

# Adolescent Girls' Interpersonal Vulnerability to Depressive Symptoms: A Longitudinal Examination of Reassurance-Seeking and Peer Relationships

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A transactional, interpersonal framework involving adolescents' reassurance-seeking and peer experiences may be useful for understanding the emergence of gender differences in depression prevalence during the adolescent transition. Sociometric nominations of peer acceptance/rejection and ratings of friendship quality provided by adolescents and their friends were used to measure peer experiences among 6th–8th-grade adolescents ( $N = 520$ ) over 3 annual time points. After controlling for age and pubertal development, significant but small prospective effects offered mixed support for hypotheses: (a) depressive symptoms and negative peer relations predicted increasing levels of girls' reassurance-seeking; (b) initial levels of reassurance-seeking and depressive symptoms predicted deteriorating friendship quality among girls and low friendship stability, respectively; and (c) reassurance-seeking combined with poor peer experiences predicted increases in girls' depressive symptoms.

*Keywords:* peer relations, friendships, depression

The transition to adolescence represents a critical developmental period associated with increased vulnerability to depressive symptoms, especially among girls (Cyranowski, Frank, Young, & Shear, 2000; Hankin & Abramson, 2001; Rudolph & Hammen, 1999). Although the prevalence of depression is fairly consistent across gender in childhood, depressive symptoms begin to increase dramatically between the ages of 12 and 13 years; by late adolescence, girls are two to three times more likely to experience depression than boys (Hankin et al., 1998; Nolen-Hoeksema & Girgus, 1994). Theory and research have offered at least three

complementary approaches toward understanding the emergence of gender differences in depression prevalence. Each of these approaches has been characterized by a developmental psychopathology perspective, emphasizing reciprocal transactions between adolescents and their environment that may contribute to depression.

For example, biological and social-biological models suggest that either because of direct effects of gonadal hormone (i.e., estrogen) circulation on the presentation of negative affect or interaction effects between biological changes and psychosocial experiences (e.g., pubertal timing issues, increased challenges and demands associated with pubertal maturation), adolescent girls' pubertal transition may produce unique vulnerabilities to life stressors and depressive symptoms during the adolescent transition (e.g., Angold, Costello, & Worthman, 1998; Cyranowski et al., 2000; Ge, Conger, & Elder, 2001). Cognitive models of adolescent depression adapted from the adult psychopathology literature suggest that attributional style is an important predictor of youth depressive symptoms (Gladstone & Kaslow, 1995; Joiner & Wagner, 1995), particularly when combined with a life stressor (Abela, 2001; Garber, Keiley, & Martin, 2002; Hankin, Abramson, & Siler, 2001; Nolen-Hoeksema, Girgus, & Seligman, 1992; Prinstein & Aikins, 2004). Research suggests that girls are more likely than boys to experience, encode, and negatively interpret life events, suggesting greater cognitive vulnerability to depression (Hankin & Abramson, 2001).

A third approach for understanding the emergence of gender differences in depression prevalence, also adapted from the adult

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literature, has emphasized interpersonal experiences as potential contributors to and consequences of depressive symptoms. As compared with other approaches in this area, interpersonal theories have been examined relatively infrequently among adolescents. However, this perspective has been supported preliminarily by findings indicating strong associations between depressive symptoms and perceived interpersonal stress among girls in particular (e.g., Rudolph & Hammen, 1999), as well as results from developmental research highlighting girls' unique interpersonal challenges and experiences during this same transition period. This study offers a stringent longitudinal examination of an interpersonal model of depressive symptoms, with a focus on reassurance-seeking as a specific behavior that may be associated with deleterious psychological and interpersonal (i.e., peer) consequences among adolescent girls.

Developmental theory and research indicate that both boys and girls experience significant increases in peer contact and concomitant decreases in parental monitoring during the adolescent transition (Brown, 1990). With greater autonomy to experiment with new social roles and experiences among peers, adolescents establish peer relationships that involve more sophisticated interpersonal behaviors than in childhood. Investment in feedback from peers increases dramatically. Peers become primary sources of social support during times of distress, adolescents' susceptibility to peer influence increases, and through reflected appraisal and social comparison, adolescents use peer experiences as primary bases for identity and self-concept development (Felson, 1985; Harter, Stocker, & Robinson, 1996; Hergovich, Sirsch, & Felinger, 2002).

This seems especially true for girls. Girls exhibit a stronger relational orientation and greater affiliative needs in adolescence as compared with boys (Cyranowski et al., 2000; Nolen-Hoeksema & Girgus, 1994; Rudolph, 2002). Accordingly, adolescent girls establish peer relationships characterized by greater levels of intimacy and emotional support than boys (Buhrmester & Furman, 1987; Furman & Buhrmester, 1992), and girls place greater importance on security and support within these relationships. Unfortunately, this orientation also may be partially responsible for girls' difficulties with interpersonal stressors (Greene & Larson, 1991). Beginning in adolescence, girls report more negative interpersonal stress than boys, particularly in the peer domain (Benenson & Christakos, 2003; Rudolph & Hammen, 1999). Girls also report greater levels of negative affect and depression associated with interpersonal stress than do boys (Rudolph & Hammen, 1999; Rudolph et al., 2001). In sum, there is compelling evidence to suggest that interpersonal experiences occurring during this developmental transition, particularly among peers, may be uniquely associated with girls' increased vulnerability to depressive symptoms.

In addition to prior work regarding *interpersonal stressors*, findings regarding reciprocal associations between adolescent depressive symptoms and the quality of *peer or family relationships* also offer some preliminary support for the importance of interpersonal theories; however, findings have been mixed. Findings based on external informants' reports of interpersonal experiences are rare; however, research suggests that adolescents' own report of low social support from peers is sometimes prospectively associated with adolescents' depressive symptoms, particularly among girls (cf. Slavin & Rainer, 1990; Stice, Ragan, & Randall, 2004);

other studies have revealed similar effects for the role of perceived support from family members (Sheeber, Hops, Alpert, Davis, & Andrews, 1997; Windle, 1992). Reciprocally, some prior studies have suggested that girls' depressive symptoms are prospectively associated with deteriorations in perceived support from peers (Stice et al., 2004) and sometimes from family members (cf. Sheeber et al., 1997; Slavin & Rainer, 1990).

Yet, relatively little is known regarding specific depression-related social behaviors that may be associated with girls' negative interpersonal outcomes or depressive symptoms during the adolescent transition. One of these depression-related social behaviors, identified within the adult literature, pertains to individuals' continued requests for reassurance from others (Joiner, Alfano, & Metalsky, 1992; Joiner, Katz, & Lew, 1999; Joiner & Metalsky, 2001; Joiner & Schmidt, 1998; Potthoff, Holahan, & Joiner, 1995). Coyne (1976) and Joiner and colleagues (Joiner & Metalsky, 2001; Joiner, Metalsky, Katz, & Beach, 1999) suggested that in an effort to substantiate their sense of self-worth and verify that others care about them, initially nondepressed, dysphoric individuals seek reassurance from others. However, the reassurance they receive is doubted as insincere, disingenuous, or perhaps motivated by pity, thus leading the individual to seek additional reassurance. The reassurance again is discounted, contributing to increased dysphoria, a need for more reassurance, and so on. Ultimately, a pattern emerges in which the individuals' reassurance-seeking becomes irritating, leading to actual alienation and rejection by others and ironically reifying the individuals' initial doubts regarding the stability of their relationships and their own self-worth. Consistent with stress-generation theories of depression (e.g., Hammen, 1991), reassurance-seeking behaviors may be associated with girls' greater tendencies to experience dependent (i.e., self-contributed), interpersonal stressors, particularly when combined with high levels of depressive symptoms (Joiner & Coyne, 1999).

Although this model offers a number of testable hypotheses that may be relevant for understanding gender differences in adolescent depression prevalence, gender differences in reassurance-seeking rarely have been examined. Moreover, little is known regarding reassurance-seeking among adolescents or its associations with depressive symptoms and interpersonal relationships as reported by external informants. Preliminary support from one prior investigation of reassurance-seeking within a sample of 68 psychiatric inpatients aged 7–17 years offers some evidence to suggest that reassurance-seeking can be assessed reliably among youth and is at least concurrently associated with a proxy measure of self-reported interpersonal difficulties (i.e., selected items from the Children's Depression Inventory; Kovacs, 1992; Joiner, 1999). By examining reassurance-seeking specifically during the critical developmental transition associated with increases in girls' depressive symptoms, the current longitudinal study allowed for a test of prospective associations during the period in which the initial iterations of the depression–interpersonal rejection cycle are presumed to begin.

This study examined reassurance-seeking as a predictor of peer experiences. Consistent with developmental theory and methods, peer- and self-reports of peer experiences at the dyadic and group levels were examined (Hartup, 1996). Dyadic peer experiences included adolescents' participation in reciprocal (i.e., mutually selected) best friendships, friendship stability, and the positive and negative qualities of these friendships over time as reported by adolescents and their friends. Because adolescents likely seek

reassurance primarily from close friends, it was anticipated that reassurance-seeking would be prospectively associated principally with deteriorations in dyadic friendship quality over time. Peer relations at the group level (i.e., peer-reported acceptance or rejection) also were examined to demonstrate that the effects of reassurance-seeking on peer functioning were domain specific. To examine incremental prospective effects of reassurance-seeking on adolescents' interpersonal experiences, we controlled youths' age and pubertal development in all analyses. In addition, given the significant association between reassurance-seeking and depressive symptoms revealed previously (Joiner, 1999) and the established associations between depression and peer experiences reported in past research (e.g., Panak & Garber, 1992), it was important to examine the unique effects of reassurance-seeking on dyadic or group peer relations before and after controlling for depressive symptoms in all analyses.

Depressive symptoms also were examined as a moderator in analyses predicting interpersonal difficulties from reassurance-seeking. Consistent with the cyclical nature of the interpersonal model, and with stress-generation theories of depression, it was hypothesized that the association between reassurance-seeking and peer experiences would be stronger in magnitude when accompanied by high levels of depressive symptoms.

Gender was explored as a second moderator in these analyses. Theory and research regarding adolescent girls' interpersonal experiences led to conflicting predictions, however. On the one hand, the strong emphasis placed on interpersonal experiences and the high levels of intimacy and emotional support within female friendships suggest that girls' reassurance-seeking behaviors might be less likely to alienate peers and thus less strongly associated with negative peer experiences. On the other hand, it may be that these same features of adolescent girls' relational orientation contribute to social norms among adolescent girls that influence the threshold at which reassurance-seeking behaviors are considered excessive or irritating. Because girls place an especially high premium on trust and emotional security within peer relationships, they may be more likely to perceive an adolescent's reassurance-seeking behaviors as aberrant and antithetical to valued features of the relationship, particularly if these requests for reassurance become excessive. Thus, as a violation of social norms, reassurance-seeking may be associated particularly with negative outcomes in the peer context for girls.

A second implied tenet of the interpersonal model pertains to potential antecedents of reassurance-seeking behavior. Specifically, individual differences in the frequency of reassurance-seeking may be predicted by preexisting social difficulties or perceived social stressors, particularly when combined with preexisting levels of dysphoria. As the first prospective, longitudinal investigation of adolescents' reassurance-seeking, this study offered a unique opportunity to examine this hypothesis. Antecedents of reassurance-seeking have been examined in only one prior study of college students (Joiner, Katz, & Lew, 1999), with evidence suggesting that students' report of negative life events was significantly associated with increases in reassurance-seeking over a period of 3 weeks. In the current study, it was hypothesized that rejection within the overall peer group, as an indicator of global social difficulties, and adolescents' reports of negative dyadic peer experiences would be associated longitudinally with reassurance-seeking. Again, this may be the case particularly for girls (i.e.,

because of increased interpersonal concerns and relational orientation) and for adolescents with high levels of depressive symptoms; thus, moderators again were examined in these analyses; age and pubertal development also were controlled.

A final hypothesis examined in this study pertained to the prediction of adolescents' depressive symptoms. Prospective effects of reassurance-seeking on depressive symptoms have been examined only in longitudinal studies among college students. Findings have revealed either no effects (Shahar, Joiner, Zuroff, & Blatt, 2004), a direct effect of reassurance-seeking (Davila, 2001), or an effect for reassurance-seeking as part of a diathesis-stress model, in combination with individuals' perceptions of a stressor (e.g., Joiner & Schmidt, 1998; Potthoff et al., 1995). The cyclical interpersonal model proposes that the deleterious effects of reassurance-seeking behaviors may escalate over time and development. Depressive symptoms in this study therefore were examined at two longitudinal time points (i.e., 11 and 22 months postbaseline). It was anticipated that reassurance-seeking might be associated most strongly with depressive symptoms at later stages in development (i.e., at Time 3), and for girls in particular. Both a main effect of reassurance-seeking and a diathesis-stress effect (i.e., in combination with perceived peer difficulties) were examined as prospective predictors of boys' and girls' depressive symptoms.

## Method

### Participants

Participants included 520 children and adolescents (50% female) in Grades 6 (35%), 7 (30%), and 8 (36%) at the outset of the study. The ethnic composition of the sample included 87% White/Caucasian, 2% African American, 4% Asian American, 2% Latino American, and 6% of participants from mixed ethnic backgrounds. Participants were enrolled in public schooling within a city of fairly homogeneous middle-class socioeconomic status. According to neighborhood and school records, average adult per-capita income was approximately \$30,220, and 11% of children were eligible for free or reduced-price lunch.

At Time 1, all sixth through eighth grade students were recruited for participation. Consent forms were returned by 92% of families ( $n = 784$ ); of these, 80% of parents gave consent for their child's participation ( $n = 627$ ; 74% of the total population). Students who were absent on one of the days of testing ( $n = 10$ ), provided incomplete data ( $n = 15$ ), or refused to participate ( $n = 4$ ) were excluded from analyses, yielding a final sample of 598 participants at Time 1. A total of 520 (87%) of these participants completed testing 11 months later (i.e., Time 2), when students were in Grades 7–9. Attrition was due to participants' moving away from the area ( $n = 36$ ), absenteeism ( $n = 7$ ), incomplete data ( $n = 30$ ), and refusal to continue participation ( $n = 5$ ). No significant differences were revealed for any of the constructs measured in this study between adolescents who participated at both time points, adolescents who participated at only one time point, or adolescents with missing data, with one exception. Adolescents who participated at both time points had higher levels of peer acceptance ( $M = .17$ ,  $SD = .89$ ) than adolescents who did not participate at Time 2 ( $M = -.30$ ,  $SD = .93$ ),  $t(603) = 4.45$ ,  $p < .001$ .

One set of analyses involved data from a third time point (i.e., Time 3), collected approximately 11 months after Time 2. A total of 438 adolescents (84% of Time 2 participants; 73% of Time 1 participants) were available for testing at Time 3. Attrition between Time 2 and Time 3 was due mostly to students who moved away from the area ( $n = 35$ ) or who were unavailable during testing ( $n = 47$ ). Attrition analyses revealed no significant differences on any study variables between adolescents with and

without available data at Time 3. This subsample of 438 adolescents was used only for one set of analyses involving Time 3 data; the sample of 520 adolescents with Time 1 and 2 data was used for all remaining analyses to maximize statistical power. However, to ensure that results were not affected by differences in sample size, we recomputed all analyses reported below using only the 438 adolescents with data at all three time points, yielding an identical pattern of results.

## Measures

Measures of reassurance-seeking, peer acceptance/rejection, and friendship quality were administered at Time 1 and Time 2. Adolescents' date of birth was used to calculate age at Time 1. Pubertal development also was measured at Time 1. Depressive symptoms were measured at all three time points.

**Reassurance-seeking.** The Reassurance-Seeking Scale initially was developed by Joiner and Metalsky (1995, 2001) for use with adults and was later adapted for use with children and adolescents (Joiner, 1999). Adolescents rate each of four questions (e.g., "I always need to ask my parents and friends if they like me"; "I always need to ask my parents and friends if they care about me"; "Sometimes when I ask people if they like me, they tell me to stop asking"; "Sometimes when I ask people if they like me, they get mad") on a 3-point scale (0–2) indicating the extent to which each statement accurately describes their behavior. A mean score was computed in this sample, with higher scores indicating higher levels of reassurance-seeking.

Psychometric support for this scale has been promising. Substantial evidence has suggested that this measure assesses a unitary construct of reassurance-seeking; all items load onto a single factor, and each item correlates similarly with outcome measures (e.g., depression, interpersonal functioning; Joiner, Alfano, & Metalsky, 1999; Joiner & Metalsky, 1995, 2001). Internal consistency in past research has been adequate ( $\alpha$ s between .77 and .95; Joiner, 1999; Joiner, Alfano, & Metalsky, 1999). Several researchers have reported support for construct, criterion, and discriminant validity of this measure, including significant associations with actual reassurance-seeking behavior observed in the lab (Joiner, Alfano, & Metalsky, 1999) and discriminant associations in predicting depressive symptoms (Davila, 2001). Similar results were revealed in the present study. All items loaded onto a single factor, each item correlated similarly with other constructs in this study, and internal consistency was similar to past research (Time 1,  $\alpha = .71$ ; Time 2,  $\alpha = .75$ ).

**Depressive symptoms.** The Children's Depression Inventory (CDI; Kovacs, 1992) includes 27 items that assess cognitive and behavioral depressive symptoms. The CDI assesses all but one (psychomotor agitation) of the *Diagnostic and Statistical Manual of Mental Disorders (DSM-IV*; American Psychiatric Association, 1994) criteria for a major depressive episode and is currently the most widely used self-report measure of depressive symptoms (Compas, 1997). A three-item response format is used, scored 0–2, in which children endorse statements that best describe their level of depressive symptoms in the previous 2 weeks. A mean score was computed, with higher scores indicating higher levels of depressive symptoms. Good psychometric properties have been reported for the CDI as a reliable and valid index of depressive symptoms (Saylor, Finch, Spirito, & Bennett, 1984); it can be used with youth between the ages of 7 and 18 years (Kazdin, 1990).

To obtain a measure of depressive symptoms that minimized overlap with other constructs under investigation, we omitted five CDI items from analyses. Specifically, factor analyses of the CDI at Times 1, 2, and 3 each revealed a four-item factor with statements pertaining to interpersonal and externalizing behaviors (i.e., "I am bad all of the time"; "I get into fights all the time"; "I never do what I am told"; "I do not want to be with people at all"; see Kovacs, 1992, and Rudolph, Lambert, Clark, & Kurlakowsky, 2001, for similar results). These items and one additional interpersonal item ("I do not have many friends") were omitted from analyses to

construct a purer index of depressive symptoms (Rudolph et al., 2001). A mean score was computed across the remaining 22 items at each time point. Internal consistency for these remaining items was high (Time 1,  $\alpha = .87$ ; Time 2,  $\alpha = .86$ ; Time 3,  $\alpha = .88$ ).

**Pubertal development.** The Pubertal Development Scale (Petersen, Crockett, Richards, & Boxer, 1988) includes five items for boys (e.g., growth spurt, body hair, skin change, voice change, facial hair) and girls (e.g., growth spurt, body hair, skin change, breast growth, menarche) measuring gender-specific physical changes associated with maturation. Adolescents respond to each item using a 4-point Likert scale (1 = *not started*; 4 = *seems completed*). As in past research (McBride, Paikoff, & Holmbeck, 2003), responses for girls' menarche were coded (1 = *no*; 4 = *yes*) to create a scale comparable to other items, and a mean score across all five items was computed for both girls ( $\alpha = .75$ ) and boys ( $\alpha = .79$ ), with higher scores indicating more advanced pubertal development.

**Peer acceptance/rejection.** A sociometric peer nomination assessment was conducted to obtain a measure of adolescents' peer acceptance/rejection (Coie & Dodge, 1983). Adolescents in this school were organized in academic teams, each roughly twice the size of a traditional academic classroom. Adolescents each were presented with an alphabetized roster of all academic teammates and were asked to select an unlimited number of peers that they "liked the most" and "liked the least." The order of alphabetized names on this roster was counterbalanced (e.g., Z through A) to control for possible effects of alphabetization on nominee selection. A sum of the number of nominations each child received for each was item computed and standardized within each academic team. A difference score between standardized "like most" and "like least" nominations then was computed and restandardized for a measure of *social preference*, with higher scores indicating greater peer acceptance and lower scores indicating greater peer rejection (Coie & Dodge, 1983). Using this procedure, it was possible to obtain an ecologically valid measure of peer acceptance/rejection that was not influenced by adolescents' self-report. Data from sociometric nominations are widely considered the most reliable and valid indices of acceptance and rejection among peers (Coie & Dodge, 1983).

**Friendship selection and friendship quality.** A peer nomination procedure also was used to measure adolescents' participation in reciprocal best friendships in a manner consistent with prior research (Parker & Asher, 1993). Adolescents were asked to select an unlimited number of their "closest friends" from a roster of all grademates as well as to select from this list a single "best friend." A total of 383 participants (75%) at Time 1 and 365 participants (71%) at Time 2 selected a best friend who also was a participant in the study, allowing for a comparison of nominations and coding of friendship reciprocity and stability. Chi-square and *t* test analyses revealed no significant differences on any study variables between adolescents who did versus did not select a participant best friend.

All adolescents were asked to complete seven subscales from the Network of Relationships Inventory (NRI; Furman, 1998) to describe the quality of their relationship with the adolescent they selected as a best friend. Each narrow-band NRI subscale assessed (i.e., Companionship, Criticism, Intimacy, Reliable Alliance, Conflict, Emotional Support, and Dominance) includes three items describing behaviors that occur within the context of the relationship. Adolescents respond to each item using a 5-point Likert scale. Because adolescents in reciprocal best friendships both provided reports of friendship quality on the NRI that pertained to the same relationship, it was possible to use best friends' reports as a measure of friendship quality that relied on an external informant, yielding friend- and self-reported measures of friendship quality.

As would be expected from past research (Furman, 1998), factor analyses of the individual narrow-band subscales of friendship quality using an oblique rotation revealed similar factor structures at both Time 1 and Time 2 for two broad-band factors: positive (companionship, intimacy, reliable alliance, emotional support) and negative friendship quality (criticism, dominance, conflict; all eigenvalues > 1). At each time point, all factor loadings exceeded .70, and no significant cross-loadings (> .35) were observed. Broad-band scales were

computed as means of the items from narrow-band subscales to create four measures of friend-reported friendship quality (i.e., positive and negative friendship quality at Time 1 and Time 2) and four corresponding measures of self-reported friendship quality. Furman (1998) reported adequate internal consistency for the subscales and broadband scales of the NRI ( $\alpha > .80$ ) as well as satisfactory test-retest reliability over 1 month ( $r$ s between .66 and .70). Internal consistency for NRI items in the current sample was .92 and .93 for positive friendship quality and .79 and .83 for negative quality at Times 1 and 2, respectively.

Positive friendship qualities are assessed on the NRI as aspects of the relationship, while negative friendship qualities are assessed as features of the friendship partner (e.g., "How often does your best friend criticize you?"). Friend- and adolescent-reported perspectives on positive friendship qualities yield parallel reports of the same relationship (e.g., levels of companionship and intimacy within the relationship); however, friend- and adolescent-reports of negative friendship qualities indicate the extent to which the friendship partner exhibits negative friendship behaviors.

## Results

### Preliminary Analyses

Means and standard deviations for all primary variables are presented in Table 1. *T* tests examining gender differences revealed greater levels of Time 1 social preference and positive friendship quality at Times 1 and 2 for girls as compared with boys and greater levels of depressive symptoms for girls as compared with boys at Time 2 and Time 3 only (see Table 1).

Pearson correlations were conducted to examine bivariate associations among all study variables (see Table 2). Associations among depressive symptoms and reassurance-seeking at each time point were significant but mild, suggesting that each represented a distinct construct and reducing concerns of multicollinearity in subsequent analyses. At both time points, results revealed significant correlations between self- and friend-reported measures of

positive friendship quality but showed lower correspondence between reporters of negative friendship qualities.

### Prediction of Peer Relations at the Dyadic Level

Five measures of dyadic peer relations were examined in this study including friendship stability over time, positive and negative dyadic friendship quality reported by adolescents' best friends, and positive and negative friendship quality reported by adolescents themselves.<sup>1</sup>

*Friendship stability.* Of the 383 adolescents at Time 1 for whom reciprocity data were available, 182 adolescents (49%) were part of a reciprocal best friendship at Time 1. Of these, 101 (55%; 53 girls, 48 boys) remained in a stable friendship with the same friend over time. A logistic regression was conducted to examine Time 1 predictors of friendship stability between Time 1 and Time 2 ( $n = 182$ ). For this and all subsequent analyses, all continuous predictor variables used to compute interaction effects were centered to reduce multicollinearity. Using a dichotomously coded friendship stability indicator (yes-no) as a dependent variable, main effects of Time 1 reassurance-seeking, and Time 1 depressive symptoms were entered on an initial step. This first step also controlled for gender, age, and adolescents' Time 1 pubertal development.<sup>2</sup> All possible two-way product terms were entered on a second step to examine gender and depression as potential moderators. A three-way interaction between reassurance-seeking, gender, and depressive symptoms was entered on a final step. Although this overall model was not statistically significant,  $\chi^2(9) = 11.05$ ,  $ns$  ( $-2 \log$  likelihood = 225.16), a significant main effect suggested that higher levels of adolescents' depressive symptoms were associated with a lower likelihood of friendship stability,  $b$  ( $SE$ ) =  $-1.24$  (0.62), Wald = 4.04,  $p < .05$ . Subsequent analysis of mean differences revealed a lower level of depressive symptoms among adolescents with stable friendships ( $M = .25$ ,  $SD = .19$ ), as compared with adolescents with unstable friendships ( $M = .35$ ,  $SD = .30$ ),  $t(122.10) = 2.43$ ,  $p < .05$ .

Table 1  
Means (and SDs) for Primary Variables at Times 1, 2, and 3  
( $n = 520$ )

Time point and variable	Boys	Girls	$t(518)$
<b>Time 1</b>			
Reassurance-seeking	1.13 (0.29)	1.16 (0.32)	< 1
Depressive symptoms	0.30 (0.25)	0.33 (0.30)	1.70
Age	12.68 (0.98)	12.63 (0.91)	< 1
Pubertal development	2.27 (0.64)	2.78 (0.70)	8.49***
Social preference	0.01 (0.96)	0.26 (0.82)	2.28*
<b>Dyadic friendship quality, self-report</b>			
Positive	3.21 (0.86)	3.86 (0.81)	8.79***
Negative	1.55 (0.44)	1.53 (0.47)	< 1
<b>Time 2</b>			
Reassurance-seeking	1.11 (0.26)	1.16 (0.32)	1.79
Depressive symptoms	0.23 (0.22)	0.28 (0.27)	1.95*
Social preference	0.12 (1.08)	0.16 (0.83)	< 1
<b>Dyadic friendship quality, self-report</b>			
Positive	2.96 (0.81)	3.74 (0.76)	11.19***
Negative	1.54 (0.50)	1.48 (0.44)	1.41
<b>Time 3 (<math>n = 438</math>)</b>			
Depressive symptoms	0.21 (0.21)	0.33 (0.29)	$t(436) = 5.08$ ***

\*  $p < .05$ . \*\*\*  $p < .001$ .

<sup>1</sup> Associations among reassurance-seeking, depressive symptoms, and adolescents' friendship reciprocity also were explored. In two logistic regression analyses predicting friendship reciprocity (yes-no) at Times 1 and 2, only gender emerged as a significant predictor after controlling for main effects and interaction effects of reassurance-seeking, gender, depressive symptoms, age, and pubertal development. At both time points, girls were more likely to be involved in reciprocated friendships at Time 1 (53.2% of girls at Time 1; 62.1% of girls at Time 2) as compared with boys (42.1% of boys at Time 1; 36.1% of boys at Time 2).

<sup>2</sup> In addition to an examination of age and pubertal development main effects, interaction effects were initially included in all study analyses to examine pubertal timing (Age  $\times$  Pubertal Development), gender as a moderator of both age (Gender  $\times$  Age) and pubertal development effects (Gender  $\times$  Pubertal Development), and a three-way interaction to examine gender moderation of pubertal timing (Gender  $\times$  Age  $\times$  Pubertal Development). Each of these interaction effects failed to reach statistical significance in any analyses predicting depressive symptoms, reassurance-seeking, or peer relations at the group or dyadic levels (all  $\Delta R^2$ s  $\leq .01$ ,  $ns$ ). In addition, no significant interactions emerged between pubertal development and measures of interpersonal functioning (i.e., low levels of social preference, positive friendship quality, and high levels of negative friendship quality) as predictors of depressive symptoms or reassurance-seeking (all  $\Delta R^2$ s  $\leq .01$ ,  $ns$ ). Simplified models omitting these interaction effects have been presented throughout for clarity of presentation.

Table 2  
Bivariate Associations Among Primary Variables

Time point and variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
<b>Time 1</b>																
1. Age	—															
2. Pubertal development	.51	—														
3. Reassurance-seeking	-.05	-.07	—													
4. Depressive symptoms	.04	.09	.25	—												
5. Social preference	.01	.07	-.04	-.20	—											
6. Positive friendship quality (self)	-.04	.18	.08	.06	.09	—										
7. Negative friendship quality (self)	-.06	-.01	.23	.25	-.07	.15	—									
8. Positive friendship quality (friend)	.07	.15	.08 <sup>a</sup>	.07 <sup>a</sup>	.21 <sup>a</sup>	.38 <sup>a</sup>	.06 <sup>a</sup>	—								
9. Negative friendship quality (friend)	.04	.00	.12 <sup>a</sup>	.16 <sup>a</sup>	.02 <sup>a</sup>	.06 <sup>a</sup>	.18 <sup>a</sup>	.10 <sup>a</sup>	—							
<b>Time 2</b>																
10. Reassurance-seeking	.03	.03	.30	.23	-.12	.03	.15	.06 <sup>a</sup>	-.02 <sup>a</sup>	—						
11. Depressive symptoms	.12	.13	.14	.69	-.16	.07	.19	-.07 <sup>a</sup>	.06 <sup>a</sup>	.19	—					
12. Social preference	.07	.05	-.08	-.20	.76	.05	-.09	.08 <sup>a</sup>	-.05 <sup>a</sup>	-.11	-.15	—				
13. Positive friendship quality (self)	.03	.26	-.02	.02	.16	.63	.03	.36 <sup>c</sup>	-.07 <sup>c</sup>	-.04	.05	.13	—			
14. Negative friendship quality (self)	.04	.05	-.01	.22	-.05	.05	.28	.11 <sup>c</sup>	-.08 <sup>c</sup>	.10	.25	-.02	.10	—		
15. Positive friendship quality (friend)	.16	.23	.02 <sup>b</sup>	.13 <sup>b</sup>	.05 <sup>b</sup>	.32 <sup>c</sup>	-.13 <sup>c</sup>	.62 <sup>c</sup>	-.17 <sup>c</sup>	-.04 <sup>b</sup>	-.08 <sup>b</sup>	-.01 <sup>b</sup>	.34 <sup>b</sup>	.05 <sup>b</sup>	—	
16. Negative friendship quality (friend)	-.09	.04	-.03 <sup>b</sup>	.20 <sup>b</sup>	.00 <sup>b</sup>	-.13 <sup>c</sup>	.01 <sup>c</sup>	.15 <sup>c</sup>	.35 <sup>c</sup>	.08 <sup>b</sup>	.05 <sup>b</sup>	.04 <sup>b</sup>	.07 <sup>b</sup>	.14 <sup>b</sup>	-.03	—
<b>Time 3</b>																
17. Depressive symptoms <sup>d</sup>	.08	.16	.13	.62	-.13	.13	.19	.04	.05	.18	.70	-.11	.10	.18	.01	.05

<sup>a</sup> Includes 182 adolescents with reciprocal best friendships at Time 1,  $r \geq |.14|, p < .05$ . <sup>b</sup> Includes 178 adolescents with reciprocal best friendships at Time 2,  $r \geq |.15|, p < .05$ . <sup>c</sup> Includes 101 adolescents with reciprocal best friendships that were stable over time,  $r \geq |.19|, p < .05$ . <sup>d</sup> Includes 438 adolescents,  $r \geq |.10|, p < .05$ . All other correlations include 520 adolescents,  $r \geq |.09|, p < .05$ .

*Dyadic friendship quality, friend-report.* Analyses of adolescents' dyadic friendship quality over time included those participants who were in reciprocal best friendships that were stable between Time 1 and Time 2 ( $n = 101$ ). In other words, adolescents had selected the same best friend at both time points, and both times adolescents' best friend reciprocated the nomination. Thus, data on friendship quality were available from both adolescents and their best friends regarding the same relationship over time.

Hierarchical multiple regressions were used to examine friend-reported positive and negative friendship qualities over time. Using Time 2 positive and negative friendship quality as dependent variables in two separate regressions, respectively, we entered corresponding Time 1 measures of friendship quality on an initial step, followed by main effects of gender, age, pubertal development, depressive symptoms, and reassurance-seeking entered on a second step.<sup>3</sup> Two-way interactions were entered on a third step to examine gender and depressive symptoms as moderators, and a three-way interaction term was entered on a fourth step (see Table 3).

Analyses revealed a significant Reassurance-Seeking  $\times$  Gender interaction effect for the prediction of positive friendship quality (see  $\beta$  step statistics in Table 3; unique effect  $R^2 = .06, p < .05$ ). Holmbeck's (2002) most recent guidelines for post hoc probing of significant moderational effects were used to explore the nature of this interaction. This included (a) computation of new product terms at different levels of the moderator variable (i.e., for girls and for boys), (b) computation of simple slope estimates by including these new product terms in "reduced" regression models (i.e., including covariates and only significant predictors), and (c) examining the statistical significance of these slopes at different levels of the moderator variable. Results revealed a significant slope for girls,  $b = -1.24, \beta = -.39, p < .01$ , indicating that greater levels of Time 1 reassurance-seeking were associated with lower levels of positive friendship quality at Time 2, after controlling for initial levels of positive friendship quality. In contrast, the slope for boys was not statistically significantly different from zero,  $b = -.22, \beta = -.07, ns$ .<sup>4</sup> As might be expected, no significant effects were revealed for friend-reported negative friendship quality, indicating that adolescents' depressive symptoms and reassurance-seeking behavior were not associated with their friends' perceptions that adolescents had exhibited more negative relationship behaviors (e.g., criticism, conflict) over time.

*Dyadic friendship quality, self-report.* A similar set of analyses was conducted to examine reassurance-seeking as a predictor of self-reported friendship quality over time within the full sample of participants ( $n = 520$ ). Other than the use of self-reported friendship quality variables at Time 2 as dependent measures as well as corresponding measures of self-reported friendship quality at Time 1, analyses were identical to those presented in Table 3. Two significant effects were revealed both for the prediction of positive and negative friendship quality. For positive friendship quality, results indicated that higher levels of Time 1 pubertal development and gender (female) were significantly associated with increases in adolescents' Time 2 perceived positive friendship quality after controlling for Time 1 friendship quality, age, depressive symptoms, and reassurance-seeking (unique effects  $R^2$ s = .001, .04;  $\beta$ s = .07, .22; and  $ps < .05$ , respectively). For negative friendship quality, higher levels of Time 1 depressive symptoms and gender (male) were associated with higher levels of Time 2 negative friendship quality, after controlling for Time 1 friendship

quality, age, pubertal development, and reassurance-seeking (unique effects  $R^2$ s = .02, .01;  $\beta$ s = .16,  $-.09$ ; and  $ps < .05$ , respectively). In other words, depressive symptoms were associated with adolescents' perceptions that best friends had engaged in more negative relationship behavior over time.<sup>5</sup>

#### *Longitudinal Prediction of Peer Relations at the Group Level*

A hierarchical multiple regression analysis similar to that described above was conducted to examine reassurance-seeking as a prospective predictor of peer relationships at the group level (i.e., social preference) within the whole sample ( $n = 520$ ). Time 2 social preference was used as a criterion variable, Time 1 social preference was controlled on an initial step, and all other predictors were identical to the analyses listed in Table 3. Apart from the significant association between social preference at each time point, no significant effects were revealed (total  $R^2 = .53, p < .001$ ).

#### *Longitudinal Prediction of Reassurance-Seeking*

A second set of analyses was conducted to examine group and dyadic peer relationships as longitudinal predictors of reassurance-seeking. Gender and depressive symptoms again were examined as moderators to investigate hypotheses regarding the combined effects of peer experiences and depressive symptoms in predicting reassurance-seeking and the relevance of this model for girls in particular.

The potential effects of peer relationships at the group and dyadic levels were examined simultaneously in one hierarchical multiple regression including the entire sample of participants ( $n = 520$ ). Using Time 2 reassurance-seeking scores as a dependent variable, Time 1 reassurance-seeking scores were entered on an initial step, followed by gender, age, pubertal development, and depressive symptoms on a second step. The main effects of social preference and self-reported positive and negative friendship qualities were entered on a third step, followed by six interaction terms on a fourth step to examine gender and depressive symptoms as possible moderators of each peer relations variable.<sup>6</sup> All results are presented in Table 4.

<sup>3</sup> Analyses conducted to examine reassurance-seeking without depressive symptoms entered as a simultaneous predictor yielded an identical pattern of results.

<sup>4</sup> To reduce potential data redundancy, this analysis was repeated using a reduced dataset in which each adolescent was randomly included either as a target participant or a best friend, but never both. This reduced dataset included data from 42 target adolescents and each of their best friends. Analysis of this reduced dataset again yielded an interaction effect between gender and reassurance-seeking as a predictor of positive friendship quality ( $\Delta R^2$ s = .19,  $p < .001$ ). For girls, high levels of reassurance-seeking were significantly associated with lower levels of positive friendship quality over time ( $\beta = -.77, p < .001$ ); however, no significant effect was revealed for boys ( $\beta = .03, ns$ ).

<sup>5</sup> Analyses of self-reported friendship quality also were conducted using only the subsample of adolescents who remained in a stable friendship between Time 1 and Time 2 ( $n = 101$ ) to offer results comparable to the study of friend-reported friendship quality. Gender (female) remained a significant predictor of positive friendship quality ( $\beta = .29, p < .01$ ). Other than negative friendship quality at Time 1, no significant predictors of Time 2 negative friendship quality emerged for adolescents in stable friendships over time.

<sup>6</sup> Three-way interactions among gender, depressive symptoms, and each domain of peer relations also were examined but did not add significantly to the model as a set. The results from reduced models examining only two-way interaction effects are listed in Table 4 for clarity of presentation.

Table 3  
*Longitudinal Prediction of Positive and Negative Dyadic Friendship Quality (Friend Report) from Gender, Age, Pubertal Development, Depressive Symptoms, and Reassurance-Seeking (n = 101)*

Predictors	Positive					Negative				
	Step statistics			Final statistics		Step statistics			Final statistics	
	$\Delta R^2$	<i>b</i> (SE <i>b</i> )	$\beta$	<i>b</i> (SE <i>b</i> )	$\beta$	$\Delta R^2$	<i>b</i> (SE <i>b</i> )	$\beta$	<i>b</i> (SE <i>b</i> )	$\beta$
Step 1	.36*					.13**				
Time 1 variable		.65 (.10)	.60**	.57 (.11)	.53**		.43 (.14)	.36**	.43 (.16)	.35*
Step 2	.09*					.00				
Gender (female)		.38 (.20)	.24*	.45 (.22)	.27*		-.01 (.12)	-.01	-.08 (.15)	-.09
Age		.06 (.12)	.06	.05 (.11)	.05		-.02 (.08)	-.04	-.06 (.08)	-.11
Pubertal development		-.12 (.16)	-.09	-.10 (.16)	-.08		.02 (.11)	.03	.06 (.11)	.09
CDI		-.11 (.39)	-.03	-.58 (.75)	-.15		.03 (.27)	.02	-.19 (.53)	-.09
RS		-.48 (.28)	-.17	.24 (.38)	.09		.05 (.20)	.03	.33 (.27)	.22
Step 3	.07*					.05				
RS × CDI		-0.63 (1.62)	-.04	-0.27 (1.90)	-.02		-1.95 (1.17)	-.25	-2.89 (1.32)	-.37*
RS × Gender		-1.51 (0.56)	-.36**	-1.34 (0.73)	-.32		-0.07 (0.41)	-.07	-0.60 (0.54)	-.26
CDI × Gender		.61 (.88)	.13	.58 (.89)	.12		.33 (.63)	.27	.43 (.63)	.17
Step 4	.00					.03				
RS × Gender × CDI				1.33 (3.62)	-.06				3.85 (2.61)	.33
Total $R^2$	.52**					.21*				

Note. CDI = depressive symptoms; RS = reassurance-seeking.  
 \*  $p < .05$ . \*\*  $p < .01$ .

Significant main effects (see step statistics) suggested that higher levels of depressive symptoms (unique effect  $R^2 = .03, p < .05$ ) and older age (unique effect  $R^2 = .02, p < .05$ ) were longitudinally associated with higher levels of reassurance-seeking at Time 2. This effect of depressive symptoms ultimately was

qualified by a significant interaction with peer-reported social preference (unique effect  $R^2 = .01, p < .05$ ). In addition, interaction effects were revealed for Social Preference × Gender (unique effect  $R^2 = .01, p < .05$ ) and Negative Friendship Quality × Gender (unique effect  $R^2 = .01, p < .05$ ). Holmbeck's

Table 4  
*Longitudinal Prediction of Reassurance-Seeking by Social Preference, Positive and Negative Friendship Quality (Self-Reported), Depressive Symptoms, and Gender (n = 520)*

Predictors	Time 2 RS				
	Step statistics			Final statistics	
	$\Delta R^2$	<i>b</i> (SE <i>b</i> )	$\beta$	<i>b</i> (SE <i>b</i> )	$\beta$
Step 1	.11**				
Time 1 RS		.32 (.04)	.34***	.23 (.04)	.25***
Step 2	.06***				
Gender (female)		.04 (.03)	.07	.05 (.03)	.09*
Age		.01 (.00)	.15***	.01 (.00)	.15***
Pubertal development		.00 (.02)	-.01	.00 (.02)	.00
CDI		.19 (.05)	.18***	.09 (.05)	.08
Step 3	.01				
Social preference		-.03 (.01)	-.08	.06 (.04)	.19
Positive friendship quality		-.01 (.02)	-.03	-.04 (.05)	-.11
Negative friendship quality		.04 (.03)	.06	-.16 (.09)	-.26
Step 4	.05***				
Social Preference × Gender				-.06 (.03)	-.30**
Positive Quality × Gender				.02 (.03)	.10
Negative Quality × Gender				.12 (.05)	.32*
Social Preference × CDI				-.15 (.05)	-.13**
Positive Quality × CDI				.04 (.05)	.04
Negative Quality × CDI				.10 (.07)	.07
Total $R^2$	.23***				

Note. RS = reassurance-seeking; CDI = depressive symptoms.  
 \*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ .

(2002) guidelines were used to reveal the nature of each of these interaction effects. For Depressive Symptoms  $\times$  Social Preference, slopes suggested that low levels of social preference were significantly associated with increases in reassurance-seeking under conditions of high depressive symptoms ( $+1 SD$ ,  $b = -.07$ ,  $\beta = -.20$ ,  $p < .001$ ) but not under conditions of low depressive symptoms ( $-1 SD$ ,  $b = .01$ ,  $\beta = .03$ , *ns*). For the interaction between Social Preference  $\times$  Gender, results suggested that low levels of social preference were associated with increases in reassurance-seeking for girls ( $b = -.07$ ,  $\beta = -.21$ ,  $p < .001$ ) but not for boys ( $b = .00$ ,  $\beta = .00$ , *ns*). Post hoc probing of the interaction between negative friendship quality and gender revealed a significant positive slope between self-reported negative friendship quality and reassurance-seeking for girls ( $b = .11$ ,  $\beta = .17$ ,  $p < .01$ ) but not for boys ( $b = -.04$ ,  $\beta = -.07$ , *ns*).

A similar analysis was conducted to examine friend-reported friendship quality as a prospective predictor of reassurance-seeking among adolescents involved in reciprocal best friendships at Time 1 ( $n = 182$ ). Apart from the significant association between social preference at each time point, no significant effects were revealed (total  $R^2 = .20$ ,  $p < .01$ ), suggesting that adolescents' perceptions, but not friends' perceptions, of friendship quality predicted reassurance-seeking over time. This pattern of findings remained in analyses of a reduced dataset (see Footnote 4).

### *Longitudinal Prediction of Depressive Symptoms*

As would be expected in this community-based sample, results indicated that approximately 7.7%, 6.6%, and 8.6% of girls and 2.7%, 1.0%, and 1.4% of boys scored within the elevated range ( $T$  scores  $> 63$ ; 90th percentile) using gender-based norms on the CDI at Times 1, 2, and 3, respectively (Kovacs, 1992). A diathesis-stress effect was hypothesized, suggesting that the combination of negative peer experiences (i.e., low levels of social preference, positive friendship quality, or high levels of negative friendship quality) and high levels of reassurance-seeking would be longitudinally associated with depressive symptoms at Time 2 or at Time 3 (i.e., later in development), particularly among girls.

A hierarchical regression analysis first was conducted to examine the prediction of depressive symptoms at Time 2, used as a criterion measure. After controlling for Time 1 depressive symptoms on an initial step, we entered Time 1 main effects of age, gender, pubertal development, reassurance-seeking, social preference, and self-reported positive and negative friendship quality on a second step; all possible two-way interactions were entered on a third step, followed by three-way interactions to examine gender differences in the diathesis-stress models (i.e., Reassurance-Seeking  $\times$  Negative Peer Experiences) on a fourth step. Apart from the significant association between depressive symptoms at each time point, no significant effects were revealed (all  $\Delta R^2$ 's  $< .01$ , *ns*) with one exception. Pubertal development at Time 1 was associated longitudinally with Time 2 depressive symptoms (unique effect  $R^2 = .01$ ,  $\beta = .08$ ,  $p < .05$ ). This effect remained significant in reduced models, removing nonsignificant predictors.

The same model was examined using depressive symptoms at Time 3 as a criterion variable and Time 2 measures of reassurance-seeking and peer relationships as predictors. Results revealed a significant three-way interaction between gender, reassurance-seeking, and positive friendship quality. This three-way interaction

effect remained significant in a reduced model that removed main and interaction effects of nonsignificant peer relationships variables (i.e., social preference and negative friendship quality; see Table 5). Subsequent analyses by gender revealed a significant main effect of Time 2 reassurance-seeking as a longitudinal predictor of Time 3 depressive symptoms among boys (unique effect  $R^2 = .01$ ,  $\beta = .14$ ,  $p < .05$ ) and no significant interaction effect with positive friendship quality. Among girls, a significant interaction effect between reassurance-seeking and positive friendship quality was revealed ( $\Delta R^2 = .02$ ,  $\beta = -.14$ ,  $p < .01$ ). Consistent with a diathesis-stress model, post hoc probing revealed that under conditions of high levels of reassurance-seeking, lower levels of positive friendship quality were longitudinally associated with higher levels of depressive symptoms (unique effect  $R^2 = .01$ ,  $b = -.06$ ,  $\beta = -.16$ ,  $p < .05$ ); however, under conditions of lower levels of reassurance-seeking, no significant slope emerged between positive friendship quality and depressive symptoms,  $b = .00$ ,  $\beta = -.01$ , *ns*.

### Discussion

Findings from this study offered promising but mixed support for several tenets of an interpersonal model of adolescent depressive symptoms and began to address some important questions regarding the nature of reassurance-seeking among youth as well as girls' unique interpersonal vulnerabilities to depressive symptoms.

A central tenet of interpersonal theories of depression pertains to the social consequences of depressive symptoms and depression-related social behaviors, such as reassurance-seeking. Out of six longitudinal analyses examining both adolescent- and peer-reported peer experiences as outcomes, three significant but small effects were revealed for depressive symptoms or reassurance-seeking as predictors. Specifically, after controlling for the potential effects of age and pubertal development, depressive symptoms were associated with less stability in reciprocated dyadic friendships over time and with increases in adolescents' perceptions of negative friendship quality. Although friendship stability has not previously been examined, results regarding changes in perceived friendship quality generally are consistent with prior research (Stice et al., 2004) and with models suggesting that depressive symptoms may lead to increases in individuals' perception of interpersonal difficulties (Rudolph et al., 2001).

Consistent with findings in the adult psychopathology literature, results also suggested that among adolescents who remained in stable, reciprocal relationships over time, reassurance-seeking was associated with relationship consequences (Joiner, Alfano, & Metalsky, 1999). Perhaps most intriguing, however, results indicated that high levels of reassurance-seeking were associated longitudinally with decreases in positive friendship quality only as reported by adolescents' friends and not by adolescents' own report, suggesting that adolescents did not perceive decreases in positive friendship quality as a function of their reassurance-seeking behavior. Moderator analyses also indicated that this effect was significant only for girls. Although caution is required when interpreting this single finding, results are consistent with several theoretical perspectives.

Informant-based differences in the associations between reassurance-seeking and friendship quality, at first glance, may

Table 5  
*Longitudinal Prediction of Time 3 Depressive Symptoms by Reassurance-Seeking, Positive Friendship Quality (Self-Reported), and Gender (n = 438)*

Predictors	Time 3 Depressive symptoms				
	Step statistics			Final statistics	
	$\Delta R^2$	<i>b</i> ( <i>SE b</i> )	$\beta$	<i>b</i> ( <i>SE b</i> )	$\beta$
Step 1	.51***				
Time 2 depressive symptoms		.78 (.04)	.71***	.77 (.04)	.70***
Step 2, main effects	.02***				
Gender (female)		.07 (.02)	.12***	.06 (.02)	.11*
Age		-.01 (.01)	-.04	-.01 (.01)	-.03
Pubertal development		.01 (.02)	.02	.01 (.02)	.02
RS		.02 (.03)	.02	.10 (.06)	.11
Positive friendship quality		.01 (.01)	.02	.02 (.02)	.06
Step 3, Two-way interactions	.01				
RS $\times$ Positive Friendship Quality		-.06 (.04)	-.06	.04 (.05)	.04
Gender $\times$ Positive Friendship Quality		-.02 (.02)	-.05	-.02 (.02)	-.04
RS $\times$ Gender		-.03 (.07)	-.03	-.09 (.08)	-.07
Step 4, Three-way Interaction	.01***				
Positive Friendship Quality $\times$ Gender $\times$ RS				-.23 (.08)	-.14***
Total $R^2$	.54***				

Note. RS = reassurance-seeking.

\*  $p < .05$ . \*\*\*  $p < .001$ .

seem to offer important support for the interpersonal theory itself. Presumably, if individuals were aware that their continued requests for reassurance would in themselves be linked with deteriorations in relationship quality, they would not persist. To the extent that an individual's requests for reassurance become irritating or excessive, it might be expected that he or she is fairly ignorant about the potential consequences that these continued requests may evoke.

However, alternate interpretations offer important questions regarding the meaning of the reassurance-seeking construct and may elucidate its potential mechanisms. For example, Swann and Bosson (1999) argued that continued requests for reassurance may lead seekers' significant others to feel ineffective, helpless, and lacking in credibility. Each repeated request for reassurance conveys a message that previous attempts to reassure were inadequate and fruitless, which in turn fails to validate most persons' beliefs that they are efficacious and credible. Withdrawal of support or intimacy by others may represent attempts to reduce exposure to this invalidating experience.

Still other interpretations include the possibility that reassurance-seeking may be a product of a more global orientation toward high self-focus and low self-evaluation, contributing to social-information-processing difficulties (Hamilton & Deemer, 1999; Pyszczynski & Greenberg, 1987), including seekers' limitations in perceiving the interpersonal consequences of their behavior during social interactions. Others have suggested that reassurance-seeking may be indicative of overdependence on others, insecurity, neediness, generalized anxiety, social anxiety, or worry, any of which may be associated with alienation in dyadic relationships (Greenberg, 1999). Among adults, findings suggest that reassurance-seeking is a somewhat discriminant correlate and predictor of depression but not of general dependence or anxiety (Joiner, Alfano, & Metalsky, 1999; Joiner & Schmidt, 1998; Joiner, Metalsky, Gencoz, & Gencoz, 2001); however, more work

is needed to examine possible correlates of reassurance-seeking among youth.

The gender specificity of our findings also was consistent with past work. Although girls did not report a significantly greater level of reassurance-seeking than boys, the effect of reassurance-seeking on dyadic peer relations was significant for girls only. Girls' relational orientation may yield more acceptance of reassurance-seeking behaviors among friends but more rejection when adolescents engage in these behaviors inappropriately. It is important to note that longitudinal findings between reassurance-seeking and friend-reported friendship quality were based on a subset of participants who engaged in stable, reciprocal best friendships over time; girls were somewhat overrepresented in this subsample. Thus, findings can inform research on the course of stable, reciprocal friendships in adolescence but do not generalize to all adolescents' friendship experiences.

Results also offered partial support for a second tenet of the interpersonal model, suggesting that reassurance-seeking may contribute to future depressive symptoms, particularly when reassurance-seeking is combined with an interpersonal stressor. After controlling for age and pubertal development, we found that a small but significant main effect of Time 2 reassurance-seeking and a diathesis-stress effect combining high levels of reassurance-seeking and low levels of perceived positive friendship quality were prospectively associated with higher levels of Time 3 depressive symptoms among boys and girls, respectively. No significant effects were revealed for reassurance-seeking in combination with other negative interpersonal experiences (e.g., peer rejection, negative friendship qualities) or in the prediction of depressive symptoms at Time 2. The absence of more significant findings or larger effect sizes may be associated with the relatively low levels of depressive symptoms observed in this nonreferred community (i.e., school-based) sample or with the somewhat small proportion

of variance in depressive symptoms to predict after accounting for its moderate stability over time. The significant findings revealed in this study were consistent with the downward spiral notion of depressive symptoms and interpersonal difficulties, however. The effects of reassurance-seeking on depressive symptoms may be most evident at later stages in development after successive iterations of the cycle between this behavior and interpersonal difficulties. Results also are consistent with prior work highlighting the importance of emotional support withdrawal among adolescent girls' and the possible consequences for depressive symptoms.

Results also offered initial insights into developmental antecedents of reassurance-seeking. Consistent with predictions regarding negative interpersonal experiences and depression as possible predictors of this behavior (Joiner, Katz, & Lew, 1999; Joiner, Metalsky, et al., 1999), perceptions of negative friendship quality and the combination of peer rejection and high levels of depressive symptoms were associated prospectively with increasing levels of reassurance-seeking behaviors among girls. Higher levels of depressive symptoms and older age also predicted reassurance-seeking for both boys and girls. Either negative peer experiences (e.g., peer victimization, conflictual or critical friendships) directly promote this type of behavior by evoking a greater need for reassurance from others, or perhaps by means of an indirect mechanism, both negative peer experiences and reassurance-seeking are consequences of a general tendency toward global neediness, dependence, social insecurity (Greenberg, 1999), an overreliance on others for self-relevant feedback (Brennan & Carnelley, 1999), or a tendency to negatively interpret interpersonal stimuli (Joiner, Alfano, & Metalsky, 1999). Consistent with this latter notion, depressive symptoms appear to be a predictor of reassurance-seeking behavior, as a main effect, and in combination with peer rejection.

Several limitations of this study should be noted and addressed in future research. For example, inclusion of a school-based sample and relatively high rates of attrition naturally preclude generality of results to adolescents experiencing clinically significant levels of depressive symptoms and may have led to restriction of range in some variables of interest (e.g., social preference). Future work would benefit from the use of additional instruments to assess depressive symptoms (e.g., diagnostic interviews) and an assessment of other significant (e.g., family) relationships that may be relevant to adolescents' reassurance-seeking. The manner in which reassurance-seeking behaviors may vary in presentation and function by culture or ethnicity also will be essential to investigate.

Future research also should continue to address some important questions regarding the construct of reassurance-seeking itself. Specifically, more work is needed to determine whether this behavior constitutes a stable risk factor for depressive symptoms in the same manner as other established predictors (e.g., depressogenic attributional style). Reassurance-seeking may represent an individual trait-like behavior or perhaps a reflection of a temporary affective state. As a temporary state, reassurance-seeking may be a manifestation of depressed affect, depression-related perceptions of interpersonal difficulty, or even aspects of the relationship itself (e.g., dominance imbalance; Benazon & Coyne, 1999). In support of this viewpoint, results revealed that the stability of reassurance-seeking in this sample was substantially lower than the stability of other social-psychological functioning constructs, including depressive symptoms and peer acceptance. As noted above, future

examinations of reassurance-seeking also should include generalized anxiety or worrying/ruminating behaviors as competing predictors of depression and interpersonal difficulties.

Continued study of this construct would certainly benefit from the development of more comprehensive assessment approaches (e.g., lengthier self-report instruments, observational approaches, experience sampling methods). Findings from this study contribute to a growing body of research using a relatively brief assessment instrument and therefore offer important findings regarding youth that can be compared with prior work. Future work might benefit from an exploration of differences in the target from whom reassurance is sought (i.e., seeking reassurance from a peer regarding a parent relationship) or pertaining to interpersonal concerns other than dyadic relationship security (e.g., concerns regarding popularity within the overall peer group).

In sum, from a developmental perspective, reassurance-seeking behaviors may reflect adolescents' experimentation with new social roles, their uncertainty regarding relationship security as social expectations mature, and their search for a positive self-image that is reflected in adaptive interpersonal relationships. In other words, reassurance-seeking behaviors initially may arise from normative developmental processes and may serve important functions during the adolescent transition. However, findings from this study suggested that ongoing requests for reassurance may reflect developmental difficulties in the interpersonal domain and ultimately may escalate to a level of severity that can have social-psychological implications later in development, particularly among girls. Evidence from this study supported reciprocal, transactional associations consistent with the downward spiral notion of reassurance-seeking, depressive symptoms, and interpersonal rejection; however, effects were relatively small in magnitude. Integrative models combining interpersonal, as well as cognitive and biopsychosocial approaches, will be needed to further understand girls' unique vulnerabilities to depressive symptoms during the adolescent transition.

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