

Interpersonal Functioning and Depressive Symptoms in Childhood: Addressing the Issues of Specificity and Comorbidity

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Research has supported linkages between depression and social impairment in youngsters, but has often focused on depressive symptoms in isolation. We collected data on depressive, anxiety, and externalizing symptoms in 161 school children. Information about interpersonal competence was gathered from several sources, including children, teachers, and behavioral observations. Depressive symptoms were found to be related to difficulties in multiple areas of competence, including maladaptive social problem-solving styles, conflict-negotiation and affect-regulation deficits, and peer rejection. Comparisons of the relative contributions made by depressive and anxiety symptoms to the prediction of functioning yielded some evidence for a specific relation between depressive symptoms and impairment. Children with cooccurring internalizing and externalizing symptoms generally suffered from the most social dysfunction. If replicated in clinical samples, findings such as these may help to guide intervention efforts with depressed children.

Researchers studying adult depression (Coyne, 1976; Gotlib & Hammen, 1992) have begun to focus on interactional models of functioning. Support for such models has come from numerous studies that link depression with interpersonal difficulties and disturbed family, romantic, and peer relationships (see Gotlib & Hammen, 1992, for review). More specifically, research

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has demonstrated that depressed adults may evoke aversive reactions from others and may induce negative mood states during social interactions (Gurtman, 1986).

In keeping with trends in the adult literature, developmental psychopathologists have begun to view child depression within an interpersonal framework, which takes into account the continuous transactions between children and their social contexts (e.g., Cicchetti & Schneider-Rosen, 1984; Hammen, 1992). Empirically, interpersonal themes have emerged as a salient component of the depressive experience in youngsters (e.g., Hammen & Goodman-Brown, 1990; Renouf & Harter, 1990). A consistent association has been noted between depression and negative self-perceptions of social competence, including increased impulsivity, decreased or inappropriate assertiveness, greater submissiveness, and poor social self-concept (e.g., Altmann & Gotlib, 1988; Kennedy, Spence, & Hensley, 1989; Wierzbicki & McCabe, 1988). Depressed mood has also been found to be related to low teacher and peer ratings of acceptance (e.g., Blechman, McEnroe, Carella, & Audette, 1986; Cole, 1990; Jacobsen, Lahey, & Strauss, 1983; Patterson & Stoolmiller, 1991), and poor *quality* friendships are evident in clinically depressed populations (Puig-Antich et al., 1985).

In terms of social *performance*, some studies have revealed an association between depressed mood and interpersonal problem-solving deficits (e.g., Sacco & Graves, 1984), yet others have failed to uphold these results (e.g., Doerfler, Mullins, Griffin, Siegel, & Richards, 1984). Depressed child inpatients have been observed to engage in less social activity and to exhibit less affect-related expression than their nondepressed counterparts (Kazdin, Esveltd-Dawson, Sherick, & Colbus, 1985). Relatively depressed school children spend more time in solitary activities than their nondepressed peers, but when socially engaged they display elevated levels of negative/aggressive behavior (Altmann & Gotlib, 1988).

Thus, preliminary evidence builds a reasonably strong case for the presence of social impairment in depressed youngsters, but several important issues remain. First, researchers have often relied on self-perceptions, but because depressed children may demonstrate cognitive biases that preclude accurate appraisal, low self-competence ratings may not reflect true interpersonal difficulties (Weisz, Rudolph, Granger, & Sweeney, 1992). Self-report data must therefore be supplemented with more objective indices of functioning. Second, few studies have employed direct observation methods, which may afford the opportunity for more refined analyses of depressive behaviors and their impact on peers.

Moreover, we know relatively little about the extent to which interpersonal dysfunction is unique to depression. Documentation of analogous peer difficulties in *anxious* children (e.g., Strauss, Frame, & Forehand, 1987) has led some investigators to propose that social impairment may represent a diffuse, nonspecific marker of maladjustment. Relatedly, studies have indicated quite extensive overlap between internalizing (i.e., depression and anxiety) and externalizing symptom patterns (e.g., Jacobsen et al., 1983) and clinical syndromes (see Zoccolillo, 1992, for review). Furthermore, pure and mixed symptom groups have been found to display distinct profiles of psychiatric features, short- and long-term outcomes, and family history (Harrington, Fudge, Rutter, Pickles, & Hill, 1991; Zoccolillo, 1992). Yet in the search for interpersonal correlates of depression, investigators have often disregarded these high rates of cooccurrence. It may well be that the social disturbances identified in depressed children are manifested only by a subgroup with concurrent externalizing problems (e.g., Asarnow, 1988).

The present study was designed to provide a descriptive analysis of the link between depressive symptoms and interpersonal functioning in a general population sample of children. Several indices of social competence were selected to satisfy three criteria: (1) to sample a range of interpersonal skills that have been of theoretical and empirical interest in the child depression literature; (2) to gather information from three separate sources—child, teacher, and independent observer; and (3) to distinguish between two major categories of impairment that have been associated with depression—decreased prosocial activity and peer isolation versus increased aversive behavior and peer rejection.

With these goals in mind, we included the following measures: (1) a self-report inventory of interpersonal problem-solving style, (2) teacher ratings of behavior within the peer group, (3) an interaction task examining conflict-negotiation and affect-regulation skills, and (4) teacher report of peer sociometric status. We hypothesized that children with depressive symptoms would manifest increased social dysfunction in each of these domains.

We also sought to examine whether peer difficulties were specifically related to depression, or were associated with internalizing symptoms in general. Our final objective was to evaluate the impact of cooccurring internalizing and externalizing symptoms on social adjustment. We predicted that children with neither internalizing nor externalizing symptoms would show the least social impairment, whereas children with mixed symptom patterns would display the most impairment. Children with pure internal-

izing or pure externalizing symptoms were expected to manifest moderate levels of impairment.

METHOD

Subjects

Subjects were 161 children, ranging in age from 7.0 to 12.75 years ($M = 9.42$; $SD = 1.17$). The sample was 55% female and was ethnically heterogeneous: 59% Caucasian, 12% African-American, 11% Latino, 11% Asian-American, and 7% other. One group of children was recruited from elementary schools in Los Angeles. Consent forms were distributed to children in their classrooms or at afterschool child-care programs. For those children who did not return consents after the first distribution, additional information about the project was provided to parents, when possible, either in person or by telephone. The response rate for this group was approximately 50%. A second group of children was recruited from the UCLA Bruin Kids Day Camp. Forms were mailed directly to parents by the camp directors, along with a packet of information concerning several research projects at UCLA. A second contact was not made with these parents due to practical constraints. Because the distribution of consent forms was monitored by the camp, it was not possible to calculate a response rate in this group.³

Procedures

Self-report scales were individually administered to each child. Measures of social behavior and sociometric status were completed by teachers, child-care supervisors, and camp counselors (referred to collectively as "teachers"). Thirty-six children later participated in an interaction task at UCLA (see below).

Children's Depression Inventory (CDI; Kovacs, 1980/1981). This 27-item self-report questionnaire is the most commonly-used measure of depressive symptoms in youngsters. For each item children endorse one of three state-

³Because no information was available concerning the children whose parents did not consent to their participation, we were unable to make specific comparisons between the participants and nonparticipants. However, based on the personal contacts made with the parents in the school sample, we did not have any reason to believe that these two groups differed in any systematic way. In the camp sample, our impression was that nonparticipation resulted mainly from the fact that families were asked to participate in several research projects simultaneously, and may have therefore either withheld consent altogether or may have consented to their child's participation in only one study.

ments, graded in severity from 0 to 2. The scale yields a total score ranging from 0 to 54. Adequate psychometric properties have been established in several studies.

Revised Child Manifest Anxiety Scale (RCMAS; Reynolds & Richmond, 1978). The RCMAS is a 37-item questionnaire that assesses the presence or absence of trait-like anxiety symptoms. Items are presented in a yes–no format; 28 items measure anxiety and nine constitute a response bias scale. The instrument yields a total score ranging from 0 to 28 for the anxiety items and 0 to 9 for the social desirability items. Adequate internal consistency and test–retest reliability (coefficients $> .80$) have been reported.

Conners' Abbreviated Teacher Rating Scale (Conners, 1973). This 10-item rating scale was developed from Conners' Teacher Rating Scale and Conners' Parent Questionnaire, and contains items from the original Conduct Problem, Inattentiveness, and Hyperactivity factors. Satisfactory correlations have been reported between the abbreviated scale and the above factors on the Conners' Teacher Rating Scale ($r = .78, .74, \text{ and } .94$, respectively), as well as between this scale and the mean of all factors on the original teacher scale ($r = .92$) (Werry, Sprague, & Cohen, 1975).

Interpersonal Problem-Solving Questionnaire (IPSQ; Rudolph, 1993). The IPSQ includes 10 vignettes depicting challenging peer situations, followed by three types of problem-solving strategies—sociable/assertive, passive/withdrawing, and hostile/dominating. Children are asked to select the strategy that they would most likely invoke if faced with that situation. Three scores were calculated, reflecting the total number each of sociable, passive, and hostile strategies endorsed. A sample item is as follows: "You're standing in line to go to lunch and another girl cuts in front of you. What would you do? (a) I would tell her that I was standing there first (sociable/assertive); (b) I would just let her take the space (passive); (c) I would push back in front to get my place back (hostile)."

Moderate internal consistency ($\alpha = .59$) and 1-month test–retest reliability [$r(32) = .75, p < .0001$] have been reported (Rudolph, 1993). Although a larger alpha would have been desirable, it may be the case that the 10 interpersonal dilemmas assess different aspects of social problem-solving ability. Validity has been demonstrated through findings of significant correlations between children's responses on the IPSQ and several other measures of social competence, including adult report of social behavior, behavior observations, and teacher sociometric ratings (Rudolph, 1993). The revised version used here was available for 101 children in the current sample.

Social Behavior Scale (SBS). The SBS is composed of two peer competence scales developed by Hops and colleagues (Hops & Greenwood, 1988). The "prosocial behavior" subscale consists of nine items from the

Social Behavior Rating Positive Scale, which targets initiation of and participation in positive social interactions. The “aversive behavior” subscale consists of seven items from the Negative Social Behavior Scale, which has been shown to distinguish normal and aggressive children. The two subscales showed high internal consistency in the current sample [alphas = .92 and .95, respectively] and were stable over a 1-month period [$r(26) = .71, p < .0001$, and $r(26) = .83, p < .0001$, respectively] (Rudolph, 1993). Because teachers in the schools had limited time availability, the SBS was completed by child-care supervisors and day-camp counselors only ($n = 75$).

Conflict-Negotiation Task. Thirty-six children (20 girls, 16 boys) engaged in a laboratory interaction task. Seven subjects were selected as a low-CDI group on the basis of their CDI scores at the initial testing (scores of 5 or lower; $M = 1.57$; $SD = 1.90$) and 11 subjects were selected as a high-CDI group (scores of 9 or higher; $M = 11.91$; $SD = 3.05$). The remaining 18 subjects were assigned as partners. Partners were matched for gender and age and, for the most part, were unfamiliar to the target children. Mean partner CDI scores were not significantly different in the low-CDI ($M = 6.86$; $SD = 5.96$) and high-CDI ($M = 5.82$; $SD = 3.37$) dyads, $t(16) = .48$, n.s.⁴

The task involved three major decision points that posed a potential conflict of interests. First, children were given two models built of colored blocks and were asked to select a leader, who would choose a model for them to build. Next, they were informed that whoever constructed an identical model would win a prize. They were given a set of blocks to share, which was sufficient to *complete* a single model or to *partially* construct two separate models. After 10 min they were asked to decide on the distribution of two prizes of unequal value. Subsequently, the partners participated in a 5-min interview (see below); the child who received the less valuable prize was given the opportunity to choose a new one.

Coding of the Conflict Task. Two raters, blind to the status of the children and their social functioning scores, independently provided ratings

⁴Thirty-eight children initially participated. One dyad was dropped based on an analysis for outliers. Several factors limited the number of participants in this task. First, constraints were imposed by the selection and matching criteria used. Children qualified as targets only if their CDI scores were in the more extreme low or high ranges. We then selected partners who were matched according to sex, age (within 1 year), and previous exposure to the target child. Additionally, the implementation of the task and the coding procedures were quite time-intensive, and participation required that parents bring their children to UCLA. We originally used a cutoff of 4 for the low-CDI group, but constraints on the availability of children led us to include one child with a CDI of 5. Because of the time lag between initial CDI administration and the interaction for some children, two high-CDI subjects (with initial scores of 14 and 21) had scores of 8 immediately prior to the task, but were retained in the high-CDI group.

based on videotapes of the overall interaction. Interrater reliability was assessed via Pearson correlations, which follow each code. Coding discrepancies were resolved in one of two ways: (a) If coders disagreed by only 1 point, an average of the two codes was used; (b) if coders disagreed by 2 or more points, a consensus was reached on the actual code.

First, eight dimensions of social behavior with conceptual and/or empirical links to the depression literature were coded along a 7-point scale (1 = not at all present; 4 = moderately present; 7 = to a large degree present). Because several dimensions were significantly correlated, two conceptually derived classifications were formed: conflict-negotiation competence ($r = .88$; $\alpha = .95$), which included persistence in problem-solving efforts, positive assertiveness, positive conflict management, and general social competence; and affect regulation ($r = .92$; $\alpha = .82$), which included conflict exacerbation, positive affect, "outwardly directed" negative affect, and "inwardly directed" negative affect. Individual ratings were recoded so that *high* composite scores reflected *lower* conflict-negotiation competence and *less* appropriate affect regulation.

Second, a dyadic quality code ($r = .90$; $\alpha = .95$) was formed from four 7-point ratings of social interaction: conflict or friction between peers, collaboration, problem-solving competence of the dyad, and mutuality/reciprocity. *High* composite scores reflected *less* adaptive interactions. A single 7-point rating was also made for the rate of peer interaction (high scores reflected more interaction).

Third, a peer response code ($r = .89$; $\alpha = .97$) was formed from three 7-point ratings of the partners: general response to the target children (actively negative to actively positive), discomfort or embarrassment in response to the target children (not at all present to to a large degree present), and emotional state at the end of the interaction (irritated/unhappy to content/happy). *High* composite scores reflected more *negative* peer responses.

Partners were asked to rate how much they liked playing with the targets, how much they thought the targets liked playing with them, and how much they would like to be friends with the targets. Targets were also rated on five descriptors: nice, bossy, fun, shy/quiet, and sad. An "internalizing" scale was formed from the last three descriptors (low fun and high shy/quiet and sad ratings).

Sociometric Ratings. Teacher ratings of peer rejection ranged from 1 (not at all rejected) to 5 (to a large degree rejected). Teachers also selected 1 of 6 sociometric categories that best described each child. Because of low base rates, categories were collapsed as follows: (a) social star ($n = 22$), (b) average ($n = 40$), (c) disliked/rejected, disliked/ostracized, or controversial (disliked) ($n = 9$), and (d) neglected/ignored (neglected) ($n = 10$). Because child-care supervisors and camp counselors did not observe

children in their customary peer groups, analyses on sociometric ratings were conducted on the school sample only ($n = 81$).

RESULTS

Two groups were formed based on children's CDI scores: a low-CDI group, which included children scoring in approximately the bottom one-third of the sample (scores of 4 or below), and a high-CDI group, which included children scoring in approximately the top one-third of the sample (scores of 9 or above). The mean score of the low-CDI group ($n = 61$; $M = 2.15$; $SD = 1.50$) was significantly lower than that of the high-CDI group ($n = 57$; $M = 13.26$; $SD = 3.94$), $t(71) = 20.01$, $p < .0001$. The two groups did not differ in gender, $\chi^2(1) = 1.59$, n.s., age, $t(116) = .92$, n.s., or ethnicity (Caucasian vs. non-Caucasian), $\chi^2(1) = 0$, n.s.

Before conducting our primary analyses, we examined whether gender exerted any significant effects on key variables or their interrelationships. No significant differences were found between boys ($M = 7.78$; $SD = 5.37$) and girls ($M = 6.74$; $SD = 5.50$) on the CDI, $t(159) = 1.20$, n.s. Only two of 11 t -tests revealed significant gender differences in social functioning: On the IPSQ, boys ($M = 5.48$; $SD = 2.31$) endorsed significantly fewer sociable problem-solving strategies than did girls ($M = 6.43$; $SD = 1.80$), $t(99) = 2.31$, $p < .05$, and boys ($M = 1.42$; $SD = 1.49$) endorsed significantly more hostile strategies than did girls ($M = .78$; $SD = 1.08$), $t(90) = 2.45$, $p < .05$. Because two differences were no more than would be expected by chance, and because a series of two-way univariate analyses of variance (Low- vs. High-CDI \times Gender) yielded no significant main or interaction effects for gender on any of the social functioning indices, we combined data from boys and girls for future analyses.⁵ Wherever directional hypotheses were made, one-tailed significance levels are reported. Degrees of freedom vary across analyses due to differences in the availability of measures.

Comparisons Between Low- and High-CDI Groups

A series of t -tests was conducted to compare the relative social functioning of children in the low- and high-CDI groups on child reports, teacher reports, and behavioral observations of competence. We were un-

⁵Correlations were also computed between age and the social functioning indices. Only one of 11 tests was significant: Sociable problem-solving increased slightly with age, $r(99) = .21$, $p < .05$. Because low- and high-CDI groups did not differ in age, and a two-way ANOVA (Low- vs. High-CDI \times Age) showed no interaction effects, we chose to collapse across age groups.

able to employ a multivariate analysis on the complete set of social functioning indices due to variations in sample size; instead, a Bonferroni adjustment ($p < .0045$) was applied.

Table I shows that high-CDI children endorsed significantly fewer sociable and more hostile problem-solving strategies, were more impaired on all qualitative aspects of the conflict task, and were described by teachers as more rejected by peers. No group differences were found on passive strategies, teacher ratings of prosocial or aversive behavior, or the overall observed rate of interaction.

We also compared the two symptom groups on the partner ratings subsequent to the conflict task. Partners who interacted with high-CDI children ($M = 3.27$; $SD = .65$) reported that they liked playing with their peers less than those who interacted with low-CDI children ($M = 3.83$; SD

Table I. *T* Tests for Low-CDI and High-CDI Groups on Social Functioning Measures^a

	Low CDI	High CDI	<i>t</i> -value	<i>df</i>	<i>p</i> -value ^b
IPSQ—Sociable	6.70 (1.98)	4.94 (1.72)	4.04	72	.001
IPSQ—Hostile	.60 (1.13)	1.74 (1.38)	3.90	72	.001
IPSQ—Passive	2.70 (1.70)	3.32 (1.51)	1.65	72	.051
SBS—Prosocial	43.67 (11.62)	45.08 (9.22)	.48	50	.316
SBS—Aversive	16.93 (12.00)	21.00 (12.12)	1.22	50	.115
Conflict task ^c					
Competence	11.64 (6.34)	22.86 (2.85)	4.41	8	.002
Affect regulation	7.64 (2.02)	18.00 (5.36)	5.80	14	.001
Rate of interaction	5.79 (.91)	5.23 (1.37)	.95	16	.178
Dyadic quality	9.00 (3.49)	21.55 (5.38)	5.45	16	.001
Peer response	4.79 (1.73)	13.14 (5.05)	5.04	13	.001
Teacher-rated peer rejection	1.81 (.95)	2.80 (1.00)	3.99	59	.001

^aCDI = Children's Depression Inventory; IPSQ = Interpersonal Problem-Solving Questionnaire; SBS = Social Behavior Scale. IPSQ—Sociable, SBS—Prosocial, and Rate of Interaction are coded in the positive direction. For all other measures, *higher* scores represent *decreased* social competence. Numbers in parentheses are *SD*. Bonferroni correction $p < .0045$.

^bOne-tailed significance levels.

^cDegrees of freedom vary according to whether pooled or separate variance estimate was used.

= .41), $t(15) = 1.91, p < .05$, one-tailed. Partners of high-CDI children ($M = 2.82; SD = .75$) were also less likely to believe that their peers liked playing with them than were partners of low-CDI children ($M = 3.67; SD = .52$), $t(15) = 2.45, p < .05$, one-tailed. Finally, high-CDI children were rated by their partners as more internalizing ($M = 5.09; SD = 1.22$) than were low-CDI children ($M = 3.50; SD = .84$), $t(15) = 2.83, p < .01$, one-tailed.

Specificity of Relations Between Depressive Symptoms and Social Functioning

The second step was to determine whether social maladjustment was specific to children with depressive symptoms, or was equally associated with anxiety. We selected the IPSQ ($n = 101$) and teacher ratings of peer rejection ($n = 81$) as outcome variables for two reasons: Both had shown significant relations to CDI scores and were available for a sufficient number of children.

Zero-order correlations revealed that anxiety symptoms were modestly, but significantly, related to the number of IPSQ sociable, $r(99) = -.24, p < .01$, and passive, $r(99) = .19, p < .05$, strategies endorsed, and to teacher-rated peer rejection, $r(79) = .24, p < .05$. However, CDI and RCMAS scores were themselves strongly correlated, $r(159) = .70, p < .0001$. Thus, the *relative* contribution made by depressive and anxiety symptoms to the prediction of social functioning was examined via a series of multiple regressions. To protect against the explanatory power of depressive symptoms, we performed a hierarchical procedure in which RCMAS scores were entered first, followed by CDI scores.

Depressive symptoms added a significant increment to the prediction of sociable strategies (change $R^2 = .06, t = 2.71, p < .01$, two-tailed) and rejection (change $R^2 = .04, t = 2.80, p < .01$, two-tailed); anxiety dropped from the equation once CDI scores were entered. Anxiety symptoms made a significant *negative* contribution to the prediction of hostility ($t = 1.96, p = .05$, two-tailed), whereas depressive symptoms made a significant *positive* contribution ($t = 4.04, p < .0005$, two-tailed). Anxiety symptoms contributed to the prediction of passivity at the first step of the regression, $F(1, 99) = 3.89, p = .05$, but neither type of symptom contributed significantly once both variables were entered. Thus, decreased sociability, increased hostility, and peer rejection seemed to be specific to depression, whereas decreased hostility seemed to be specific to anxiety.

Effects of Cooccurring Symptoms on Social Functioning

Our next goal was to compare functioning in groups of children with pure and mixed symptom patterns. We selected a cutoff score representing approximately the top one-third of the sample for each of the three measures of symptomatology—CDI (9 or above), RCMAS (14 or above), and Conners (8 or above). We then formed four distinct symptom groups: (1) low symptom ($n = 58$), which scored below the cutoff on all three measures; (2) pure internalizing ($n = 42$), which scored at or above the cutoff on either the CDI or RCMAS, or both, and below the cutoff on the Conners; (3) pure externalizing ($n = 29$), which scored below the cutoff on both the CDI and the RCMAS and at or above the cutoff on the Conners; and (4) mixed symptom ($n = 28$), which scored at or above the cutoff on either the CDI or RCMAS, or both, and at or above the cutoff on the Conners. (Note that the number of children in each symptom group for subsequent analyses varied according to the specific measure; cell sizes are specified in Table II).

Separate one-way ANOVAS were conducted with symptom group representing a between-subjects factor. Six indices of social functioning served as dependent variables: sociable, hostile, and passive problem-solving scores ($n = 98$), prosocial behavior ($n = 75$), aversive behavior ($n = 75$), and peer rejection ($n = 81$). The conflict task was not included due to the small sample size. Analyses yielded significant overall effects for sociable and hostile problem-solving, aversive behavior, and peer rejection (effects survived a Bonferroni correction, $p < .008$). No overall differences were found among groups for passive strategies or prosocial behavior. Means and standard deviations are displayed in Table II.

Univariate ANOVAS were followed by a series of planned contrasts to explore the pattern of effects for each measure (see Table II). Contrasts for the IPSQ revealed that the mixed symptom group endorsed significantly fewer sociable and more hostile strategies than did the low symptom and pure externalizing groups; the pure internalizers endorsed fewer sociable and more hostile strategies than did the low symptom group. Teachers reported that the low symptom group displayed fewer aversive behaviors toward peers than each other group. The mixed symptom group was reported to display more aversive behaviors than each group. Pure externalizers demonstrated more aversive behaviors than pure internalizers. Finally, low symptom children were less rejected than the three other groups, and mixed symptom children were more rejected than pure internalizers.

Table II. Mean Scores and Standard Deviations on Social Functioning Measures by Symptom Groups^a

	Symptom groups				Significant contrasts	<i>p</i> ^b
	Low symptom 1	Internalizers 2	Externalizers 3	Mixed 4		
IPSQ—Sociable ^d	6.73 (1.85) (37)	5.29 (1.85) (24)	6.33 (2.54) (18)	4.89 (2.02) (19)	1>2 1>4 3>4	.004 .001 .017
IPSQ—Hostile	.62 (.86)	1.46 (1.61)	.89 (1.49)	1.84 (1.21)	1<2 1<4 3<4	.013 .001 .041
IPSQ—Passive	2.65 (1.75)	3.25 (1.54)	2.78 (1.96)	3.26 (1.66)	n.s.	
SBS—Prosocial	41.68 (13.96)	43.62 (11.33)	43.35 (9.03)	45.33 (6.43)	n.s.	
SBS—Aversive ^e	10.00 (4.02) (25)	13.62 (7.32) (21)	24.88 (11.88) (17)	32.58 (9.20) (12)	1<2 1<3 1<4 2<3 2<4 3<4	.026 .001 .001 .002 ^f .001 .030
Rejection	1.47 (.84) (32)	2.48 (.87) (21)	2.67 (.49) (12)	3.00 (1.10) (16)	1<2 1<3 1<4 2<4	.001 .001 .001 .037

^aIPSQ = Interpersonal Problem-Solving Questionnaire; SBS = Social Behavior Scale. IPSQ—Sociable and SBS—Prosocial are coded in the positive direction. For all other measures, *higher* scores represent *decreased* social competence. Numbers in parentheses are *SD* and cell sizes.

^bOne-tailed significance levels unless otherwise noted.

^cTwo-tailed significance levels.

^dSame *n* values apply for IPSQ—Hostile and IPSQ—Passive.

^eSame *n* values apply for SBS—Prosocial.

Association Between Symptom Groups and Sociometric Categories

Our final question concerned the relation between symptom profiles and sociometric categories (*n* = 81). We predicted that (a) low symptom children would most likely be categorized as social stars or average in popularity, (b) pure internalizers would most likely be categorized as neglected, and (c) pure externalizers and mixed symptom would most likely be categorized as disliked. A chi-square test using symptom group and sociometric status type as four-level factors was highly significant, $\chi^2(9) = 43.72$, *p* < .0001. Percentages of children falling into the four sociometric categories (social star, average, disliked, neglected) were as follows: low symptom

(60%, 31%, 6%, 3%), pure internalizers (5%, 81%, 0%, 14%), pure externalizers (0%, 67%, 25%, 8%), and mixed symptom (13%, 31%, 25%, 31%).

DISCUSSION

Consistent with an interpersonal perspective on depression, there were significant associations between depressive symptomatology and social deficits and problematic peer relationships. Even in a nonclinical sample with mild levels of depressive symptoms, findings were relatively robust across three different sources of information and an array of assessment methods. These results held for both boys and girls, and relations were independent of sex and age. Moreover, direct observation revealed that the presence of depressive symptoms cast a negative light on the overall nature of dyadic transactions, which were marked by increased conflict and friction, and decreased collaboration, joint problem-solving, and mutuality. Depressive behaviors appeared to evoke discomfort, negative affect, and rejection from peers. Interestingly, peers were also more likely to conclude that children with elevated CDI scores did not like playing with them. Although results from the conflict task are only tentative due to the small sample size, they provide an initial glimpse into the process by which depressed children may foster interpersonal dysfunction.

Previous data have been conflicting as to the specific social disturbances associated with child depression. Some studies paint a picture of depressed children as submissive, withdrawn, and isolated, whereas others characterize them as impulsive, aggressive, and rejected. When we considered depressive symptoms alone in the *t*-test analyses, impairment seemed to assume the latter form. That is, symptoms were related to hostile problem-solving and conflictual peer exchanges, rather than to passive problem-solving or disengagement during the conflict task.

However, our results illustrate the importance of adopting a more complex approach to investigating the depression–competence linkage. Our data on specificity suggest that prior conclusions regarding the association between anxiety and peer difficulties may have been based on misleading information. Although anxiety symptoms were significantly related to decreased sociable problem-solving scores and increased peer rejection, regression analyses indicated that these links may have been an artifact of the high anxiety–depression correlation. Moreover, different patterns of problem-solving seemed to be associated with different types of internalizing psychopathology: Whereas depressive symptoms predicted *increased* hostility, anxiety symptoms predicted *decreased* hostility.

Findings also underscore the need to take into account the cooccurrence of internalizing and externalizing symptoms, and may shed light on the heterogeneity previously reported in studies of interpersonal functioning and depression. As predicted, social impairment appeared to be most pronounced in the mixed symptom group. The potential confound created by overlooking externalizing symptoms was particularly salient in our analyses of the Social Behavior Scale. If we had merely compared low- versus high-CDI groups, we might have mistakenly concluded that depressive symptoms were unrelated to the display of aversive behavior toward peers. However, when more specific symptom profiles were examined, striking group differences were found: The mixed symptom group demonstrated significantly more aversive behavior than both of the pure symptom groups. Thus, the *combination* of internalizing and externalizing symptoms seemed particularly problematic. The danger of applying a unidimensional categorization of psychopathology—i.e., depressive versus nondepressive—is further highlighted by the distinct profiles of functioning in the two nondepressive groups (low symptom vs. pure externalizing).

The distribution of symptom groups by sociometric categories was also quite revealing. In accordance with predictions, low symptom children were generally categorized as social stars or average in popularity. Contrary to predictions, pure internalizers tended to be categorized as average, rather than neglected. Children with mixed symptoms were the most likely to be categorized as unpopular—either disliked or neglected. However, it is noteworthy that although children with pure internalizing symptoms were generally not described as unpopular, they were also rarely described as social stars. This finding meshes with an overall picture of this group as functioning at an intermediate level.

The present study adds to a growing data base suggesting that the negative self-perceptions of depressed children may, in part, reflect very realistic interpersonal difficulties. Yet this group may also manifest cognitive distortions above and beyond actual competence deficits. One potentially fruitful direction for research may be the construction of more comprehensive models that consider the interplay between cognitive and interpersonal domains. Developing a more complete understanding of underlying processes may also require the assessment of other important aspects of children's lives, such as family relationships or ongoing stress. These contextual factors may exert significant effects on both mood and social functioning, either independently from, or in combination with, cognitive disturbances (e.g., see Hammen, 1992).

Additionally, much of the literature to date, including the current study, has focused on links between social adjustment and self-reported depressive symptoms, as measured by the CDI. Generalizing these findings

to clinical depression will require cross-validation within psychiatric samples. Likewise, in this study the Conners' Rating Scale served as only a brief index of externalizing symptoms. The impact of comorbid symptomatology will need to be examined further in the context of diagnostic subgroups of children with depression and more severe disruptive behavior disorders.

Our results are also limited by their cross-sectional nature, and leave us wondering about the causal relation between depression and social impairment. A stress-reaction model would hold that disruptions in interpersonal functioning may place children at risk for depression, perhaps through decreased social contact and positive reinforcement (e.g., Wierzbicki & McCabe, 1988). Alternatively, a stress-generation model would argue that early onset of depression may hamper social development, thereby setting the stage for future maladjustment (e.g., Gotlib & Hammen, 1992). Although we cannot draw causal conclusions from correlational data, preliminary results from the conflict task do suggest that children at least play a role in shaping their social contexts, in that depressive behaviors seemed to engender dyadic conflict and negative responses from *unfamiliar* peers.

A final word should be said about the therapeutic implications of this line of research. If, on the one hand, depressive symptoms give rise to peer difficulties, alleviation of symptoms may have a secondary effect on social competence. If, on the other hand, depression represents a byproduct of interpersonal impairment, skill-building techniques may be needed to decrease children's vulnerability to depression. Thus, clarifying the mechanisms by which social difficulties arise and are perpetuated in depressed children may help to inform the development of appropriate intervention programs. In light of the diverse interpersonal profiles associated with pure versus mixed symptom patterns, these approaches may also need to be individually tailored to specific subgroups of depressed children.

REFERENCES

- Altmann, E. O., & Gotlib, I. H. (1988). The social behavior of depressed children: An observational study. *Journal of Abnormal Child Psychology, 16*, 29-44.
- Asarnow, J. R. (1988). Peer status and social competence in child psychiatric inpatients: A comparison of children with depressive, externalizing, and concurrent depressive and externalizing disorders. *Journal of Abnormal Child Psychology, 16*, 151-162.
- Blechman, E. A., McEnroe, M. J., Carella, E. T., & Audette, D. P. (1986). Childhood competence and depression. *Journal of Abnormal Psychology, 95*, 223-227.
- Cicchetti, D., & Schneider-Rosen, K. (1984). Toward a transactional model of childhood depression. In D. Cicchetti & K. Schneider-Rosen (Eds.), *Childhood depression: New directions for child development* (pp. 5-27). San Francisco: Jossey-Bass.

- Cole, D. A. (1990). Relation of social and academic competence to depressive symptoms in childhood. *Journal of Abnormal Psychology, 99*, 422-429.
- Conners, C. K. (1973). Rating scales for use in drug studies with children [Special issue — Pharmacotherapy with children]. *Psychopharmacology Bulletin, 24-29*.
- Coyne, J. C. (1976). Depression and the response of others. *Journal of Abnormal Psychology, 85*, 186-193.
- Doerfler, L. A., Mullins, L. L., Griffin, N. J., Siegel, L. J., & Richards, C. S. (1984). Problem-solving deficits in depressed children, adolescents, and adults. *Cognitive Therapy and Research, 8*, 489-500.
- Gotlib, I. H., & Hammen, C. L. (1992). *Psychological aspects of depression: Toward a cognitive-interpersonal integration*. London: Wiley.
- Gurtman, M. (1986). Depression and the response of others: Reevaluating the reevaluation. *Journal of Abnormal Psychology, 95*, 99-101.
- Hammen, C. (1992). Cognitive, life stress, and interpersonal approaches to a developmental psychopathology model of depression. *Development and Psychopathology, 4*, 191-208.
- Hammen, C., & Goodman-Brown, T. (1990). Self-schemas and vulnerability to specific life stress in children at risk for depression. *Cognitive Therapy and Research, 14*, 215-227.
- Harrington, R., Fudge, H., Rutter, M., Pickles, A., & Hill, J. (1991). Adult outcomes of childhood and adolescent depression: II. Links with antisocial disorders. *Journal of the American Academy of Child and Adolescent Psychiatry, 30*, 434-439.
- Hops, H., & Greenwood, C. R. (1988). Social skills deficits. In E. J. Mash, & L. G. Terdal (Eds.), *Behavioral assessment of childhood disorders* (pp. 263-314). New York: Guilford Press.
- Jacobsen, R. H., Lahey, B. B., & Strauss, C. C. (1983). Correlates of depressed mood in normal children. *Journal of Abnormal Child Psychology, 11*, 29-40.
- Kazdin, A. E., Esveldt-Dawson, K., Sherick, R. B., & Colbus, D. (1985). Assessment of overt behavior and childhood depression among psychiatrically disturbed children. *Journal of Consulting and Clinical Psychology, 53*, 201-210.
- Kennedy, E., Spence, S. H., & Hensley, R. (1989). An examination of the relationship between childhood depression and social competence amongst primary school children. *Journal of Child Psychology and Psychiatry, 30*, 561-573.
- Kovacs, M. (1980/1981). Rating scales to assess depression in school-aged children. *Acta Paedopsychiatry, 46*, 305-315.
- Patterson, G. R., & Stoolmiller, M. (1991). Replications of a dual failure model for boys' depressed mood. *Journal of Consulting and Clinical Psychology, 59*, 491-498.
- Puig-Antich, J., Lukens, E., Davies, M., Goetz, D., Brennan-Quattrochio, J., & Todak, G. (1985). Psychosocial functioning in prepubertal major depressive disorders: Interpersonal relationships during the depressive episode. *Archives of General Psychiatry, 42*, 500-507.
- Renouf, A. G., & Harter, S. (1990). Low self-worth and anger as components of the depressive experience in young adolescents. *Development and Psychopathology, 2*, 293-310.
- Reynolds, C. R., & Richmond, B. O. (1978). What I think and feel: A revised measure of children's manifest anxiety. *Journal of Abnormal Child Psychology, 6*, 271-284.
- Rudolph, K. D. (1993). *Children's representations of self, family, and peers, social competence, and sociometric status*. Manuscript submitted for publication.
- Sacco, W. P., & Graves, D. J. (1984). Childhood depression, interpersonal problem-solving and self-ratings of performance. *Journal of Clinical Child Psychology, 13*, 10-15.
- Strauss, C. C., Frame, C. I., & Forehand, R. (1987). Psychosocial impairment associated with anxiety in children. *Journal of Clinical Child Psychology, 16*, 235-239.
- Weisz, J. R., Rudolph, K. D., Granger, D. A., & Sweeney, L. (1992). Cognition, competence, and coping in child and adolescent depression: Research findings, developmental concerns, therapeutic implications. *Development and Psychopathology, 4*, 627-653.
- Werry, J. S., Sprague, R. L., & Cohen, M. N. (1975). Conners' Teacher Rating Scale for use in drug studies with children — An empirical study. *Journal of Abnormal Child Psychology, 3*, 217-229.

- Wierzbicki, M., & McCabe, M. (1988). Social skills and subsequent depressive symptomatology in children. *Journal of Clinical Child Psychology, 17*, 203-208.
- Zoccolillo, M. (1992). Cooccurrence of conduct disorder and its adult outcomes with depressive and anxiety disorders: A review. *Journal of the American Academy of Child and Adolescent Psychiatry, 31*, 547-556.