularity and have a desire to be popular in their peer group (Breslend et al., 2018; LaFontana & Cillessen, 2010), perhaps because popular youth get attention from others, are socially influential, and have prestige (Adler & Adler, 1998; Eder, 1985; Humphreys & Smith, 1987; LaFontana & Cillessen, 2010). However, both popularity and goals to be popular, have been linked to adolescent relational and overt aggression (Dawes & Xie, 2014; Cillessen & Mayeux, 2004; Li & Wright, 2014; Ojanen & Nostrand, 2014). Further, research indicates that highly aggressive youth are at greater risk for peer victimization and adjustment issues (Casper & Card, 2017; Reijntjes et al., 2010; 2011). Thus, it may be that popularity goals put youth at risk for victimization, via aggressive behavior. However, research on how popularity goals and victimization are associated has been relatively neglected. The current study examines the direct and indirect concurrent relations between popularity goals and victimization, via overt or relational aggression.

Additionally, as evidence suggests popularity goals may be related to aggression and victimization differentially based on popularity and the gender of an adolescent (Breslend et al., 2018; Duffy et al., 2017; Cillessen et al., 2014; Dawes & Xie, 2014; Ojanen & Nostrand, 2014; Shoulberg et al., 2011), the present study also considers these individual differences as moderators. To examine the effects of popularity, we rely on self-reported popularity which may allow greater insight about how the adolescent's own perception of their status is related to their aggression with peers. Before elaborating on the unique role of self-perceived popularity, we first address the relations of popularity goals and popularity with aggression and victimization.

### *Popularity, Goals, and Aggression*

Starting in early adolescence and continuing through high school, perceived popularity and acceptance (i.e., being liked by peers) diverge, becoming less positively related to one another over this time period (Cillessen & Mayeux, 2004; van den Berg et al., 2020). In adolescence, popularity is distinct from being well-liked by peers. The constructs are only moderately correlated and are associated with different behavioral patterns (Cillessen et al., 2011; Asher & McDonald, 2009).

Adolescents often desire popularity within the peer system so that they can get more social attention and inclusion from peers (Adler & Adler, 1998; Eder, 1985; Gavin & Furman, 1989), and this may be particularly true during early adolescence. LaFontana and Cillessen (2010) found that adolescents were inclined to prioritize popularity over other domains like achievement, romantic relationships, and maintaining friendships. They also found that concerns for prioritizing peer status increased over time, peaked in early adolescence, and leveled off later in adolescence. More recently, Dawes and Xie (2017) examined changes in popularity goals from fifth to seventh grade. They found that popularity goals increased during the transition to middle school (fifth to sixth grade) then tended to decrease after sixth or seventh grade. These longitudinal studies highlight that popularity is particularly important in early adolescence.

To achieve popularity, some youth may use aggressive behavior. Resource Control Theory (Hawley, 2003) suggests that aggression may be linked to popularity because aggression is *one* way to control resources and attain social dominance in the peer group. Youth who are perceived as popular by peers are heterogeneous. Some popular youth are seen as being highly prosocial, whereas others are perceived as aggressive (Cillessen et al., 2011; de Bruyn & Cillessen, 2006), and still others may use both aggressive and prosocial behaviors with their peers (Hawley, 2003). Furthermore, longitudinal evidence also suggests that there is a bi-directional relationship between popularity and relational aggression in middle school, especially for girls (Cillessen & Mayeux, 2004). Relational aggression may predict increases in peer nominated popularity but popularity may also lead to increases in relational aggression over time.

There is some evidence that goals to be popular are similar to popularity in their relations with aggression. While some find few associations of popularity goals with peer- and self-reported behaviors (Malamut et al., 2021), others find that popularity goals are positively related to relational and overt aggression and negatively associated with peer-reported prosocial behaviors (Cillessen et al., 2014; Dawes & Xie, 2014; Dumas et al., 2019; van den Broek et al., 2016). There is also evidence that these associations are present even after controlling for popularity status (Dawes & Xie, 2014; Li & Wright, 2014) or that associations with antisocial behaviors are strengthened for youth who are high on popularity (e.g., Dawes & Xie, 2014; van den Broek et al., 2016).

### *Popularity, Goals, and Victimization*

But how are popularity and popularity goals related to peer victimization? While some research has indicated that peer-reported popularity is negatively associated with victimization (Closson & Watanabe, 2018; de Bruyn et al., 2010), others find that some highly popular youth are vulnerable to victimization (Dawes & Malamut, 2020; Malamut et al., 2020; 2021). Growing evidence indicates that high popularity is associated with reputational victimization (e.g., being gossiped about) in particular (Closson et al., 2017; Prinstein & Cillessen, 2003), and that both high and low popularity may predict increases in reputational victimization over time (Malamut et al., 2020).

The relation of popularity goals with victimization has been less explored. Initial evidence suggests that popularity goals may be differentially related to victimization based on the popularity and gender of the adolescent. Breslend et al. (2018) found that for boys and girls higher in popularity, popularity goals were unrelated to relational victimization. However, for girls who were lower on popularity, popularity goals were positively associated with relational victimization. In contrast, the relation of popularity goals with relational victimization was negative for boys low in popularity. Further, girls' popularity goals were unrelated to physical victimization, however, for boys, higher levels of popularity goals were associated with higher levels of physical victimization.

There is reason to expect that popularity goals could be linked with victimization. First, we suggest that as popularity goals are tied to aggression (Cillessen et al., 2014; Dawes & Xie, 2014) and aggression is a risk factor for victimization in the peer group (Casper & Card, 2017), high popularity goals may contribute to more peer victimization via aggression. Second, youth who are picked on by peers may be likely to desire popularity because they may think that popularity is a solution to their problems. Thus, this study examines how aggression may account for associations between popularity goals and victimization. Based on Breslend et al. (2018) and others, we also consider how popularity and gender may moderate these relationships.

### *Moderators: Popularity and Gender*

As noted by the research above, the implications of popularity goals and aggression may vary for youth based on their other characteristics. Adler and Adler

(1998) identified a group of youth who wanted to be liked by popular children, wanted to hang out with them, and wanted to be popular, but were unpopular. They labeled this group the “wannabes,” describing them as copying popular children’s behaviors (i.e., trying to act cool or tough, exhibiting risky or aggressive behaviors) in order to be included in popular groups. For instance, they observed that popular children and “wannabes” were both involved in aggressive behaviors. They also observed that popular children aggressed against others to maintain their status, but “wannabes” used aggression as a means to improve their status with popular peers. However, without the social status to protect them from the negative repercussions of aggression, these “wannabes” were more victimized by peers than the highly popular youth.

Gender may also moderate how popularity goals are related to aggression. While some find that popularity strengthens the association of popularity goals with aggression (e.g., Dawes & Xie, 2014), others find that this may vary for boys and girls. Duffy et al. (2017) found that for boys at high levels of popularity, there was a positive association between popularity goals and bullying, but not for boys at low levels of popularity. In contrast, it was only for girls low in popularity that there was a positive association between prioritizing popularity and bullying behaviors (Duffy et al., 2017).

Additionally, research and theory suggest gender differences in the characteristics associated with popularity (Breslend et al., 2018; Duffy et al., 2017; Shoulberg et al., 2011). According to Gender Prototypicality Theory (Mayeux & Kleiser, 2019), popularity emerges with adolescents’ interest in cross-sex peer interactions and romantic relationships and that youth who act in line with gender norms may be more popular. Consistent with this theory, relational aggression tends to be more highly linked with popularity for girls than boys (Cillessen & Mayeux, 2004; Cillessen & Rose, 2005; Rose et al., 2004), and overt aggression is more related to popularity for boys than for girls (Sandstrom & Cillessen, 2006). It may also be that popularity goals are differentially related to aggression based on gender, with popularity goals being more linked to relational aggression for girls and to overt aggression for boys. The current study explores these possibilities.

### *Self-Perceived Popularity*

A final innovation of the current study is that it examines *self-perceived* popularity as a moderator of how popularity goals, aggression, and victimization are interrelated. Self- and peer-perceived popularity are correlated but uniquely related to adolescent outcomes. Mayeux and Cillessen (2008) and Putarek and Kerestes~ (2015) found small to moderate relationships between peer-perceived popularity and self-perceived popularity, indicating that the constructs were related but also distinct. Mayeux and Cillessen (2008) also found that both reports were correlated with relational and overt aggression and that self-perceptions of popularity moderated how peer-reports were related to aggression in ninth grade, suggesting that self-perceptions play an important role in predicting adolescents' aggressive behaviors. Additionally, Putarek and Kerestes~ (2015) also found that both self-perceived popularity and peer perceived popularity were independently, and negatively, related to loneliness. Additional evidence that self-perceptions of popularity might have stronger relationships with some forms of adolescent adjustment comes from Tucker et al. (2011) who found that self-reported popularity was more consistently related to substance use in a sample of middle school students and that only self-reported popularity, and not peer-reported popularity, was predictive of past month heavy drinking and marijuana use.

It may be that self-perceptions of popularity are particularly important to understanding the association of popularity goals with adolescent aggression. For instance, if an adolescent desires popularity strongly, their self-perceptions of popularity may more directly motivate behaviors to achieve popularity than their peers' perceptions of their popularity. Additionally, we suggest that the effects of peer-perceived popularity on adolescent behavior are at least partially filtered through the adolescent's own perception of their status.

However, evidence about the role of self-perceived popularity on popularity goals and aggression is equivocal and deserves further attention. Kos~ir et al. (2022) found that for Slovenian adolescents with high self-perceived popularity there was a stronger relation between popularity goals and bullying than for youth lower on self-perceived popularity. Dumas et al. (2019) found that popularity goals and self-reported popularity were concurrently related to relational aggression, however only popularity goals predicted increases in relational aggression over time. Thus, the current study breaks

from a past focus on peer-perceived popularity to examine self-perceptions of popularity, in combination with popularity goals, and their relations with aggression and peer victimization.

## **Hypotheses**

To summarize, the current study sought to examine how popularity goals were related to victimization via relational and overt aggression and examine if self-perceived popularity and gender moderated these relationships.

Our hypotheses were:

1. Popularity goals would be correlated with relational and overt aggression.
2. Overt and relational aggression would be associated with victimization.
3. Popularity goals would be associated with victimization and that aggression would partially explain this association.
4. Self-perceived popularity would moderate how popularity goals were related to relational and overt aggression. We also explored how self-perceived popularity would moderate how aggression and victimization were related and how popularity goals were related to victimization.
5. The association of popularity goals with relational aggression would be stronger for girls. We also explored if gender moderated any other associations in our models.

## **Method**

### *Participants*

Participants were recruited from the seventh and eighth grades from three Christian (Protestant or Catholic) private schools in the Southern United States. 54.8% ( $n = 160$ ) were recruited from a school just outside Birmingham, AL and 45.2% ( $n = 132$ ) were recruited from two schools in Tuscaloosa, AL. This age group was chosen because of the early adolescent peak in popularity goals found in past studies (LaFontana & Cillessen, 2010).

We recruited 292 seventh and eighth graders during December 2018 and January 2019. As data were collected over two sessions, there was some missingness



in the data. There were participants who skipped answering some questions or were absent on one of two data collection days. Comparing the participants who completed all measures with those with missing data showed no significant differences on gender, race, and grade. To include as many participants as possible, those with missing endogenous variables in the SEM analyses were included using maximum likelihood estimation in Mplus.

Four participants did not complete the popularity goals and aggression measures (exogenous variables), thus those four participants were excluded from data analyses. The final sample size was 288 adolescents (59.7% girls; 55.9% eighth graders; 44.1% seventh graders). Participants self-identified as White/Caucasian (79.2%), African American (4.9%), Hispanic (3.8%), American Indian/Alaska native (1.0%), Asian-American (.7%), Native Hawaiian/Pacific Islander (.7%) and of an “other” race (1.4%). In addition, 1.7% indicated that they did want to answer and 6.6% skipped the question. Using the MacArthur Scale of Subjective Social Status-Youth Version (Goodman et al., 2003), participants felt that they were of middle to upper class socioeconomically ( $M = 6.4$ ,  $SD = 1.7$ , median = 6.0, scale range = 1–10, observed range = 2–10).

### *Measures*

*Popularity Goals.* Popularity goals were measured by a self-report questionnaire (e.g., Dawes & Xie, 2017). Participants rated the statement, “It is important that people think I am popular,” using a 5-point Likert Scale ranging from 1 (never true) to 5 (always true). Past studies have used this measure and found that popularity goals relate in expected ways to similar constructs for young adolescents (e.g., Dawes & Xie, 2014; Dawes & Xie, 2017).

*Self-Perceived Popularity.* Popularity was assessed with one item from the MacArthur Scale of Subjective Social Status (SSS) - Youth Version (Adler & Stewart, 2007) and one item from the Global Self-Worth scale (Harter, 2012). Participants were asked how they perceived their own social standing. From the SSS, youth were asked “Now assume that the ladder is a way of representing your school. At the top of the ladder are the people in your school with the most respect and the highest social standing. At the bottom are the people who no one respects and who no one wants to

hang around with. Now think about you in your school. Please tell us where you think you would be on this ladder compared to other kids in your school. Fill in the circle that best represents where you would be on this ladder.” Participants rated their response using a picture of a ladder with 10 rungs, with the highest rung indicating that they thought they were the most popular in their school and the lowest rung indicating that they thought they were the least popular in their school. This measure has been previously used with young adolescents (Goodman et al., 2003). From the Harter scale (2012), participants were asked to choose one of two statements (e.g., “Some teenagers are popular with others their age BUT Other teenagers are not very popular”). Then participants were asked to choose how much the statement was true for them, “really true for me” or “sort of true for me.” These choices were converted to a 4-point scale, with higher scores indicating higher self-perceived popularity. This measure has also been previously used with young adolescents (Epperson et al., 2021).

The two items were moderately correlated ( $r = .594, p < .001$ ) and related to measures of aggression, victimization, and popularity goals in similar ways according to Fisher’s  $r$ -to- $z$  transformations. Thus, items were combined to create a self-perceived popularity scale by standardizing each item within the sample and then averaging the standard scores together. Higher scores on this subscale indicate that youth perceived themselves to be higher than others in the sample on popularity, whereas lower scores indicate that youth perceive themselves to be less popular compared to others in the sample.

*Aggression.* Relational aggression and overt aggression were assessed by self-report measures (Little et al., 2003). Participants completed a 36-item instrument from Little et al. (2003). Participants responded to statements by rating how much they agreed on a scale from 1 (not at all true) to 4 (completely true). Examples of items pertaining to relational aggression (6 items) are “I’m the kind of person who gossips or spreads rumors” and “I’m the kind of person who says mean things about others.” The items for overt aggression (6 items) include “I’m the kind of person who hits, kicks, or punches others” and “I’m the kind of person who threatens others.” These items were rated on a scale from 1 (not all true) to 4 (completely true). Internal reliability for relational aggression was  $\alpha = .80$  and overt aggression was  $\alpha = .71$ . This scale has been used with

middle school students in other studies (Little et al., 2003).

*Peer Victimization.* Victimization was assessed via self-reports. Adolescents responded to 15 questions from the Children's Social Experiences Questionnaire-Self Report (CSEQ-SR; Crick & Grotpeter, 1996) to assess relational victimization (e.g., "How often does a kid try to keep others from liking you by saying mean things about you?"), overt victimization (e.g., "How often do you get hit by another kid at school?"), and being the recipient of prosocial behavior (e.g., "How often does another kid try to cheer you up when you feel sad or upset?"). Participants rated each item on a 5-point Likert Scale that ranges from 1 (never) to 5 (all the time). For this study, we combined relational victimization (5 items) and overt victimization (5 items) into one victimization scale. Internal reliability for this scale was  $\alpha = .89$ . This measure has been used previously with middle school students (Martin & Huebner, 2007).

### *Procedure*

All procedures were approved by the University of Alabama's Institutional Review Board. Questionnaires were administered in classroom or group sessions in each school over two data collection days. The study was administered in group or classroom sessions in school settings over 2 days. During each session, adolescents spent approximately 45 minutes to an hour to complete the measures. Researchers handed out an assent form to adolescents whose parents had consented for them to be in study. They read the assent script and decided whether they wanted to participate or not. The participating students received gift as compensation. Adolescents who assented completed paper-and-pencil measures.

## **Results**

### *Overview of Analyses*

We used SPSS for Windows (v. 24.0) to examine the normality of variables, compute descriptive statistics, examine correlations amongst our variables, and to complete a series of independent samples *t*-tests to compare boys and girls on all variables. Structural equation modeling in Mplus 8.6 (Muthe'n & Muthe'n, 1998-2017) was used for the main analyses. Mplus code for our main analyses were modified from

Stride et al. (2015).

To examine our hypotheses, the  $\chi^2$  test of model fit, the comparative fit index (CFI), the root mean square error of approximation (RMSEA), and the standardized root mean squared residual (SRMR) were used as indices of goodness-of-fit (Byrne, 2013). Good model fit is indicated by a nonsignificant  $X^2$ , however, chi-square tests highly depend on the sample size and the number of degree of freedom. For these reasons, CFI, SRMR, and RMSEA were used as additional indicators of fit for the current study. Specifically, a CFI  $\geq .95$ , a SRMR  $\leq .08$ , and a RMSEA  $\leq .06$  (Hu & Bentler, 1999) indicate good model fit. Since this study used boot-strapped conditional indirect effect analyses, the significance of the test was determined based on a 95% boot- strapped confidence interval as is considered best practice (Muthe'n et al., 2016). If the confidence interval did not include zero, we considered it a significant result. If effects were not significant, they were removed from final models. In analyses to examine how self-perceived popularity moderated effects, conditional indirect effects were examined. If the index of conditional indirect effect was significant, we conducted follow-up tests at different levels of self-perceived popularity (+/- SD). Finally, multiple group analyses were conducted to see if models differed across boys and girls. To test for gender differences, each path in the fully constrained model was freed one at a time and  $\Delta$ CFI was examined. When  $\Delta$ CFI was greater than .01 it indicates that the path should be allowed to vary between boys and girls.

### *Descriptive Statistics*

Descriptive statistics and correlations for boys and girls are presented in Table 1. Partially in support of Hypothesis 1, overt and relational aggression were related to popularity goals for girls only. Partially in support of Hypothesis 2, for girls both forms of aggression were related to victimization, but for boys only overt aggression was directly related to victimization. Relevant to Hypothesis 3, popularity goals were positively related to victimization for girls but were not related for boys. Correlations for boys and girls were compared using Fisher's  $r$  to  $z$  transformation (Lenhard & Lenhard, 2014). In general, correlations amongst the variables were similar for boys and girls with a one exception. According to Fisher's  $r$ -to- $z$  transformation, the correlation between popularity

goals with relational aggression ( $z = 2.56, p = .005$ ) was significantly larger for girls compared to boys.

**Table 1. Descriptive Statistics and Correlations between Variables for Girls and Boys.**

	1	2	3	4	5	Boys Mean (SD)	t-test	df
1. Popularity goals	–	-.010	.085	.211*	.111	2.69(.97)	.330	252
2. Relational aggression	.328**	–	.582**	.163	-.129	1.25(.34)	2.893**	260.53
3. Overt aggression	.256**	.480**	–	.262**	-.163	1.26(.33)		180.56
4. Victimization	.220***	.235**	.325**	–	.262**	1.82(.70)		276
5. Self-perceived Popularity	.171*	.067	-.183*	-.160	–	.10(.963)		276
Girls	–							
Means (SD)	2.74(1.05)	1.39(.45)	1.16(.23)	1.74(.62)	-.05(.86)	–		

*Notes.* Correlations between variables for girls are presented below the diagonal and correlations between the variables for boys are presented above the diagonal. The t-tests for relational aggression and overt aggression were conducted without the assumption that the variances for boys and girls were equal. \* $p < .05$ . \*\* $p < .01$

A series of independent samples *t*-tests were performed to compare boys and girls on all variables (see Table 1). Girls reported more relational aggression,  $t(260.530) = 2.893, p = .004$ , than boys. Boys reported more overt aggression,  $t(180.564) = -2.916, p = .004$ , relative to girls. Boys and girls did not differ on popularity goals, victimization, or self-perceived popularity.

#### *How Does Self-Perceived Popularity Moderate The Relationships Between Popularity Goals and Victimization Through Relational Aggression?*

Our first analyses focused on how relational aggression may help to explain how popularity goals relate to victimization and if these relations were dependent on self-perceived popularity (Hypothesis 3 and 4). In the initial model, the interaction of popularity goals with self-perceived popularity predicting relational aggression was significant, however, the interaction of self-perceived popularity with relational aggression predicting victimization ( $\beta = .116, 95\% \text{ CI } [-.008, .222]$ ) and the interaction of self-perceived popularity with popularity goals predicting victimization ( $\beta = .008, 95\%$

CI [-.119, .130]) were not. Thus, we removed these non-significant interactions from the model but kept the direct effect of self-perceived popularity on victimization. The revised model is presented in Figure 1. Our final model had a good fit to the data (CFI = 1.00, RMSEA = .00, SRMR = .004) and the index of moderated mediation was significant ( $b = .015$ , 95% CI [.002, .037]). Popularity goals ( $\beta = .216$ , 95% CI [.107, .320]) and relational aggression ( $\beta = .130$ , 95% CI [.010, .249]) positively predicted victimization, but self-perceived popularity was negatively predictive of victimization ( $\beta = -.224$ , 95% CI [-.354, -.100]) and moderated how goals were related to relational aggression ( $\beta = .181$ , 95% CI [.047, .314]). The conditional indirect effect was assessed at differing levels of self-perceived popularity. At low levels of self-perceived popularity, popularity goals were not significantly related to victimization through relational aggression ( $b = .006$ , 95% CI [-.006, .032]). However, at average ( $b = .020$ , 95% CI [.003, .045]) and high ( $b = .034$ , 95% CI [.005, .070]) levels of self-perceived popularity, popularity goals were significantly related to victimization through relational aggression.

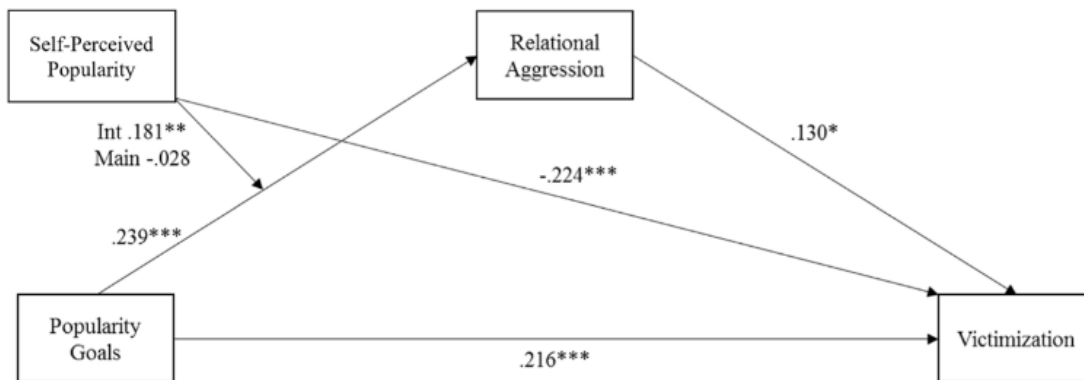


Figure 1. Results of Revised Model After Removing Non-Significant Interaction of Self-Perceived Popularity with Relational Aggression. Notes. Standardized coefficients are reported. Int = Interaction of Popularity Goals with Self-Perceived Popularity Predicting Relational Aggression, Main = Main Effect of Self-Perceived Popularity on Relational Aggression. \* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

To examine our fifth hypothesis about gender moderation of the model, a multiple group analysis was conducted. The fully constrained model had poor fit (CFI = .859, RMSEA = .084, SRMR = .059), so we attempted to find a better model by freeing each path one at a time. The final model allowed one path from popularity goals to relational

aggression to vary and had good fit (CFI = 1.000, RMSEA = .000, SRMR = .027). As noted above, popularity goals were significantly predictive of relational aggression for girls ( $\beta = .343$ , 95% CI [.215, .466]), but not for boys ( $\beta = -.044$ , 95% CI [-.291, .192]).

Although the multigroup analysis did not indicate that the interaction of popularity goals and self-perceived popularity differed across boys and girls, we conducted moderated mediation analyses for girls and boys separately based on the finding that the association of popularity goals and relational aggression differed for boys and girls. For girls, the moderated mediation analysis was a good fit to the data (CFI = .971, RMSEA = .080, SRMR = .023). A diagram for moderated mediation for girls is presented in Figure 2. Popularity goals ( $\beta = .203$ , 95% CI [.053, .341]) and relational aggression ( $\beta = .175$ , 95% CI [.013, .326]) were positively related to victimization. Self-perceived popularity was negatively related to victimization ( $\beta = -.209$ , 95% CI [-.369, -.052]). The interaction of popularity goals with self-perceived popularity was significantly predictive of relational aggression ( $\beta = .170$ , 95% CI [.011, .311]). The simple slope analysis indicated that the relation of popularity goals to relational aggression increased as self-perceived popularity increased (low popularity  $b = .075$ , 95% CI [.001, .151], average popularity  $b = .146$ , 95% CI [.081, .224], and high popularity  $b = .216$ , 95% CI [.105, .347]; see Figure 3). The index of moderated mediation was significant ( $b = .020$ , 95% CI [.001, .054]) and thus, conditional indirect effects at levels of the moderator were estimated. Popularity goals were indirectly related to victimization via relational aggression and this effect increased as self-perceived popularity increased (low popularity  $b = .018$ , 95% CI [.001, .054], average popularity  $b = .035$ , 95% CI [.005, .074], and high levels of popularity  $b = .052$ , 95% CI [.007, .109]). To summarize, for girls popularity goals were associated with victimization via increased relationally aggressive behavior but higher self-perceived popularity strengthened this effect.

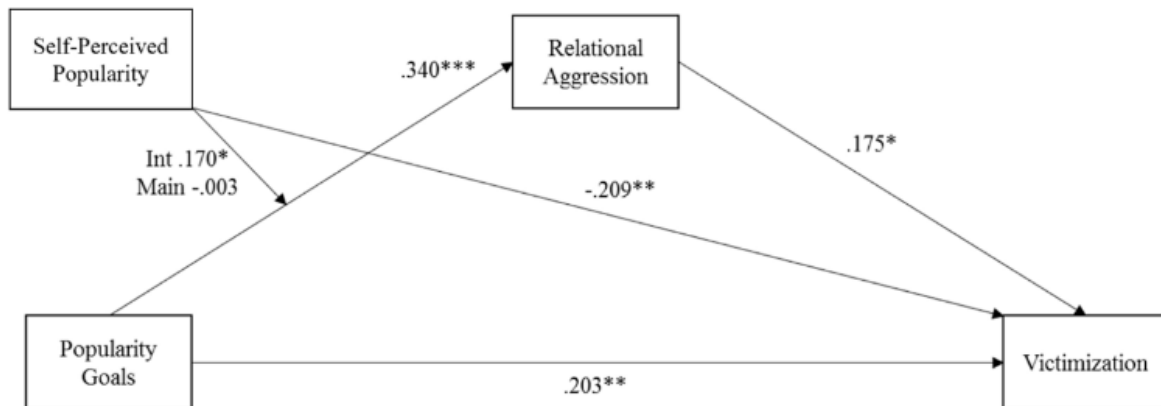


Figure 2. Conditional Indirect Effect Only for Girls. *Notes.* Standardized coefficients are reported. Int = Interaction of Popularity Goals with Self-Perceived Popularity Predicting Relational Aggression, Main = Main Effect of Self-Perceived Popularity on Relational Aggression.  $*p < .05$ .  $**p < .01$ .  $***p < .001$ .

For boys, the moderated mediation model was a good fit to data (CFI = .961, RMSEA = .083, SRMR = .025), however the index of moderated mediation was not significant ( $b = .025$ , 95% CI [-.002, .071]). The interaction of popularity goals with self-perceived popularity predicting relational aggression was significant ( $\beta = .314$ , 95% CI [.069, .533]) but both main effects were not significant; popularity goals were not related to relational aggression ( $\beta = -.046$ , 95% CI [-.294, .188]) and self-perceived popularity was not associated with relational aggression ( $\beta = -.022$ , 95% CI [-.214, .201]). Further, the simple slope analysis indicated that the simple slopes were not significant at low ( $b = -.108$ , 95% CI [-.273, .015]), average ( $b = -.016$ , 95% CI [-.117, .059]), and high ( $b = .076$ , 95% CI [-.008, .173]) levels of self-perceived popularity (see Figure 2). Additionally, relational aggression was not related to victimization ( $\beta = .124$ , 95% CI [-.038, .322]) for boys. However, popularity goals were positively related to victimization ( $\beta = .234$ , 95% CI [.081, .389]), and self-perceived popularity was negatively related to victimization ( $\beta = -.260$ , 95% CI [-.446, -.063]).



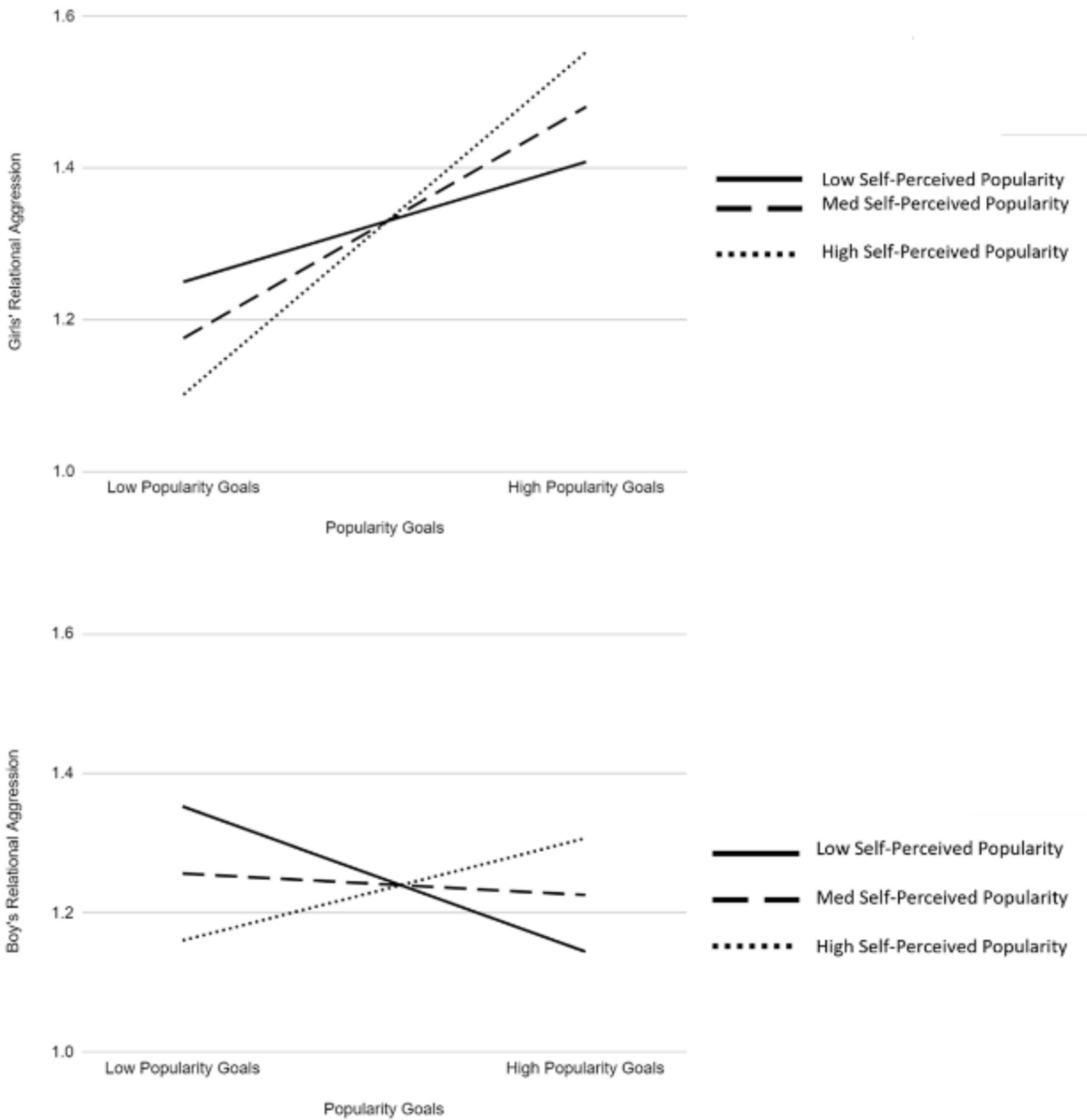


Figure 3. Simple slope analysis results for interaction of popularity goals with self- perceived popularity in prediction of relational aggression for girls (above) and boys (below).

*How Does Self-Perceived Popularity Moderate The Relationships Between Popularity Goals and Victimization Through Overt Aggression?*

We examined similar moderated mediation analyses with overt aggression as the mediator (Hypothesis 3 and 4). The initial model had poor fit (CFI = .764, RMSEA = .233, SRMR = .047). Self-perceived popularity did not moderate any of the associations.

Thus, all interactions were removed from our model.

Our final model examined whether overt aggression explained the relationship between popularity goals and victimization (CFI = 1.000, RMSEA = .000, SRMR = .000). Popularity goals were related to overt aggression ( $\beta = .202$ , 95% CI [.034, .322]), and overt aggression was related to victimization ( $\beta = .240$ , 95% CI [.117, .358]). Popularity goals were indirectly related to victimization via overt aggression (IE = .043, 95% CI [.011, .093]). The direct effect of popularity goals on victimization was still significant after adding overt aggression to the model (DE = .202, 95% CI [.095, .305]). Self-perceived popularity was not related to overt aggression ( $\beta = -.132$ , 95% CI [-.264, .008]) but was significantly negatively related to victimization ( $\beta = -.198$ , 95% CI [-.329, -.072]).

Next, a SEM multiple-group analysis was used to examine if the prior analysis differed for boys and girls (Hypothesis 5). The final model indicated that all paths could be constrained for boys and girls. Thus, overt aggression explained, in part, how popularity goals were related to victimization for both boys and girls.

## **Discussion**

Youth care about popularity and prioritize popularity goals (LaFontana & Cillessen, 2010). The current study sought to examine how aggression may explain popularity goals' relation to victimization and if this relationship differed by how youth thought about their own popularity and by gender. Findings for overt aggression were clear and were not moderated by gender or popularity. Overt aggression partially accounted for the relation of popularity goals with victimization for both boys and girls and for youth at all levels of popularity. Previous findings of the interaction effect of popularity goals with popularity status on overt aggression have been mixed. Our results are similar to the findings of others who have examined popularity with peer nominations (Dawes & Xie, 2014; Ojanen & Nostrand, 2014), suggesting that neither self nor other perceived popularity moderates how popularity goals are related to overt aggression. However, it may be that self-perceived popularity moderates how goals are related to other subtypes of aggression or at older ages (e.g., Duffy et al., 2017).

For relational aggression, we found that results differed by gender and by self-perceived popularity. Popularity goals were positively related to relational aggression for

girls but not for boys. We also found that relationally aggressive behaviors partly accounted for the association of popularity goals with victimization for girls. Previous studies also indicated that relational aggression was more related to popularity for girls than for boys (Cillessen & Mayeux, 2004; Cillessen & Rose, 2005; Rose et al., 2004). This may be due to what is gender normative; boys may perceive relational aggression as a typically- female behavior and popular boys may not be relationally aggressive because they may perceive it as gender non-normative (Crick, 1997; Mayeux & Kleiser, 2019; Rose et al., 2004). In this way, boys' engagement in relational aggression may lead to negative feelings or social rejection by other peers and boys may not perceive relational aggression as an appropriate strategy to maintain or obtain status.

Additionally, our findings suggest that the maintenance of popularity may be the primary path by which goals for popularity are associated with relational aggression for girls. Popularity goals were positively associated with relational aggression at all levels of popularity status, but popularity status strengthened this relationship. Our findings were consistent with previous findings indicating that peer-nominated popularity intensified the relationship between popularity goals and relational aggression (Dawes & Xie, 2014; Ojanen & Nostrand, 2014). However, our study, using self-perceived popularity adds to this interpretation. Our findings suggest that thinking that oneself is popular may exacerbate the link between popularity goals and relational aggression in girls. It may be that these girls think they have more social leeway or that there will be fewer social sanctions for them to use relational aggression. Thus, their perceptions of their social status and the associated benefits may be important in determining their use of relational aggression as a mean to maintain their place in the hierarchy (Eder, 1985). There was also limited evidence of a "wannabe" effect. Shoulberg et al. (2011) found that girls high on popularity goals but low on peer-reported status used aggression more than their peers. We found a positive relation between popularity goals and aggression, even for girls who perceived themselves to be lower in status, however this relationship was strongest for girls who perceived that they were high on popularity. Thus, our findings are more in support of the idea that relational aggression is used to maintain popularity than the idea that relational aggression is a characteristic of youth low on popularity but who highly desire it.

There was little evidence that popularity was a strong moderator of how goals were associated with relational aggression for boys. Our best fitting model indicated that, for boys, popularity goals were positively related to victimization and that self-perceived popularity was negatively related to victimization, but popularity goals were not related to relational aggression for boys. As boys reported using less relational aggression than girls, this may align with Gender Prototypically Theory (Mayeux & Kleiser, 2019). Unlike girls, boys may use different strategies, such as athletics or humor, when they want to be popular (LaFontana & Cillessen, 2002).

In addition, our findings suggest that relational aggression may be a risk factor for victimization regardless of self-perceived popularity. Although popularity was negatively related to victimization, aggression was associated with higher victimization no matter the level of self-perceived popularity. Perhaps, popular girls who are relationally aggressive are retributive targets of their peers or of other popular girls' relational aggression (Dawes & Malamut, 2020). Therefore, relational aggression is an important indicator of victimization regardless of self-perceived popularity.

Our results suggest two possible mechanisms of intervention. First, one foci would be to target norms around popularity to reduce the popularity- relational aggression association. It may be that by reducing the peer status hierarchy (Garandean et al., 2011) adults can help to reduce the association between aggression and popularity amongst youth and may even reduce desires for popularity in the peer group. A second target may be at the level of reducing relationally aggressive behavior in peer groups, of which promising interventions exist (e.g., Waasdorp et al., 2022).

There are several limitations to this study that need acknowledgement. First, the reliance on self-perceived popularity is interesting in that it examines popularity through the adolescent's interpretative lens. However, as the accuracy of perceptions of social network affiliations have been shown to be related to gender, age, and social centrality (Capella et al., 2012; Lee et al., 2022), it may be that some youth were more accurate in their self-perceived popularity than others. Future research may consider how accurate or inaccurate self-perceptions of popularity affect the association of popularity goals with aggression and victimization. It may also be that the observed associations amongst variables were inflated due to shared-method variance, so continued examinations of

popularity from both self- and peer-reports are necessary. Second, our sample was also limited in that they were mostly White adolescents and were from private schools in the Southern United States. Adolescents in the States have different lived experiences and backgrounds and there is evidence that what makes a child popular is culturally variable (e.g., Zhang et al., 2018) or varies by school context (e.g., Becker & Luthar, 2007; Garandeau et al., 2011). Thus, we acknowledge that the generalizability of our findings may be limited. In future studies, it will be important to consider cultural and contextual variation. Larger studies, conducted across multiple contexts, can examine if the relations amongst these variables vary by predominant social norms and values. Third, this study collected data at only a single time point but used mediation analyses to examine the relations amongst variables. Due to this limitation, future longitudinal or experimental studies need to investigate how aggression mediates the relationship between popularity goals and victimization over time and via other possible causal pathways. For instance, although we assumed that goals may contribute to victimization, it is possible that victimization may increase desires for popularity. If youth perceive that other people treat them badly, it might increase their goals of wanting to be popular, perhaps because they believe that popular kids are not picked on. Ojanen et al. (2007) attempted to understand how adolescent goals change in different situational scenarios and found that kids were more likely to endorse agentic goals (i.e., goals related to social status and power) in a scenario in which they were being picked on compared to other scenarios. If an adolescent is picked on, they might desire more popularity because they think that it would make them more socially dominant or that having more friends would protect them. We suggest that future longitudinal research examine how victimization, aggression, and popularity goals are interrelated over time to better tease apart the temporal relations amongst these variables. Fourth, there may be other behaviors important to consider, beyond aggression. Although, popularity goals are negatively related to prosocial behaviors (Cillessen et al., 2014; Dawes & Xie, 2014; Dumas et al., 2019; van den Broek et al., 2016) not all youth who are popular are aggressive (Parkhurst & Hopmeyer, 1998). Additionally, Findley-Van Nostrand and Ojanen (2018) found that proactive (goal-oriented) prosocial behaviors were positively related to peer-perceived popularity. It may be worth examining prosocial behavior, and different types of prosocial

behaviors, as a mechanism through which popularity goals are related to victimization in future studies.

In conclusion, this study provides information about how aggression explains the association of popularity goals with victimization, how self-perceived popularity moderates this relationship and emphasizes the role of self-perceived popularity in adolescent aggressive behaviors. It appears as if girls who have goals for popularity are more likely to be relationally aggressive and also be victimized. Additionally, this effect is stronger for girls higher in popularity. Altogether, the findings imply that desires and concerns about popularity are important contributors to positive and negative peer group dynamics. It is worthwhile to understand goals and concerns about popularity in order to improve adolescents' behaviors and interactions in the peer group.

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