

Gender Differences in the Interpersonal Consequences of Early-Onset Depressive Symptoms

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Although research has identified gender differences in the interpersonal antecedents of depressive symptoms in youth, little is known about gender differences in the interpersonal consequences of depression. The goal of the present research was to examine gender differences in the influence of early-onset depressive symptoms on adolescent friendships and self-perceived peer acceptance. Third-graders ($N = 382$) participated in a multiwave longitudinal study through the sixth grade. Parents reported on youths' depressive symptoms. Youths reported on the quality of their perceived best friendship and their perceptions of peer acceptance. Reciprocal nominations of friendship were assessed through reports by youths and their classmates. Consistent with expectations, depressive symptoms contributed to subsequent declines in the number of reciprocal friendships and to poorer perceived friendship quality in girls but not in boys. Depressive symptoms predicted declines in subsequent perceived peer acceptance in both girls and boys. These findings contribute to theories regarding gender differences in relationships and gender-linked interpersonal processes in depression.

Theory and research on the emergence of gender differences in depression propose that gender-linked interpersonal characteristics and experiences

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heighten risk for depression in adolescent girls (for reviews, see Hankin & Abramson, 2001; Nolen-Hoeksema & Girgus, 1994; Rudolph, 2002). In particular, this line of research focuses on the idea that girls' reliance on close relationships for a sense of worth and emotional well-being places them at risk for developing depression during adolescence, a period characterized by interpersonal challenge and disruption. However, interpersonal models of depression emphasize a transactional association between depression and social impairment—that is, relationship difficulties precipitate depression, which then creates further social impairment (Joiner, Coyne, & Blalock, 1999). Unfortunately, relatively little is known about gender differences in the interpersonal consequences of depression. The goal of the present research was to examine the hypothesis that early-onset depressive symptoms would take a greater toll on girls' than boys' friendships and, more broadly, on girls' perceived peer acceptance during adolescence.

Gender Differences in the Consequences of Depressive Symptoms for Friendships

Research reveals significant differences in the friendships of girls and boys (for a review, see Rose & Rudolph, 2006). Based on these differences, we predicted that depressive symptoms would interfere more with the development and maintenance of close friendships in girls than in boys. Although the presence of gender differences in the nature of friendships does not necessarily mean that there will be gender differences in the influence of depressive symptoms on friendships, we hypothesized that this might be the case for several reasons.

Girls' friendships typically are characterized by greater exchange of emotional provisions than those of boys. For example, compared to boys, girls report that their friendships involve more closeness (Bukowski, Hoza, & Boivin, 1994), affection (Furman & Buhrmester, 1985), nurturance (Lempers & Clark-Lempers, 1993), and validation (Parker & Asher, 1993). Meeting the heightened emotional demands of girls' friendships (e.g., providing friends with affection and validation) likely requires a significant amount of emotional energy and competence. Symptoms of depression, such as a lack of motivation, negative affect, and fatigue, might interfere with girls' ability to mobilize the necessary resources for establishing and maintaining close friendships. Moreover, girls experience more stress and conflict in their peer relationships than do boys, particularly during adolescence (Rudolph & Hammen, 1999). Because youths with depressive symptoms demonstrate difficulty with emotion regulation and coping with social challenges (Rudolph, Hammen, & Burge, 1997; Zahn-Waxler, Klimes-Dougan, & Slattery, 2000), successfully negotiating these stressful aspects

of female friendships might present a challenge to girls with depressive symptoms. In contrast, typical male friendships likely place fewer emotional demands on boys and are characterized by lower levels of stress and conflict. Thus, they might be less disrupted by depressive symptoms.

Girls and boys also demonstrate different behavioral styles in their friendships. Girls spend more time engaged in social conversation and report more self-disclosure in their friendships than do boys (Ladd, 1983; Moller, Hymel, & Rubin, 1992; Rose, 2002), whereas boys engage in more organized group-based play than do girls (e.g., sports) (Moller et al., 1992; Zarbatany, McDougal, & Hymel, 2000). These gender-linked behavioral styles might create a context in which the disruptive influence of depressive symptoms is more apparent in the friendships of girls than boys. For example, because girls engage in more intimate social exchange, they might expect their friends to be very involved and to provide caring and supportive reactions to their disclosures. Thus, the social disengagement that is frequently associated with depression (Bell-Dolan, Reaven, & Petersen, 1993) might be interpreted as a lack of interest in, or concern about, the friend. Boys, in contrast, might be less aware or less concerned about social disengagement due to different contexts (e.g., group-based activities) and expectations (e.g., less of a focus on intimate exchange) of their friendships. Thus, depressive symptoms might lead to the dissolution of friendships over time in girls more than in boys.

Moreover, if depressed girls do engage in self-disclosure, these efforts might actually elicit negative responses from their friends. Specifically, depressive symptoms are associated with a negative focus on the self (Cole, Martin, Peeke, Seroczynski, & Fier, 1999; Pomerantz & Rudolph, 2003) and a tendency to engage in more negative statements during conversations with friends (Segrin & Flora, 1998). Although self-disclosure, and even corumination between friends (i.e., a tendency to excessively discuss problems in the context of a dyadic relationship), typically are associated with closer friendships (Rose, 2002), one-sided or excessive negative self-disclosure might instead alienate friends. Consistent with this possibility, individuals with a tendency toward excessive reassurance seeking (i.e., frequent efforts to seek reassurance about one's worth or likeability) (Potthoff, Holahan, & Joiner, 1995) and youths with negative self-views (Caldwell, Rudolph, Troop-Gordon, & Kim, 2004) create stress in their relationships. Resulting negative feedback from peers might cause depressed girls to construe their friendships in a more negative light.

A few studies support the idea that depressive symptoms undermine girls' friendships more than boys' friendships. For example, depression is associated more strongly with the generation of interpersonal stress and conflict in girls than in boys (Rudolph & Hammen, 1999; Rudolph et al., 2000).

Moreover, certain depression-linked interpersonal behaviors (excessive reassurance seeking, negative feedback seeking) predict deteriorating friendship quality in girls but not in boys (Borelli & Prinstein, 2006; Prinstein, Borelli, Cheah, Simon, & Aikins, 2005). Thus, over time, depressed girls might come to see their close friendships as having fewer positive features (e.g., support, intimacy, companionship) and more negative features (e.g., conflict, betrayal). Moreover, this poorer perceived friendship quality might lead to the dissolution of friendships. We predicted, therefore, that girls with early-onset depressive symptoms would show more declines in their number of reciprocated friendships and would ascribe less-favorable characteristics to their perceived best friendship than would boys during early adolescence.

Gender Differences in the Consequences of Depressive Symptoms for Perceived Peer Acceptance

There are several reasons to expect that depressive symptoms might lead youths to form negative perceptions of their acceptance within peer relationships. First, if depressed youths receive consistent negative feedback from friends and peers they might blame themselves for their social failures and experience declines in their perceived peer acceptance over time (Pomerantz & Rudolph, 2003). Second, depressed mood might lead to cognitive biases regardless of youths' actual level of social functioning. That is, theory and research suggest that mood colors people's self-perceptions (Schwarz & Clore, 1998), such that experiencing a depressed mood might foster negative views of the self. Third, the rumination associated with depression might lead depressed youths to dwell on negative aspects of their social experiences and themselves (Lyubomirsky, Caldwell, & Nolen-Hoeksema, 1998), leading them to question their social acceptance. Fourth, research suggests that depressed youths seek out feedback that confirms their derogatory self-views (e.g., Joiner, Katz, & Lew, 1997); this negative feedback might lead to further declines in their perceived peer acceptance. Consistent with the proposal that depression compromises youths' perceived peer acceptance, depressive symptoms are associated with subsequent maladaptive attributions about social failure (Pomerantz & Rudolph, 2003) and a tendency to underestimate one's social competence relative to one's actual performance (Cole, Martin, Peeke, Seroczynski, & Hoffman, 1998; Pomerantz & Rudolph, 2003).

Depressive symptoms might foster stronger declines in perceived peer acceptance in girls than in boys. Girls ruminate about their depressive symptoms (Rose, 2002) and about peer problems (Broderick, 1998) more than do boys; rumination is, in turn, associated with lower self-esteem (Broderick, 1998). This ruminative self-focus, coupled with greater actual impairment in their relationships, might cause depressed girls to view their social accept-

ance in a more negative light over time as compared to depressed boys. Thus, we predicted that early-onset depressive symptoms would more strongly predict deterioration in girls' than boys' estimations of their peer acceptance (e.g., perceptions of their ability to make friends and the extent to which they are liked by peers) from childhood to early adolescence.

Overview of the Present Study

A prospective longitudinal design was used to examine the hypothesis that, compared to boys, the occurrence of early-onset depressive symptoms would predict greater declines in girls' number of reciprocated friendships, less-favorable views of the quality of their perceived best friendship, and deterioration in perceived peer acceptance as girls enter early adolescence. A multi-informant approach was used. In particular, parents provided reports of youths' depressive symptoms. To control for the potential influence of co-occurring behavior problems on adolescent friendships and perceived peer acceptance, teachers provided reports of youths' externalizing symptoms. Youths and their peers reported on the presence of reciprocal friendships, and youths reported on friendship quality and perceived peer acceptance.

We chose to study the influence of depressive symptoms emerging in childhood on adolescent friendships and perceived peer acceptance for several reasons. Peer relationships might be especially vulnerable to disruption during the early adolescent period given the many social transitions that occur at this time. Notable among these transitions is the establishment of intimate, dyadic friendships (e.g., Brown, Dolcini, & Leventhal, 1997; Furman & Buhrmester, 1992). The experience of depressive symptoms during childhood might compromise the maturation of social competencies that form the basis for intimate relationships during adolescence, causing deterioration in both the number and the quality of youths' close friendships. Moreover, because adolescence is a stage during which youths establish an increasingly complex sense of identity and self-worth (Cole et al., 2001), based in part on an internalization of the judgments of peers (Harter, Stocker, & Robinson, 1996; Rudolph, Caldwell, & Conley, 2005), early-onset depressive symptoms might lead to declining perceptions of peer acceptance.

More specifically, because many gender-linked friendship patterns and stressful relationship experiences become particularly salient during adolescence (for a review, see Rose & Rudolph, 2006), girls' relationships might be at particular risk. We therefore anticipated that emotional scars (Rohde, Lewinsohn, & Seeley, 1990) left by early-onset symptoms would be more likely to undermine girls' than boys' friendships and sense of peer acceptance at this time. Early-onset depressive symptoms might be particularly detrimental to girls' adolescent relationships if they continue through the late

childhood years. Thus, we further examined the influence of chronic depressive symptoms during childhood (i.e., an accumulation of symptoms from the third grade through the fifth grade) on early adolescent friendships.

Method

Participants

Participants were 382 third-graders (190 boys, 192 girls; average age = 8.62 years) who were followed prospectively until they completed sixth grade (average age = 11.71 years). This sample was part of a larger longitudinal investigation that was conducted in multiple locations within the United States. Children and their families were recruited so that participants represented diverse geographic and socioeconomic strata. Approximately equal proportions of the sample were recruited from school districts in each of three types of locales: urban, suburban, and rural communities. Included in the sample were European American children (77.4%), African American children (17.3%), and children from Hispanic, mixed race, or other backgrounds (5.3%). Participants' family socioeconomic index (SEI) scores (Entwisle & Astone, 1994) ranged from 0 (unemployed) to 97.16, with a mean of 49.14 (SEI scores of 50 are assigned to administrative support staff, health technicians, and electronic sales personnel). Child assent and written informed parental consent were obtained prior to children's participation. Of the families who were invited to participate, 95% provided written informed consent. Data were also collected from children's classmates and parents. All of the children's classmates were invited to participate, but only those who assented and received written, informed parental consent took part in the study. The number of classmates contributing data ranged between 2,172 children and 3,030 children at each assessment.

Procedure

Measures were administered to children and their classmates, parents, and teachers in the spring (i.e., approximately March through May) of each school year. Participants received instructions from trained project staff about how to complete each measure prior to its administration, and written instructions were also provided on the protocols and response forms. Upon completion of the measures, children and their classmates were thanked and given a small gift (e.g., pencil, stickers), and parents and teachers received a cash honorarium.

Measures

Assessment timeline. Children were followed from third grade to sixth grade. The targeted predictor—depressive symptoms—was assessed in each grade. Externalizing symptoms were assessed in the third and sixth grades. All criterion variables were assessed at intervals subsequent to third-grade depressive symptoms. Children's number of reciprocated friendships and perceived peer acceptance were assessed in fourth and sixth grades, and scores from both time points were included in the models to estimate the link between early depressive symptoms and changes in these criteria over time. Data on the perceived quality of children's very best friendship were only available in sixth grade. Table 1 presents means and standard deviations for all of the measures by gender and for the total sample.

Depressive symptoms. The 113-item Child Behavior Checklist (CBCL) (Achenbach, 1991a) was completed by participants' parents. Typical scoring of the CBCL yields an anxiety/depression subscale, but recent research suggests that it is possible to utilize CBCL items to form valid subscales that focus more specifically on depressive symptoms (Connor-Smith & Compas, 2003; Lengua, Sadowski, Friedrich, & Fisher, 2001). Because of our interest in the specific consequences of depressive symptoms, we used the depression subscale developed by Lengua and colleagues (2001), which was based on a reorganization of the CBCL items to create a closer correspondence to clinical diagnoses as reflected in the Diagnostic and Statistical Manual (DSM-IV-TR) criteria (American Psychiatric Association, 2000). These new unidimensional subscales were created based on clinical expert ratings of items from the CBCL. Construct validity was established with confirmatory factor analyses, logistic regressions, and diagnostic efficiency analyses. Specifically, confirmatory factor analyses demonstrated adequate fit based on findings from one nonclinical sample and two clinical samples (CFIs = .90, .91, and .89, respectively; "s = .67, .81, and .81, respectively). Scores on the depressive symptom subscale differentiated between clinical and nonclinical samples. Moreover, this subscale demonstrated better sensitivity than the original anxiety/depression subscale in predicting clinical diagnoses of depression. Finally, when all of the newly created subscales were entered together in a regression, the depressive symptoms subscale was the only one that significantly predicted the presence of a clinical diagnosis of depression (Lengua et al., 2001). In the present study, two of the CBCL items that are included in the Lengua et al. depressive symptom scale (harms self/suicide, talks about killing self) were not administered. Thus, the depressive symptom subscale consisted of the

Table 1. Means and Standard Deviations for the Study Measures by Time of Measurement

Assessment Occasion	Males		Females		Total	
	M	SD	M	SD	M	SD
Third Grade						
Depressive symptoms	1.56	2.26	1.77	2.13	1.67	2.19
Fourth Grade						
Number of reciprocated friendships	-.13	.94	.14	.96	.01	.96
Perceived peer acceptance	2.99	.77	3.05	.72	3.02	.74
Third to Fifth Grade						
Chronic depressive symptoms	4.72	5.44	4.75	5.11	4.74	5.27
Sixth grade						
Depressive symptoms	1.54	2.22	1.49	1.88	1.51	2.06
Number of reciprocated friendships	-.22	1.02	.09	1.01	-.06	1.02
Perceived friendship quality						
Positive features	3.31 ^a	.82	3.78 ^a	.78	3.55	.83
Negative features	1.92	.87	1.80	.80	1.86	.83
Perceived peer acceptance	3.04	.71	3.17	.65	3.11	.68

Note. Scores for number of reciprocated friendships are reported in standardized form. ^aSignificant gender difference ($p < .05$).

remaining 10 items (e.g., "feels worthless," "unhappy, depressed") rated on a scale of 0 (not true or never true) to 2 (very true or often true).

In the present study, confirmatory factor analyses (CFAs) were conducted to validate the factor structure at each assessment. As recommended by Hu and Bentler (1999), criteria for judging model fit included the Comparative Fit Index ($CFI > .90$), the Root Mean Square Error of Approximation ($RMSEA < .08$), and the Standardized Root Mean Square Residual ($SRMR < .08$). CFAs were conducted separately for the third-, fourth-, fifth-, and sixth-grade scores for a model in which all 10 items loaded on a single factor. This model fit the data adequately at each time of measurement (third grade: $\chi^2[30] = 38.4$, ns , $CFI = .98$, $RMSEA = .03$, $SRMR = .04$; fourth grade: $\chi^2[30] = 69.56$, ns , $CFI = .90$, $RMSEA = .06$, $SRMR = .05$; fifth grade: $\chi^2[30] = 60.40$, ns , $CFI = .94$, $RMSEA = .05$, $SRMR = .04$; and sixth grade: $\chi^2[30] = 61.04$, $p < .01$, $CFI = .94$, $RMSEA = .05$, $SRMR = .04$). The standardized factor loadings ranged from .18 to .99 ($M = .64$, .61, .73, and .83 for third, fourth, fifth, and sixth grades, respectively). Four depressive symptom scores were created—one for each grade level—by averaging ratings of the 10 items at each assessment. Alphas for the grade 3, 4, 5, and 6 symptom scores were .68, .67, .75, and .70, respectively. A chronic

depressive symptom score was computed by adding the symptom scores for grades 3, 4, and 5. Because depressive symptom scores clustered at the lower end of the scale (see Table 1) and were moderately positively skewed for girls and boys at each time of assessment, a log transform was applied to these scores prior to analysis.

Number of reciprocated friendships. A friendship nomination measure was used to assess children's participation in reciprocated friendships within their classrooms. Children and their classmates were asked to nominate up to five classmates with whom they were close friends. Children were considered to be involved in a reciprocated friendship if the classmate they nominated as a close friend also nominated them in return (Ladd, Kochenderfer, & Coleman, 1997; Parker & Asher, 1993). A measure of the number of reciprocated friends each child possessed was created by summing the number of reciprocated close friend nominations each child received and standardizing these scores by classroom. The reliability and validity of this measure have been established in past research (Ladd, 2005). The number of reciprocated friendships possible for each child ranged from -2.21 to 2.59.

Perceived friendship quality. Children's perceptions of the quality of their very best friendship were assessed with an abbreviated version of the Parker and Asher (1993) Friendship Quality Questionnaire (FQQ). Participants were asked to think about their relationship with their very best friend and then use a 5-point scale to rate items from each of the following FQQ subscales: validation and caring (5 items), conflict resolution (3 items), conflict and betrayal (5 items), help and guidance (5 items), companionship and recreation (3 items), and intimate exchange (5 items). In contrast to the original FQQ, the number of items used per subscale was reduced to conserve administration time.

Because initial analyses indicated that subscale scores for all but the conflict and betrayal subscale were positively and substantially correlated, a CFA was conducted on the 26 items to determine whether the FQQ could be reduced to two subscales. In this analysis, items belonging to the five positive friendship features subscales served as indicators of a one latent variable (positive features), and items belonging to the conflict and betrayal subscale served as indicators of another latent variable (negative features). Error covariances were estimated among items belonging to the same latent variable. This model ($\chi^2[257] = 483.16, p < .01, CFI = .95, RMSEA = .05, SRMR = .05$) fit the data significantly better $\Delta\chi^2[3] = 155.63, p < .01$ than did a six-factor model that conformed to the FQQ's conceptual structure ($\chi^2[260] = 638.79, p < .01, CFI = .92, RMSEA = .06, SRMR = .05$). Thus, items that corresponded to the two-factor structure were averaged to create two scores: positive features ($\alpha = .94$) and negative features ($\alpha = .79$). Sim-

ilar global positive and negative dimensions have been used in prior research with the FQQ (e.g., Brengden, Vitaro, Turgeon, & Poulin, 2002).

Perceived peer acceptance. Children completed the perceived peer acceptance subscale of the Harter (1985) Self-Perception Profile for Children. Children rated themselves on six items that tapped perceived acceptance in friendships and peer relationships (e.g., "Some kids would like to have a lot more friends but other kids have as many friends as they want"; "Some kids wished that more people their age liked them but other kids feel that most kids their age do like them"). First, children were asked to consider which of two hypothetical peers they most resembled: one who was doing well in the relevant domain or one who was not. Next, children were asked to rate whether their resemblance to the hypothetical peer was "really true for me" or "sort of true for me," yielding item scores that ranged from 0 to 4, with higher scores representing greater perceived peer acceptance.

To determine whether items from the perceived peer acceptance subscale could be aggregated into a single measure, a CFA was conducted on a measurement model in which the six items served as manifest indicators of a single latent variable. Initial results showed that one perceived peer acceptance item did not produce consistent and significant lambdas across the two times of measurement. To achieve factorial invariance, this item was eliminated, and additional CFAs were conducted using the remaining five items as indicators. This single latent variable model adequately fit the fourth-grade data ($\chi^2[3] = .09, p < .99, CFI = 1.00, RMSEA = .00, SRMR = .01$) and the sixth-grade data ($\chi^2[3] = .92, p < .82, CFI = 1.00, RMSEA = .00, SRMR = .01$). In both analyses, standardized factor loadings ranged from .37 to .74 ($M = .50$). Children's ratings were averaged across the five items to create perceived peer acceptance scores in fourth grade ($\alpha = .69$) and sixth grade ($\alpha = .75$).

Externalizing symptoms. Teachers completed the 113-item Teacher Report Form (TRF; Achenbach, 1991b). Scores were created for children's externalizing symptoms using the 20-item Aggressive Behavior subscale and the 13-item Delinquent Behavior subscale of the TRF. Ratings from the two subscales were summed to create externalizing symptom scores in third grade ($\alpha = .96$) and sixth grade ($\alpha = .96$).

Results

Data Analytic Strategy and Results of Preliminary Analyses

Preliminary analyses were conducted to examine patterns of missing data. Missing values were estimated via multiple imputation (see Schafer & Olsen, 1998). Gender differences in children's number of reciprocated friendships, friendship quality, and perceived peer acceptance were examined with multi-

variate and univariate analyses of variance. Hypotheses about the predictive links between children's early and chronic depressive symptoms and their subsequent interpersonal functioning were evaluated with path analyses for observed variables (see Jöreskog & Sorböm, 1993). In these path models, error covariances were permitted for indicators of the same construct measured at different time points (e.g., early and later depressive symptoms) and for measures that were obtained from the same informant at the same time point (see Cole & Maxwell, 2003). The criteria for judging model fit included the *CFI*, the *RMSEA*, and the *SRMR*. The links between early and chronic depressive symptoms and subsequent number of reciprocated friendships and perceived peer acceptance were estimated separately from the links between depressive symptoms and perceived friendship quality because it was possible to predict changes in the former criteria but not in the latter (i.e., number of reciprocated friendships and perceived peer acceptance were measured at two time points: fourth and sixth grades).

Estimation of missing values via multiple imputation.

Attrition across the three-year period of investigation was minimal, with 98% of the 382 participants remaining in the sample from third grade to sixth grade. Constraints on data collection (e.g., absences, moves, dropouts, etc.) caused 2.99% of the data points within the entire longitudinal data set to be missing. The percentage of missing data by measure across all times of administration ranged from 0% to 4.71%.

Missing data were estimated via NORM (Schafer, 1999), a multiple imputation program in which missing multivariate data are simulated $m > 1$ times. Three imputations were generated ($n = 3$) because for data sets containing 10% or fewer missing data points, it has been established that three imputations yield sufficient estimation efficiency (i.e., 97%) (Rubin, 1987; Schafer, 1999). Mplus 3.01 was used to estimate each of the hypothesized models from the multiple imputed data sets, and to average parameter estimates and obtain combined standard errors (Muthén & Muthén, 1998–2004).

Gender Differences in Friendship Number and Quality and Perceived Peer Acceptance

Gender differences in children's number of reciprocated friendships and perceived peer acceptance were analyzed with 2 (gender: females, males) by 2 (grade: 4th, 6th) repeated-measure ANOVAs. For number of reciprocated friendships, a significant gender effect was found ($F[1, 380] = 12.71, p < .01$), with girls ($M = .11, SD = .98$) having more friends than boys ($M = -.17, SD =$

.98). The grade and gender by grade effects were nonsignificant ($F_s[1, 380] < 1.28$, ns). For perceived peer acceptance, the gender and gender by grade effects were nonsignificant, but the grade effect was significant ($F[1, 380] = 5.25$, $p < .05$). Children's perceived peer acceptance scores were, on average, higher in sixth grade than in fourth grade (see Table 1). Gender differences in positive and negative perceived friendship features were analyzed with a one-way (gender: females, males) MANOVA. Results indicated a significant gender multivariate effect ($F[2, 379] = 16.08$, $p < .001$), which was accompanied by a significant gender univariate effect only for positive friendship features ($F[1, 380] = 20.61$, $p < .001$). Girls' perceptions of positive friendship features ($M = 3.78$, $SD = .78$) were significantly higher than those of boys ($M = 3.31$, $SD = .82$). In sum, results suggested that girls have more reciprocated friends and report higher levels of positive features in their closest friendships than do boys but do not differ in perceived negative friendship features or perceived peer acceptance.

Relations among the study variables. Table 2 reports correlations among the study measures by gender. For both girls and boys, depressive symptoms tended to correlate negatively with number of reciprocated friendships and perceived peer acceptance, although not all of the correlations were significant (particularly associations with fourth-grade reciprocated friendships in girls). A more consistent pattern of gender differences was observed in the associations among depressive symptoms and children's perceived friendship quality in sixth grade. For girls, all three depressive symptom indices correlated negatively with perceived positive friendship features and positively with perceived negative friendship features. For boys, none of the depressive symptom indices was significantly correlated with perceived positive or negative friendship features.

For girls, perceived peer acceptance was significantly associated in the expected direction with both their number of reciprocated friendships and the perceived quality of their friendships, both concurrently and over time. For boys, perceived peer acceptance was moderately associated with their number of reciprocated friendships, both concurrently and over time, but was not associated with the quality of their friendships. Children's depressive symptoms from third to sixth grade were moderately stable for both girls and boys.

Early and Chronic Depressive Symptoms Predicting Changes in Children's Number of Reciprocated Friendships and Perceived Peer Acceptance

The path model depicted in Figure 1a was used to evaluate the hypothesis that early depressive symptoms would be more strongly associated with declines

Table 2. Correlations among the Measures

	DEP3	DEP6	SUM DEP3-5	NRF4	NRF6	PPA4	PPA6	POS FRF6	NEG FRF6
DEP3		.52**	.84**	-.08	-.20**	-.23**	-.24**	-.27**	.12
DEP6	.43**		.63**	-.13	-.17*	-.13	-.14	-.14	.25**
SUM DEP3-5	.86**	.57**		-.05	-.26**	-.16*	-.23**	-.18*	.23**
NRF4	-.24**	-.28**	-.28**		.20**	.30**	.19**	.01	-.21**
NRF6	-.12	-.20**	-.17*	.34**		.16*	.26**	.22**	-.11
PPA4	-.15*	-.09	-.20**	.35**	.41**		.50**	.25**	-.17*
PPA6	-.24**	-.15*	-.20**	.31**	.42**	.48**		.24**	-.16*
POSFRF6	.09	.05	.10	.06	.33**	.01	.13		-.27**
NEGFRF6	.03	.06	.01	-.02	-.06	-.12	.03	-.12	

* $p < .05$, ** $p < .01$.

Note. Coefficients above the diagonal are for girls; coefficients below the diagonal are for boys. DEP3 = Grade 3 depressive symptoms; DEP6 = Grade 6 depressive symptoms; SUMDEP3-5 = sum of depressive symptoms from grades 3 through 5; NRF4 = Grade 4 number of reciprocated friendships; NRF6 = Grade 6 number of reciprocated friendships; PPA4 = Grade 4 perceived peer acceptance; PPA6 = Grade 6 perceived peer acceptance; POSFRF6 = Grade 6 positive friendship features; NEGFRF6 = Grade 6 negative friendship features.

in number of reciprocal friendships and perceived peer acceptance in girls than in boys during early adolescence. The major hypothesized paths included those from third-grade depressive symptoms to sixth-grade number of reciprocated friendships and perceived peer acceptance. Because we anticipated that children's relationship experiences (i.e., participation in reciprocal friendships) might influence their self-views in relationships (i.e., perceived peer acceptance) and their self-views in relationships might influence their relationship experiences (Caldwell, Rudolph, Troop-Gordon & Kim, 2004; Ladd & Troop-Gordon, 2003), we also included paths from fourth-grade number of reciprocal friendships to sixth-grade perceived peer acceptance and fourth-grade perceived peer acceptance to sixth-grade number of reciprocal friendships. Finally, the stabilities of depressive symptoms from third grade to sixth grade, number of reciprocated friendships from fourth grade to sixth grade, and perceived peer acceptance from fourth grade to sixth grade were included in the model. Inclusion of these paths allowed us to estimate the predictive contributions of early depressive symptoms after adjusting for concurrent (sixth-grade) depressive symptoms and prior (fourth-grade) number of reciprocated friendships and perceived peer acceptance. Correlated errors were included among depressive symptoms, number of reciprocated friendships, and perceived peer acceptance in sixth grade.

A multigroup comparison approach (Muthén & Muthén, 1998–2004) was used to compare the fit of two competing models, one in which all paths were constrained to be equal across gender (the constrained model) and another in which the paths from early depressive symptoms to subsequent number of reciprocated friendships and perceived peer acceptance were freed while all others were constrained to be equal across gender (the partially unconstrained model). The path from fourth-grade perceived peer acceptance to sixth-grade number of reciprocated friendships was also estimated separately by gender in the partially unconstrained model because preliminary analyses revealed that this lagged association was stronger for boys than for girls. A chi-square difference test was used to determine whether the partially unconstrained model fit the data better than did the constrained model.

Results showed that the fit statistics for the constrained model were adequate ($\chi^2[15] = 30.03, p < .01, CFI = .95, RMSEA = .07, SRMR = .08$). The model fit was marginally significantly improved ($\Delta\chi^2[3] = 7.39, p < .07$) for the partially unconstrained model ($\chi^2[12] = 22.65, p < .05, CFI = .96, RMSEA = .07, SRMR = .07$). The results for the latter model (see Figure 1a; coefficients for boys are in parentheses) revealed that the path from third-grade depressive symptoms to sixth-grade reciprocated friendships was negative and significant for girls but was nonsignificant for boys. Contrary to the expectation that depressive symptoms would predict declines in

perceived peer acceptance more strongly in girls than in boys, this path was negative and significant for both genders. Although the path from fourth-grade number of reciprocated friendships to sixth-grade perceived peer acceptance was positive and significant for both girls and boys, the path from fourth-grade perceived peer acceptance to sixth-grade reciprocated friendships was significant only for boys.

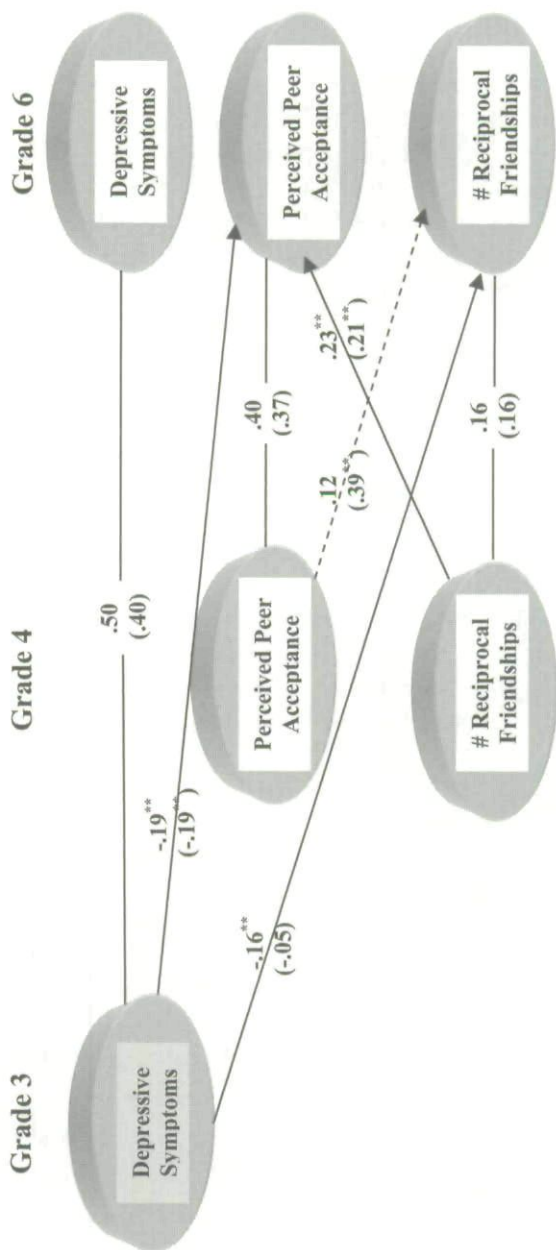
These same unconstrained and constrained models were also estimated using the chronic depressive symptom scores (see Figure 1b). Adequate fit statistics were obtained for both the constrained ($\chi^2[15] = 32.12, p < .01, CFI = .95, RMSEA = .08, SRMR = .08$) and unconstrained ($\chi^2[12] = 23.91, p < .05, CFI = .97, RMSEA = .07, SRMR = .07$) models. However, the unconstrained model fit the data significantly better than did the constrained model ($\Delta\chi^2[3] = 8.20, p < .05$). The path coefficients (see Figure 1b; coefficients for boys are in parentheses) were similar, albeit somewhat stronger, to those obtained with third-grade depressive symptoms. That is, (a) the path from chronic depressive symptoms to sixth-grade reciprocated friendships was negative and significant for girls but nonsignificant for boys, (b) chronic depressive symptoms predicted declines in perceived peer acceptance for both girls and boys, and (c) the path from fourth-grade number of reciprocated friendships to sixth-grade perceived peer acceptance was positive and significant for both girls and boys, but the path from fourth-grade perceived peer acceptance to sixth-grade reciprocated friendships was significant only for boys.

Because it is possible that the observed links between early depressive symptoms and changes in children's number of reciprocal friendships and perceived peer acceptance were confounded by co-occurring externalizing symptoms (i.e., aggressive and delinquent behavior), these same models were reestimated after adjusting for third-grade and sixth-grade externalizing symptoms. Results showed that third-grade externalizing symptoms did not predict changes in the number of reciprocal friendships or perceived peer acceptance for girls ($\beta = -.04, ns$, and $\beta = .00, ns$, respectively) or for boys ($\beta = -.06, ns$, and $\beta = .01, ns$, respectively). Moreover, inclusion of these paths did not significantly reduce the magnitude of the path coefficients between early and chronic depressive symptoms and changes in children's number of reciprocal friendships or perceived peer acceptance.

Early and Chronic Depressive Symptoms Predicting Poorer Friendship Quality within Children's Perceived Best Friendships

The path model depicted in Figure 2a was used to evaluate the hypothesis that early depressive symptoms would be more strongly associated with

(a) Early Depressive Symptoms



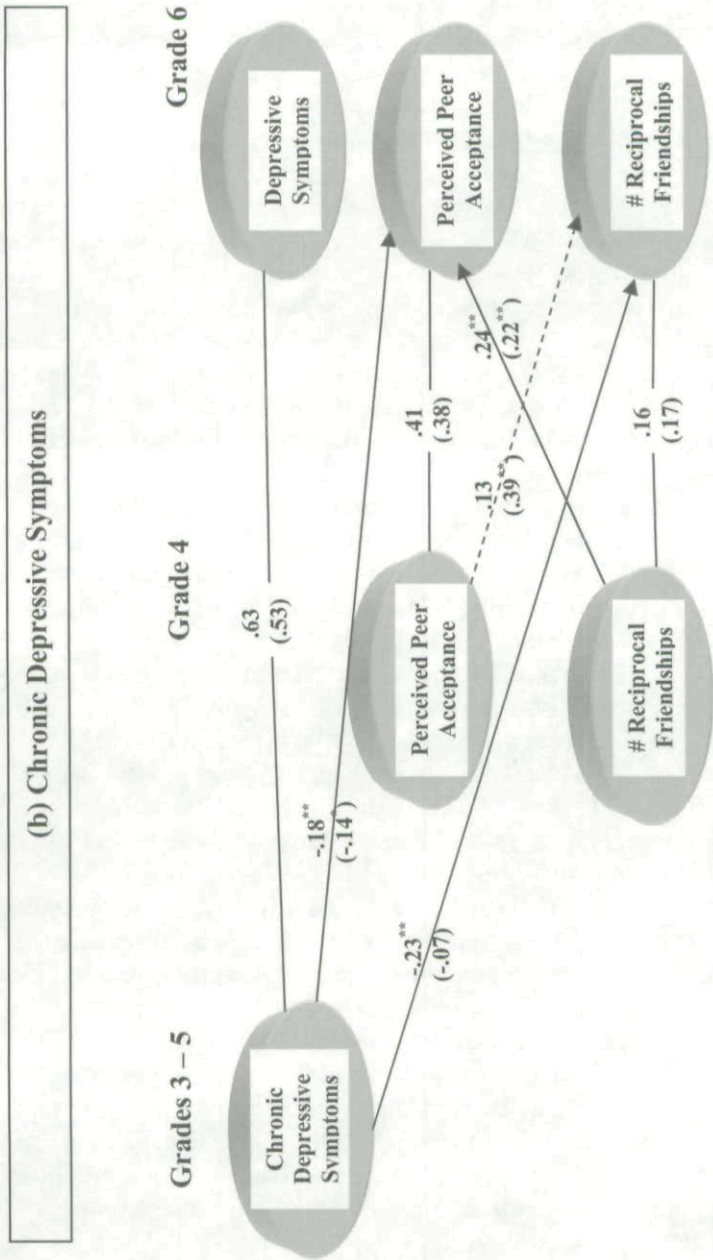


Figure 1. Path analyses predicting sixth-grade number of reciprocated friendships and perceived peer acceptance from (a) third-grade depressive symptoms, adjusting for fourth-grade number of reciprocated friendships and perceived peer acceptance and sixth-grade depressive symptoms, and (b) third-grade through fifth-grade chronic depressive symptoms, adjusting for fourth-grade number of reciprocated friendships and perceived peer acceptance.

girls' than boys' perceptions of poorer friendship quality (i.e., fewer positive features and more negative features) during early adolescence. Paths were included from third-grade depressive symptoms to positive and negative friendship features. The stability of depressive symptoms from third grade to sixth grade was also included in the model so that it was possible to estimate the predictive contributions of early depressive symptoms after adjusting for concurrent (sixth-grade) depressive symptoms. Correlated errors were included among all of the measures in sixth grade.

Once again, a multigroup comparison approach was used to compare the fit of two competing models, one in which all paths were constrained to be equal across gender (the constrained model) and another in which the paths from early depressive symptoms to subsequent friendship quality were freed (the unconstrained model). A chi-square difference test ($\Delta\chi^2[2] = 13.00, p < .001$) revealed that the unconstrained model ($\chi^2[5] = 10.29, p < .07, CFI = .96, RMSEA = .07, SRMR = .04$) fit the data significantly better than did the constrained model ($\chi^2[7] = 23.29, p < .01, CFI = .88, RMSEA = .11, SRMR = .08$). Moreover, the path coefficients obtained for the unconstrained model generally conformed to expectations (see Figure 2a; coefficients for boys are in parentheses). The path from third-grade depressive symptoms to sixth-grade positive friendship features was negative and significant for girls but was positive and nonsignificant for boys. Contrary to expectations, the path from third-grade depressive symptoms to sixth-grade conflict and betrayal was nonsignificant for both girls and boys.

These same unconstrained and constrained models were also estimated using the chronic depressive symptom scores (see Figure 2b). Adequate fit statistics were obtained for both the constrained ($\chi^2[7] = 15.69, p < .03, CFI = .96, RMSEA = .08, SRMR = .08$) and unconstrained ($\chi^2[5] = 4.75, p < .44, CFI = 1.00, RMSEA = .00, SRMR = .03$) models. However, the unconstrained model fit the data significantly better than did the constrained model ($\Delta\chi^2[2] = 10.94, p < .01$). The path coefficients (see Figure 2b; coefficients for boys are in parentheses) were similar to those obtained with third-grade depressive symptoms with one exception: the path from chronic depressive symptoms to negative friendship features was significant for girls. As before, the path from chronic depressive symptoms to sixth-grade positive friendship features was negative and significant for girls but was nonsignificant for boys.

Again, to control for the possibility that co-occurring externalizing symptoms accounted for the observed links, these same models were reestimated after adjusting for third-grade and sixth-grade externalizing symptoms. Results showed that third-grade externalizing symptoms did not predict either positive or negative perceived friendship features for girls ($\beta = .07, ns$, and $\beta = .03, ns$, respectively) or for boys ($\beta = .07, ns$, and $\beta = -.04, ns$, respectively). Moreover, inclusion of these paths did not significantly

reduce the magnitude of the path coefficients between early and chronic depressive symptoms and later perceived friendship quality.

Discussion

Despite the wealth of research identifying gender differences in the interpersonal precursors of depressive symptoms, far less is known about gender differences in the interpersonal *consequences* of depressive symptoms, particularly those occurring in early childhood. We anticipated that gender differences in the relationships of girls and boys would lead early-onset depressive symptoms to create more of an interpersonal scar (Rohde et al., 1990) in girls than in boys. In support of this idea, results suggested that depressive symptoms in childhood were more of a liability for girls' than boys' friendships during early adolescence. However, depressive symptoms had an equally negative influence on girls' and boys' later perceived peer acceptance. This pattern emerged for both early and chronic symptoms, although findings were somewhat stronger when considering the accumulation of symptoms across third through fifth grades.

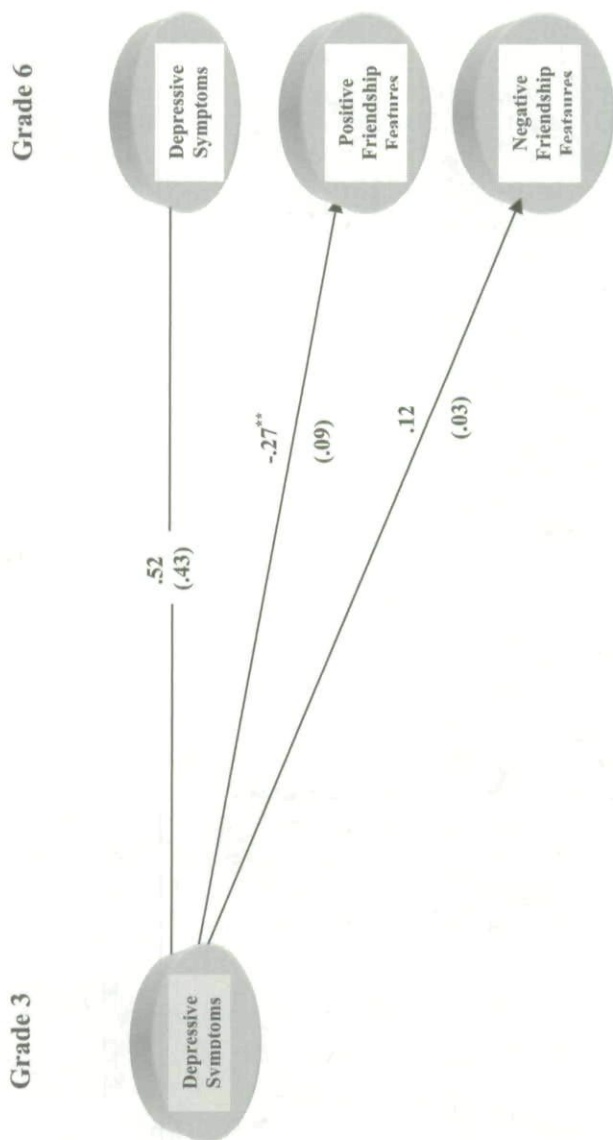
Gender Differences in Friendship and Perceived Peer Acceptance

Consistent with prior research (e.g., Brengden et al., 2002; Bukowski et al., 1994; Parker & Asher, 1993; for a review, see Rose & Rudolph, 2006), girls had significantly more reciprocal friendships and reported more positive features in their perceived best friendships than did boys. Girls and boys did not differ in their level of perceived peer acceptance, but girls' perceived peer acceptance was tied to both the number and quality of their friendships, whereas boys' perceived peer acceptance was tied only to their number of reciprocal friendships. This pattern of associations suggests that having friendships is equally important to girls' and boys' relational sense of self (indeed, the correlations for boys were even stronger than those for girls) but that girls value intimacy and supportiveness in their dyadic relationships more than boys, resulting in a stronger link between the quality of their friendships and their perceived peer acceptance.

Consequences of Depressive Symptoms for Friendships

Consistent with hypotheses, third-grade symptoms and the accumulation of symptoms across third through fifth grades predicted declines in the number of reciprocated friendships and poorer perceived friendship quality in girls but not in boys during early adolescence, even after adjusting for concurrent levels of depressive symptoms. These findings contribute to a small body of

(a) Early Depressive Symptoms



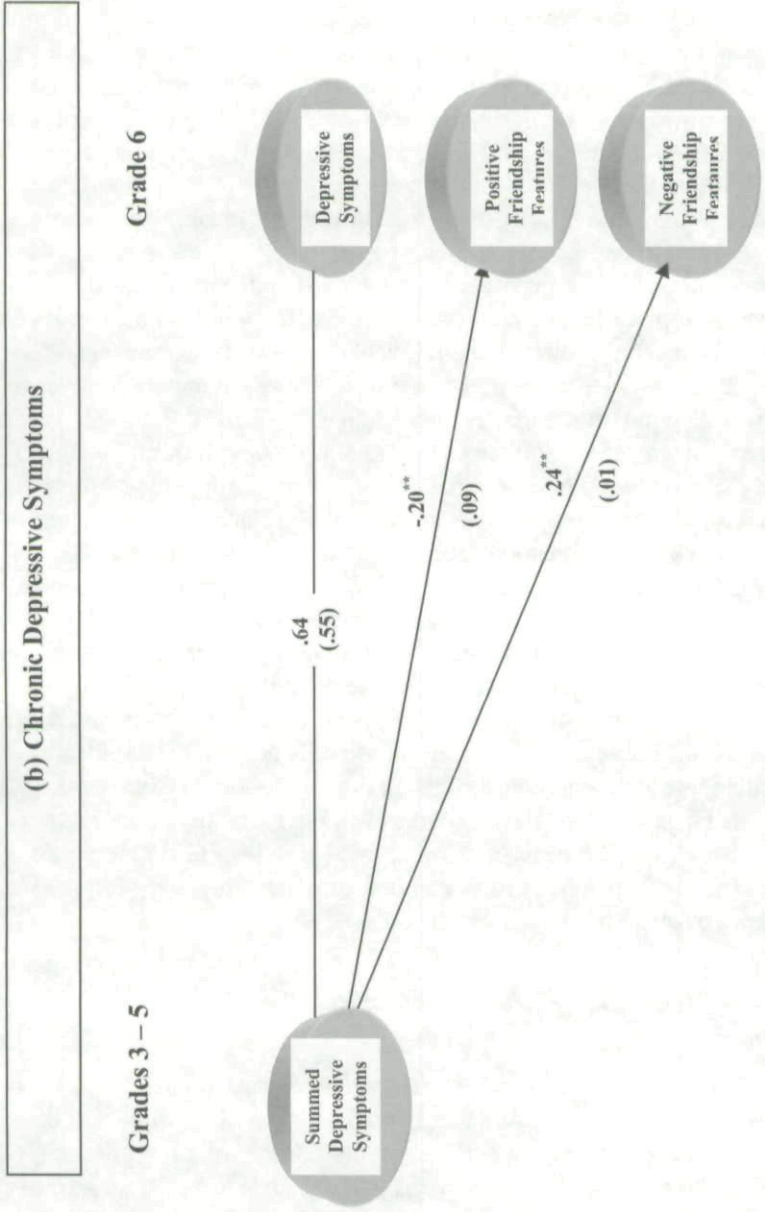


Figure 2. Path analyses predicting sixth-grade friendship quality from (a) third-grade depressive symptoms, adjusting for sixth-grade depressive symptoms, and (b) third-grade through fifth-grade chronic depressive symptoms.

longitudinal research suggesting that depressive symptoms in youths interfere with close friendships over time (e.g., Prinstein et al., 2005) but refine this finding by suggesting that depressive symptoms have a more adverse impact on girls' than boys' friendships.

Why do depressive symptoms compromise the friendships of girls but not boys? We proposed that gender differences in the nature of friendships would lead depressive symptoms to interfere more with the formation and maintenance of high-quality friendships in girls than in boys. Compared to boys' friendships, girls' friendships are characterized by higher levels of self-disclosure, trust, validation, and closeness, particularly during adolescence. These qualities of friendships might have paradoxical effects on girls' reactions to depressive symptoms (e.g., social disengagement, negative affect) and depression-linked behaviors (e.g., negative self-disclosures, excessive reassurance seeking) in their friends. On the one hand, one might expect that girls would be more supportive and sympathetic to emotional difficulties in their friends than boys, making them less likely to criticize or abandon their friends when distressed. Indeed, the friends of depressed female adolescents report that they provide more emotional support to their friends than do the friends of nondepressed adolescents (Daley & Hammen, 2002).

On the other hand, the emotional and behavioral difficulties of girls with depressive symptoms might make it particularly challenging for them to engage in the behaviors that are necessary to develop and maintain the emotionally laden friendships characteristic of females (e.g., providing emotional support and nurturance, negotiating conflict). Moreover, because girls expect trust and closeness in their friendships, friends of depressed girls might become frustrated and alienated if their friends fail to be pacified by their attempts to provide reassurance and support. Likewise, if self-disclosure about problems becomes too excessive or too self-focused, the friendships of girls with depressive symptoms might begin to deteriorate. Consistent with the idea that depression-linked behaviors elicit more negative responses from the friends of girls than of boys, research indicates that reassurance seeking predicts friends' perceptions of deteriorating friendship quality in girls but not in boys over time (Prinstein et al., 2005).

Consequences of Depressive Symptoms for Perceived Peer Acceptance

Contrary to expectations, depressive symptoms contributed equally to declines in perceived peer acceptance in girls and boys. Thus, although boys' friendships in adolescence were not adversely affected by earlier depressive symptoms, boys with depressive symptoms still developed more negative

perceptions of their social acceptance over time. This pattern of findings might result from the context in which we assessed self-perceptions. Specifically, perceived peer acceptance included perceptions of acceptance at both the dyadic (i.e., friendship) and peer-group level. Perhaps although depressive symptoms do not undermine boys' friendships, they do undermine their status in the broader peer group. Indeed, the depression-linked behavior of negative feedback seeking predicts lower social preference but not deteriorating friendship quality in boys over time (Borelli & Prinstein, 2006). It might be that the context of interpersonal vulnerability in depressed girls and boys differs, with girls' vulnerability occurring at the dyadic level and boys' vulnerability occurring at the group level. Future research will need to include comprehensive assessments of self-perceptions within both dyadic and broader peer-group relations, such that the consequences of depressive symptoms for self-perceptions at each level can be independently assessed.

Conclusions and Limitations

This study expands on theory and research regarding girls' interpersonal vulnerability to depression by demonstrating that depressive symptoms have more adverse interpersonal consequences for girls than for boys. However, several limitations to the present research should be noted. First, because the study did not include a measure of friendship quality prior to sixth grade, we were unable to adjust for earlier friendship quality. Thus, we can only conclude that depressive symptoms predict poorer, rather than declines in, friendship quality in adolescence. Yet, the fact that this longitudinal association held even after adjusting for covariation with concurrent depressive symptoms in adolescence suggests that the poorer perceived friendship quality in adolescents with early-onset symptoms was not merely due to their current mood state.

Second, we examined the influence of depressive symptoms only on self-reported friendship quality. Although the use of parent reports of depressive symptoms avoids the possibility that the link between symptoms and friendship quality was due purely to a mono-informant bias, it is still possible that depressive symptoms are differentially associated with self- and friend-reported friendship quality (e.g., Brengden et al., 2002; Prinstein et al., 2005). Such a differential pattern of associations could have implications for understanding interpersonal processes in depression and therefore warrants further investigation.

Third, this research focused on parent reports of depressive symptoms. Parents and children likely have differing perspectives on depression (for a review, see Rudolph & Lambert, in press). Indeed, research suggests that

youths and their parents provide unique and valid sources of information in the assessment of internalizing symptoms (Hope et al., 1999). In younger children, parent reports of depressive symptoms have been found to be more reliable than self-reports, perhaps because younger children are not fully able to reflect on their internal feelings and related experiences (Edelbrock, Costello, Dulcan, Kalas, & Conover, 1985). Moreover, the measure used in this study provides a purer assessment of depressive symptoms than many self-report measures, which tend to include symptoms not specifically associated with depression. Nevertheless, it would be helpful to examine whether similar findings emerge using self-reports of depressive symptoms.

Fourth, this study examined gender differences in the interpersonal outcomes of depressive symptoms but not the processes through which symptoms disrupt friendships and perceived peer acceptance. Although it is important to first document the link between symptoms and subsequent social dysfunction, the next step will be to identify the processes that account for these negative interpersonal consequences of depression. Some research already has begun to investigate possible relevant processes during adolescence (e.g., Borelli & Prinstein, 2006; Prinstein et al., 2005). Future research will need to examine whether the same or alternative processes account for the adverse impact of early-onset depressive symptoms.

Despite these qualifications, the present research has critical implications for understanding gender differences in the emotional antecedents of friendship as well as for understanding the interpersonal processes associated with the emergence and maintenance of gender differences in depression. That is, early and cumulative depressive symptoms during childhood disrupt girls' friendships in adolescence. This disruption likely exacerbates ongoing depressive symptoms and puts girls at risk for future depression.

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