Prospective Relations Between Social Support and Depression: Differential Direction of Effects for Parent and Peer Support?

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The authors tested whether deficits in perceived social support predicted subsequent increases in depression and whether depression predicted subsequent decreases in social support with longitudinal data from adolescent girls ($N = 496$). Deficits in parental support but not peer support predicted future increases in depressive symptoms and onset of major depression. In contrast, initial depressive symptoms and major depression predicted future decreases in peer support but not parental support. Results are consistent with the theory that support decreases the risk for depression but suggest that this effect may be specific to parental support during early adolescence. Results are also consonant with the claim that depression promotes support erosion but imply that this effect may only occur with peer support during this period.

Depression is the most common psychiatric problem faced by adolescents and is associated with functional impairment, suicide, and psychiatric comorbidity, as well as future academic failure, marital difficulties, unemployment, substance abuse, and legal problems (e.g., Lewinsohn, Hops, Roberts, Seeley, & Andrews, 1993). Because depression is so pernicious, research has focused on identifying risk factors for this disturbance.

A dominant perspective is that deficits in social support increase the risk for depression (Monroe, 1983; Windle, 1992). Theoretically, the perception that one is accepted and valued in one's interpersonal environment bolsters esteem, confidence, and efficacy, which guard against depression. The stress-buffering model (Windle, 1992) asserts that social support mitigates the relation between stressful life events and depression. Deficits in perceived support have predicted future increases in depressive symptoms during adolescence (Lewinsohn et al., 1994; Sheeber, Hops, Alpert, Davis, & Andrews, 1997; Slavin & Rainer, 1990; Stice & Bearman, 2001; Windle, 1992). Studies that examined both parental support and peer support found that only the former showed prospective effects (Lewinsohn et al., 1994; Windle, 1992). Some studies have found prospective effects for adolescent girls but not adolescent boys (Slavin & Rainer, 1990; Windle, 1992). Studies with adults have tended to find nonsignificant relations between

perceived support and subsequent increases in depressive symptoms (e.g., Monroe, 1983).

In contrast, interpersonal accounts of depression posit that the negative self-statements, complaints, dependency, reassurance seeking, inappropriate disclosure, and social inadequacy exhibited by depressed people foster support erosion (Coyne, 1976). Theorists have also suggested that support and depression are reciprocally related (Lazarus & Folkman, 1984). Depressive symptoms predicted decreases in perceived family support but not perceived peer support during late adolescence, but this effect was observed only for girls (Slavin & Rainer, 1990). Sheeber et al. (1997) found that depressive symptoms did not predict future decreases in familial social support for boys or girls. Depressive symptoms did not predict increases in social rejection in male and female college students (Joiner & Metalsky, 1995). These findings collectively suggest that the relation of depression to support erosion is more pronounced for females and for younger adolescents. When people are randomly assigned to interact with depressed or nondepressed individuals, the former are consistently more rejected and less accepted (e.g., Coyne, 1976). These results imply that depression shows inconsistent relations to support erosion from family and peers but that depressed individuals consistently elicit rejection from strangers. This suggests that depression may produce the strongest rejection among individuals who have not yet developed an intimate relation with the depressed individual.

We prospectively tested whether there are reciprocal relations between perceived support and depression and whether these processes differ for support from family versus peers. On the basis of past findings, we hypothesized that deficits in parental support but not peer support would show stronger prospective effects on increases in depression. We predicted that support erosion would be weaker for parents because they are considered responsible for the emotional well-being of their children, whereas peers can more easily withdraw from a depressed youth. To provide an optimally sensitive test of these relations, we focused on early adolescence because depression shows marked increases during this period (Hankin et al., 1998). We examined adolescent girls because these

Table 1
Rates of Depression Diagnoses, Means, and Standard Deviations for the Outcome Variables

Variable	Time 1	Time 2	Time 3
Rates of depression diagnoses	*n* (%)	*n* (%)	*n* (%)
No depression diagnoses	485 (97.7)	462 (95.7)	476 (98.3)
Major depression	11 (2.2)	21 (4.3)	8 (1.7)
Rates of depression diagnoses onset			
Major depression		11 (2.3)	4 (0.8)
Outcome variables	*M* (*SD*)	*M* (*SD*)	*M* (*SD*)
Parental support	4.06 (0.86)$_a$	3.90 (0.92)$_b$	3.88 (0.92)$_b$
Peer support	4.25 (0.77)$_a$	4.35 (0.75)$_b$	4.36 (0.76)$_b$
Depressive symptoms	1.34 (0.37)$_a$	1.35 (0.38)	1.38 (0.37)$_b$

Note. Means with different subscripts within the same row are significantly different ($p < .02$). Nonapplicable cells were left blank.

data were drawn from a longitudinal study of eating pathology, which primarily affects females. However, research suggests that the relations between depression and support are more pronounced for girls (Windle, 1992).

Method

Participants were 496 girls enrolled in public and private middle schools in a southwestern city (2% Asian; 7% Blacks; 68% Whites; 18% Latina; 1% Native Americans; 4% other/mixed). Age ranged from 11 to 15 years ($M = 13$, $SD = 0.73$) at baseline. Average parental education was as follows: 29% high school graduate or less, 23% some college, 33% college graduate, and 15% graduate degree. The study was described as an investigation of adolescent mental and physical health. An informed consent letter and return envelope were sent to parents of eligible girls (second mailings were sent to nonresponders), resulting in a mean participation rate of 56% (with a range of 44% to 71% across schools). This rate was similar to that of other school-recruited samples that required active consent and structured interviews (e.g., 61% for Lewinsohn et al., 1993). The ethnic composition of the sample was representative of the schools from which we sampled (2% Asian, 8% Blacks, 65% Whites, 21% Hispanics, 4% other/mixed). The educational attainment of parents was similar to census data for comparable-age adults (34% high school graduate or less, 25% some college, 26% college graduate, 15% graduate degree). The 1-year prevalence rates of major depression (4.2%), bulimia nervosa (0.4%), and substance abuse (8.9%; Stice, Presnell, & Bearman, 2001) were similar to the prevalence rates from epidemiological studies (e.g., Lewinsohn et al., 1993).

Participants completed a survey and an interview at baseline (Time 1 [T1]) and at 1- and 2-year follow-ups (Time 2 [T2] and Time 3 [T3]). Female assessors with at least a bachelor's degree in psychology attended 24 hr of training, wherein they learned interview skills, reviewed diagnostic criteria, observed interviews, and role-played interviews. Assessors had to demonstrate an interrater agreement ($\kappa > .80$) with experts using tape-recorded interviews before collecting data. Interviews were randomly recorded to ensure that assessors continued to demonstrate acceptable interrater agreement ($\kappa > .80$) with experts. Assessments took place during or after school hours on the school campus or at participants' homes. Each participant received a $15 gift certificate to a book and music store at each assessment.

Perceived social support was measured with Network of Relationships Inventory (Furman, 1996) items assessing companionship, guidance, intimacy, affection, admiration, and reliable alliance from parents and peers (six items each). These scales have high internal consistency (mean $\alpha = .88$), test–retest reliability (mean $r = .69$), and predictive validity (Furman,

1996; Stice & Bearman, 2001). An adapted version of the Schedule for Affective Disorders and Schizophrenia for School-Age Children (Puig-Antich & Chambers, 1983), a structured interview assessed *Diagnostic and Statistical Manual of Mental Disorders* (4th ed.; *DSM–IV;* American Psychiatric Association, 1994) major depression symptoms. Severity ratings for each symptom were averaged to form a depressive symptom composite at each assessment. Girls were also diagnosed with current major depression at each assessment. The Schedule for Affective Disorders and Schizophrenia for School-Age Children has high test–retest reliability ($\kappa = .63$ to 1.0), high interrater reliability ($\kappa = .73$ to 1.0), high internal consistency ($\alpha = .68$ to .84), and high discriminant validity (e.g., Lewinsohn et al., 1993). A second assessor who was unaware of the first diagnosis interviewed a randomly selected subset of girls (5%) within a 3-day period, resulting in high interrater agreement ($\kappa = 1.0$). Another randomly selected subset of girls (5%) was interviewed a second time by the same assessor 1 week later, resulting in high test–retest reliability ($\kappa = 1.0$).

Results

Of the initial 496 girls, 10 did not provide Time 2 data and 10 did not provide Time 3 data, but only 4 did not provide both Time 2 and Time 3 data. Attrition analyses verified that girls who dropped from the study did not differ from the remaining girls on age, ethnicity, parental education, parental support, peer support, or depressive symptoms at T1. As latent growth curve (LGC) models can accommodate cases with only two out of three waves of data, the effective attrition rate was 1%.

Table 1 reports the rates of major depression at each assessment, the rates of diagnoses in those free of depression at T1, and the means and standard deviations for each of the outcomes at T1, T2, and T3.[1] A score of 4.0 on the support scales indicates that on average girls agree with the statements about the support they received from parents and peers. A score of 1.3 on the depression scale indicates that the average severity rating for depressive symptoms was *not at all or less*

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[1] It is important to note that the LGC analyses used here model individual differences in growth in each of the outcomes rather than changes in mean level. The means and standard deviations are reported only for descriptive purposes.

Table 2
Correlations and Descriptive Statistics for Variables Used in the Growth Curve Models

Variable	2	3	4	5	6	*M*	*SD*	*Min, max*
1. Parental support intercept	.23	−.42	−.08	−.10	.12	4.12	0.56	2.14, 4.88
2. Peer support intercept		−.25	−.06	−.46	.07	4.21	0.43	2.57, 4.72
3. Depressive intercept			.03	−.03	−.54	1.32	0.31	0.94, 2.77
4. Parental support slope				.20	−.16	−0.09	0.11	−0.57, 0.37
5. Peer support slope					−.06	0.06	0.11	−0.41, 0.50
6. Depressive symptom slope						0.02	0.08	−0.24, 0.31

Note. Absolute correlations greater than .09 are significant at $p < .05$. Min = minimum; max = maximum.

than once a week. Girls meeting criteria for major depression had a mean score of 2.6, which corresponds to an average severity rating of *moderate* (feels depressed over 50% of time for at least 2 weeks). Depressive symptoms and parental support showed high stability over time (mean 1-year test–retest $r = .60$ for both); however peer support showed lower stability (mean 1-year test–retest $r = .39$). Thus, perceived peer support showed more variability over time than did perceived parental support.

We used LGC models (estimated in the Hierarchical Linear Modeling Program Version 5; Bryk, Raudenbush, Cheong, & Congdon, 2000) because this analytic technique accommodates missing data and provides a sensitive test of prospective relations by modeling the individual growth trajectories shown by each participant. There was significant heterogeneity in the initial levels (intercepts) and linear slopes reflecting the average annual increases in the variables for parental support, peer support, and depressive symptoms. The correlations between the intercept and slope parameters for each of the variables are presented in Table 2, with means, standard deviations, minimum, and maximum. Although the slopes for each outcome ranged from negative (indicating decreases in the construct over time) to positive (indicating increases in the construct over time) across participants, each of the average slopes was significantly different from zero. The intercepts for parental support and peer support were only modestly correlated, confirming that these two domains should be examined separately.[2]

We simultaneously[3] regressed the slope parameter for growth in depressive symptoms on T1 perceived parental support[4] and the intercept for depressive symptoms[5] and regressed the slope parameter for growth in perceived parental support on T1 depressive symptoms and the intercept of perceived parental support. The unstandardized coefficients, 95% confidence intervals, standardized coefficients, and significance levels are reported in Table 3. Deficits in parental support at T1 predicted subsequent increases in depressive symptoms over the 2-year period, but elevated T1 depressive symptoms did not predict subsequent decreases in perceived parental support. The negative regression coefficients mean that lower scores on the predictor are associated with higher scores on the criterion (greater increases in the outcome) and higher scores on the predictor are associated with lower scores on the criterion (greater decreases in the outcome). Next, we simultaneously regressed the slope parameter for growth in depressive symptoms on T1 perceived peer support and the intercept for depressive symptoms and regressed the slope parameter for growth in perceived peer support on T1 depressive symptoms and the intercept of perceived peer support. The unstandardized coefficients, 95% confidence intervals, correlations, and significance levels are reported in Table 3.

Deficits in T1 peer support did not predict subsequent increases in depressive symptoms, but elevated T1 depressive symptoms predicted subsequent decreases in perceived peer support.

Logistic regression models indicated that deficits in T1 parental support but not peer support predicted onset of major depression over the study period among the initially nondepressed girls (odds ratio = .46, $p = .001$, and odds ratio = .65, $p = .11$, respectively). In contrast, LGC models indicated that initial major depression diagnoses predicted decreases in perceived peer support but not perceived parental support ($\beta = -.13$, $p = .001$, and $\beta = -.03$, $p = .441$, respectively).[6]

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[2] As preliminary analyses indicated that age, ethnicity, and parental education were not significantly related to changes in parental support, peer support, or depressive symptoms over time, these demographic factors were not included as covariates in the models. Analyses also verified that there was no evidence of quadratic effects for the independent variables.

[3] The identity of the dependent variables was dummy coded and the model reparameterized to allow simultaneous solution of the reciprocal relations between social support and depressive symptoms. The model was estimated using a hierarchical linear modeling program with all parameters (social support slope and intercept, depressive symptom slope, and intercept) modeled as random, rather than fixed, parameters.

[4] We did not include both parental support and peer support in the same model because this would have had the effect of treating the correlation between these two variables as irrelevant (as the parameter estimates would focus on the unique effects of each predictor). However, it should be noted that the pattern of findings was similar when both parental support and peer support were included simultaneously in the model; all significant effects remained significant and all nonsignificant effects remained nonsignificant.

[5] It should be noted that the T1 variables are not identical to the intercepts for these variables because data from all of the assessment points are used to estimate the slope coefficient, which is then used to estimate the intercept (at T1). Although one could argue that the intercept is more accurate because more information is used to estimate this parameter, because some of this information is from T2 and T3, we felt more comfortable looking at the predictive effects for the T1 variables rather than the intercepts.

[6] It is possible that the prospective effects for depression symptoms and major depression result solely because of comorbid psychiatric conditions. Of the 11 participants diagnosed with major depression at T1, 4 also met *DSM–IV* criteria for substance abuse (none met diagnostic criteria for anorexia nervosa, bulimia nervosa, or binge eating disorder; see Stice et al., 2001, diagnostic procedures). However, post hoc analyses indicated that the significant relations of T1 depressive symptoms and T1 depression diagnoses to change in peer support remained significant ($p < .01$) and marginally significant ($p = .06$) when the comorbid cases were excluded from the analyses.

Table 3

Parameter Estimates and Confidence Intervals From the Latent Growth Curve Models Examining the Prospective Relations Between Social Support and Depressive Symptoms

T1 predictor	B	95% CI	r	p
Changes in parental social support from T1 to T3				
Depressive symptoms	−.077	−.197 to .043	−.06	.210
Changes in peer social support from T1 to T3				
Depressive symptoms	−.180	−.281 to −.079	−.16**	.001
Increases in depressive symptoms from T1 to T3				
Parental social support	−.030	−.053 to −.007	−.12*	.012
Peer social support	−.009	−.033 to .015	−.03	.445

Note. B = unstandardized coefficients; CI = confidence interval; r = semi-partial correlation coefficient; T1 = baseline; T2 = 1-year follow-up; T3 = 2-year follow-up.
* $p < .05$. ** $p < .01$.

Discussion

Deficits in perceived parental support but not in perceived peer support predicted future increases in depressive symptoms and onset of major depression. The effect for parental support appeared to be robust in that it emerged in the growth curve and logistic regression models. That this effect occurred when depressive diagnoses were used suggests that the effect should generalize to clinically significant depressive pathology. These findings converge with those from past studies that indicated that deficits in parental support but not peer support predicted increases in depressive symptoms (Lewinsohn et al., 1994; Windle, 1992). Our findings provide support for the assertion that deficits in social support increase the risk for depressive pathology but suggest that deficits in parental support may be more damaging than deficits in peer support, at least during adolescence. Parental support might show stronger relations to depression because it is more consistent than peer support—the latter may vary as the composition of peer networks shifts, or peers may be more likely to oscillate between acceptance and rejection. That parental support evidenced greater temporal stability than did peer support is consistent with this notion. Another possibility is that parents might provide higher quality support because they are more mature and can draw on more life experience to offer guidance and instrumental support. Although it is tempting to suggest that parents provide more support than peers, the mean levels of the parental support and peer support scales suggest that this is not the case. Finally, it is possible that deficits in parental support serve as a proxy measure to some confounding third variable that was not assessed, such as parental psychopathology or family instability, and that this third variable explains the observed relations.

Initial depressive symptoms and major depression predicted decreases in perceived peer support but not perceived parental support. The effect for peer support was robust in that it emerged in two different analytic approaches. Slavin and Rainer (1990) found evidence of support erosion, although they found that depressive symptoms predicted decreases in parental support but not peer support. Our findings are consistent with interpersonal theories asserting that the

behaviors of depressed individuals, such as excessive reassurance seeking, result in support erosion. However, findings from this and past studies seem to suggest that support erosion may be specific to particular developmental periods and populations. Studies focusing on women (vs. men or mixed-sex samples) and on adolescents (vs. adults) were more likely to find evidence of support erosion. We suspect that this pattern of findings is due to the fact that the most dramatic increases in depression are observed in girls during early adolescence (Hankin et al., 1998), which may result in the greatest strain on support providers for this subpopulation. It is unclear why we observed support erosion effects for peer support but not parental support, whereas Slavin and Rainer (1990) observed the opposite pattern of findings. We had hypothesized that the support erosion effects would be more pronounced for peer support based on the notion that there are stronger proscriptions about withdrawing social support from one's daughter versus a peer. The evidence that social rejection is consistently observed for depressed strangers (e.g., Coyne, 1976) suggests the possibility that peers may reject depressed girls before close relationships are formed. An alternative interpretation for the observed relation between initial depression and decreases in peer support is that depressed girls selectively pair up with depressed peers who are unskilled at providing support (Daley & Hammen, 2002). It is also possible that depressed girls withdraw from their peers, which would have the effect of reducing the number of peers who could provide support.

The limitations of this study should be noted. First, we relied solely on self-report data, which precluded the possibility of distinguishing perceived support from enacted support. Fortunately, perceived support has been found to correlate with enacted support (e.g., the correlation between perceived parental support and parent report of support provided was .81 after disattenuating for unreliability; McCaskill & Lakey, 2000). Further, the possibility that perceptual biases explain the findings is difficult to reconcile with the fact that support erosion occurred for peer support but not parental support.[7] Second, prospective studies are always subject to the possibility that some unmeasured confounding variable explains the observed effects. Third, the moderate participation rate suggests that the findings should be generalized cautiously. Finally, because our sample included only girls, results should not be generalized to boys.

Future research should test whether participant age or gender moderates these relations between support and depression. Studies should also include measures of support provision by parents and peers or observational measures to rule out the possibility that biased information processing distorted the findings. Research should attempt to clarify the relative importance of support erosion, assortative pairing, and social withdrawal in explaining the link between initial depression and subsequent decreases in perceived support. It will also be important for future prospective studies to measure potential confounds, such as parental depres-

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[7] It is possible that emotional reactivity (i.e., an elevated propensity to become affectively distressed) is a confound that explains our results in that this temperament trait might increase the risk for depression and result in the perception of low social support. However, post hoc analyses verified that all significant effects remained significant and all nonsignificant effects remained nonsignificant when the LGC models controlled for T1 levels of emotional reactivity, as assessed by Buss and Plomin's (1984) emotionality scale.

sion, comorbid depression, and a history of depression, and to test whether these confounds explain the relations between support and depression. Finally, because experiments are more effective in ruling out the possibility of third variable confounds, randomized trials should examine the effects of interventions that increase enacted support on adolescent depressive pathology and the effects of interventions that reduce depressive symptoms on perceived and enacted support (in the context of randomized trials of parent training program and depression prevention program evaluations, respectively).

In terms of clinical implications, findings suggest that it might be beneficial to attempt to increase parental support in depression prevention programs. Results also imply that it might be advantageous to incorporate social skills training in depression treatment programs to help reduce the risk for support erosion.

In conclusion, these results are consistent with the theory that social support deficits increase the risk for depression. However, the pattern of findings suggests that the adverse effects of support deficits may be limited to parental support during early adolescence. Findings were also consonant with the assertion that depressive pathology promotes support erosion but suggest that this effect may be specific to peer support during this developmental period. Thus, results provide additional evidence for the relation between social support and depression but suggest that the nature of these relations may differ across support providers.

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