

Child-Reported Depression and Anxiety in Preadolescence: I. Associations With Parent- and Teacher-Reported Problems

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ABSTRACT

Objective: To examine a wide range of parent- and teacher-reported behaviors in relation to child-reported depression and anxiety in preadolescence. **Method:** Subjects were participants in a longitudinal study of 420 preschool children from the general population that started in 1989. At second follow-up 8 years later (ages 10–11 years), usable parent information was obtained for 358 children. For this study, 274 children for whom complete child, parent, and teacher reports were obtained at age 10 to 11 years were included. Measures included the Dimensions of Depression Profile for Children, the State-Trait Anxiety Inventory for Children, the Child Behavior Checklist/4–18, and the Teacher's Report Form. **Results:** Of 120 parent-reported problem items, only 11 and 9 were associated with child-reported depression and anxiety, respectively. For teachers, 33 and 20 items (of 120) were significantly associated with child-reported depression and anxiety, respectively, including items referring to withdrawal, anxiety, depression, social problems, and academic problems. **Conclusions:** Teachers are more likely than parents to notice internalizing problems and related problems such as social and academic problems in children reporting depression or anxiety. *J. Am. Acad. Child Adolesc. Psychiatry*, 2000, 39(11):1371–1378. **Key Words:** child report, parent report, teacher report, depression, anxiety.

Various authors have reported that many children who need mental health services do not receive those services (Verhulst and Van der Ende, 1997; Wu et al., 1999). Children who do receive professional mental health care are more likely to be children with externalizing problems, such as hyperactivity or conduct problems, than children with internalizing problems such as depression and anxiety (Cohen et al., 1991; Wu et al., 1999).

In attempting to explain the lack of referrals for children with internalizing problems, one might conclude that internalizing problems in children are not very ser-

ious and reflect transient problems that do not require professional help. However, Wu et al. (1999) reported that children's perception of the need for professional help is more related to depression than to disruptive disorders. Furthermore, child-reported internalizing problems have been found to predict internalizing problems as well as problems in adaptive functioning in later years (Ialongo et al., 1993, 1995), which illustrates the developmental seriousness of such problems. It seems that internalizing problems as reported by the child represent significant problems that warrant attention.

Considering these findings, as well as the fact that the referral of children is generally based on parental concern, the low rate of referrals of children with internalizing problems may therefore be due to a lack of parental awareness of such child-perceived problems. Internalizing problems refer to an inner mental state that, although salient to the child itself, may not be immediately obvious to parents or other adults such as teachers. Although certain internalizing behaviors such as social withdrawal, irritability, or separation anxiety may be observed by others, the underlying subjective mood may not necessarily be noticed. The results of several studies have indeed shown

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poorer agreement between child reports and other informants' reports of child internalizing problems than between child reports and other informants' reports of child externalizing problems (Herjanic and Reich, 1997; Kolko and Kazdin, 1993; Verhulst and Van der Ende, 1991). To enhance the referral of children with internalizing problems to mental health services, it is of special importance to investigate this issue and identify ways to improve the detection of child-perceived internalizing problems by others.

The apparent lack of parents' and teachers' awareness of child internalizing problems may be caused by several complications. First, internalizing and externalizing problems in children often co-occur (Gjone and Stevenson, 1997; Verhulst and Van der Ende, 1993). This overlap may represent *comorbidity* of internalizing and externalizing disorders, or it may reflect that some externalizing symptoms such as poor concentration are a *part* of internalizing disorders, or that externalizing symptoms are a behavioral *signal* for underlying internalizing problems. In all 3 cases, the greater visibility of externalizing symptoms compared with internalizing symptoms makes it more likely for externalizing symptoms to become the focus of referral and intervention, overshadowing the internalizing problems. Second, previous studies have focused only on the agreement between children and parents on the same internalizing symptoms. Because internalizing symptoms themselves are rather elusive to others, one may have to look for other observable behaviors that indirectly signal the presence of child-perceived internalizing problems. For instance, parents and teachers may notice impairment in competence areas such as social and academic functioning, which has been found to be associated with both childhood depression and anxiety (Masten and Coatsworth, 1995), although the former has received more systematic research attention.

The aim of this study is to investigate which parent- and teacher-reported broad behavioral syndromes and which of a broad range of specific behaviors signal the presence of child-perceived depression and anxiety in children from a general population sample. The investigation of a wide range of problem behaviors, including internalizing, as well as externalizing and social and academic problems may yield new viewpoints on the detection of internalizing problems in children. Furthermore, the investigation of this issue in a general population sample rather than a referred sample is especially useful, inasmuch as the main focus of this study is to identify

those children who are experiencing internalizing problems but who are not receiving the necessary professional help.

METHOD

Sample and Procedure

Subjects were participants in the second follow-up of a longitudinal study of preschool children from the general population (Koot, 1993; Koot et al., 1997; Koot and Verhulst, 1991). The original time 1 sample of preschool children was drawn randomly and stratified by age and sex from the inoculation register of the Dutch province of Zuid-Holland, which included all 2- to 3-year-olds in the province (excluding Rotterdam), and from the Rotterdam municipal population register. At time 1 (1989) the sample consisted of 420 children aged 2 to 3 years (mean age 2.56, SD = 0.80; 215 boys and 205 girls; response: 91% of target sample). In 1991, 2 years after the first time of measurement, the sample was approached again for a follow-up study (time 2). Usable parent information was obtained for 397 of the 420 children participating at time 1 (94.5%, 204 boys, 193 girls; mean age 5.31, SD = 0.64).

In August 1997, all 420 respondents who participated at time 1 received a letter asking them to participate in a second follow-up (time 3), regardless of their participation at time 2. The procedures for all 3 times of assessment were approved by the medical-ethical committee of the Erasmus University Rotterdam/University Hospital Dijkzigt. After receiving a letter, respondents were contacted by telephone to obtain consent to send them a package of questionnaires for the second follow-up. Twenty-three parents refused to participate, 2 of whom did so because their children had problems and were already subjected to many tests and questions from mental health institutes. Furthermore, 14 parents had unlisted phone numbers and did not respond to subsequent letters asking them to contact us; 3 respondents could not be located. The parents of one child with Down syndrome as well as parents of a child with diagnosed autism asked to be removed from the sample, because the questionnaires were inappropriate for these children. Finally, 378 parents gave consent to send them a package of questionnaires and agreed to fill these out and send them back to us; 20 of these never did. Usable written parent information was obtained for 358 children, the respondents being primarily the mothers (85.2% of the original 1989 time 1 sample, 180 boys, 178 girls; mean age 10.9 years, SD = 7.2 months, age range 9.75–12.5 years). The majority of written parent information was obtained during September to November 1997. The average time between time 1 and time 3 was 7.90 years (SD = 0.17, range 7.42–8.67 years).

Included in the mailing to the parents was a form asking for permission to send the child's teacher and the child a number of questionnaires. To avoid parental interference, teachers were asked to permit children to fill out their questionnaires at school. Usable teacher information was obtained for 294 (82.1%) of the 358 participants at time 3. Forty-seven parents did not give their consent to approach teachers, and of the 311 teachers for whom parental consent was obtained, 17 never returned their questionnaires. For the children's reports, parental consent was obtained in 314 cases. Of these, 16 questionnaires were never returned and 5 returned questionnaires were incomplete. Usable child reports were obtained for 293 children (81.8%). The majority of teacher and child information was obtained in the period from November 1997 to January 1998.

Instruments

All instruments have been found reliable and valid by their authors. If information about validity and reliability in Dutch samples is available, this will be noted.

Child Reports

The Dimensions of Depression Profile for Children (DDPC) (Appleton et al, 1997; Harter and Nowakowski, 1987) assesses a number of specific aspects of depression in children; it contains 30 four-point items. We used the DDPC rather than other available self-reports of depression because it contains 5 subscales that reflect different aspects of depression rather than one broad overall depression scale. These subscales include Depressed Mood, Self-Blame, Low Energy/Interest, Suicidal Thoughts, and Low Global Self-Worth. Factor analysis replicated this scale structure perfectly in our sample. However, for the present study, only the total depression score was used, which is computed by summing the 5 subscale scores. Alpha values for subscales in the present study were all greater than .79. Subscale-total score correlations were highest for Depressed Mood (.85) and Low Global Self-Worth (.81).

The State-Trait Anxiety Inventory for Children (STAIC) (Spielberger, 1973) measures anxiety at the time of assessment (state anxiety) and dispositional anxiety (trait anxiety). Both scales contain 20 items which are scored on a 3-point Likert scale. For the present study, only the Trait Anxiety scale was used ($\alpha = .83$ in the present study). To our knowledge, the STAIC is the only internationally used self-report of anxiety that has been translated and validated for the Dutch situation (Bakker et al., 1989).

Parent and Teacher Reports

The Child Behavior Checklist/4-18 (CBCL/4-18) (Achenbach, 1991a) and the Teacher's Report Form (TRF) (Achenbach, 1991b) were completed by parents and teachers, respectively, to obtain standardized reports of children's problem behavior. On both instruments, the items are scored on a 3-point scale, 0 if the item is "not true" of the child, 1 if the item is "somewhat or sometimes true," and 2 if the item is "very true or often true." Achenbach (1991c) constructed 8 cross-informant narrow-band syndromes, labeled Withdrawn, Somatic Complaints, and Anxious/Depressed (which form the broad-band Internalizing scale); Delinquent Behavior and Aggressive Behavior (which form the broad-band Externalizing scale); and Social Problems, Thought Problems, and Attention Problems. The good reliability and discriminative validity established by Achenbach (1991c), as well as the factor structures, were confirmed for the Dutch translations, supporting the cross-cultural validity of the instrument (De Groot et al., 1994, 1996; Verhulst et al., 1985a,b).

Statistical Analyses

First, the depression and anxiety reports from children were examined closely. We performed *t* tests to examine sex differences in mean scale scores, and the correlation between both measures was computed. Second, to investigate the association between child-reported depression and anxiety and parent- and teacher-reported syndromes, Pearson correlations between the DDPC and STAIC total scores and the CBCL and TRF syndromes were computed. Furthermore, linear regression analyses (method enter) were performed to investigate the total proportion of variance in child-reported depression and anxiety explained by the CBCL and TRF narrow-band syndromes. Finally, to gain more insight into the specific behaviors that parents and teachers report if a child reports

elevated levels of depression or anxiety, the DDPC and STAIC scores were dichotomized using a cutoff at 1 SD above the mean and dichotomized CBCL/TRF items were defined as 0 (not true) versus 1 (somewhat or sometimes true) and 2 (very true or often true). Odds ratios between the child reports and dichotomized CBCL/TRF items were computed.

Sample Attrition

For this article, only those subjects were included for whom complete time 3 child reports were available, as well as complete CBCL and TRF data ($N = 274$). To ensure that this subsample did not suffer from selective attrition, a series of *t* tests and χ^2 tests were performed. The *t* tests revealed no significant differences in comparison with the respective remaining children from the original sample on the time 1 CBCL Total Problems ($t = 0.21$, $df = 418$, $p = .83$), Internalizing ($t = 0.68$, $df = 418$, $p = .50$), or Externalizing scores ($t = -0.15$, $df = 418$, $p = .88$). Neither were there differences on the time 3 CBCL Total Problems ($t = 0.79$, $df = 356$, $p = .43$), Internalizing ($t = 0.31$, $df = 356$, $p = .76$), or Externalizing scores ($t = 0.32$, $df = 356$, $p = .75$). Furthermore, χ^2 tests showed that the current sample was not significantly different from the respective remaining samples regarding sex ($\chi^2 = 0.83$, $df = 1$, $p = .36$), socioeconomic status ($\chi^2 = 4.56$, $df = 2$, $p = .10$), or time 1 risk factors such as parent-reported family mental health service use ($\chi^2 = 0.48$, $df = 1$, $p = .49$), nonparental care ($\chi^2 = 0.81$, $df = 1$, $p = .37$), parenting stress ($\chi^2 = 0.10$, $df = 1$, $p = .75$), or parental physical punishment of the child ($\chi^2 = 1.06$, $df = 1$, $p = .30$). These results lead us to conclude that the subsample used in this study was not influenced by selective attrition.

RESULTS

Child-Reported Depression and Anxiety

The *t* tests revealed no significant sex differences regarding means of the depression total score ($t = -0.50$, $df = 272$, $p = .62$), the anxiety total score ($t = -1.90$, $df = 272$, $p = .058$), or any of the depression subscales, although there was a nonsignificant tendency for girls to have higher anxiety scores than boys. The correlations between the child report measures of depression and anxiety were high, and they were similar for boys (0.62) and girls (0.68).

Correlations With CBCL/TRF Syndromes

Table 1 shows that the correlations between child-reported depression and anxiety and parent- and teacher-reported behavioral syndromes were generally small, or medium at best according to Cohen's criteria (Cohen, 1988). For both child-reported depression and anxiety, correlations were generally higher and more often significant for the teacher-reported syndromes than for parent-reported syndromes. The teacher-reported syndromes Anxious/Depressed, Withdrawn, and Social

TABLE 1
Correlations Between Parent-Reported (CBCL) and Teacher-Reported (TRF) Behavioral Syndromes and Child-Reported Depression and Anxiety ($N = 274$)

CBCL/TRF Syndromes	Depression		Anxiety	
	Parents	Teachers	Parents	Teachers
Withdrawn	—	0.30	—	0.23
Somatic Complaints	0.14	0.18	—	—
Anxious/Depressed	—	0.30	0.13	0.30
Social Problems	0.17	0.31	—	0.34
Thought Problems	—	0.12	—	0.14
Attention Problems	0.15	0.23	0.13	—
Delinquent Behavior	—	—	—	—
Aggressive Behavior	0.13	—	—	—
Internalizing	0.13	0.32	—	0.30
Externalizing	0.13	—	—	—
Total Problems	0.14	0.27	0.13	0.14
Adjusted R^2 ^a	0.02	0.11	0.01	0.08

Note: Only significant correlations are shown. Dashes indicate non-significant correlations. CBCL = Child Behavior Checklist; TRF = Teacher's Report Form.

^aProportion of explained variance derived from linear regression analyses, with the child reported as dependent variables, and the 8 CBCL/TRF narrow-band syndromes as independent variables.

Problems were most strongly related to both child-reported depression and anxiety. Child-reported depression, but not anxiety, was also significantly related to parent-reported aggressive behavior and externalizing problems. Additional linear regression analyses showed that the proportions of explained variance of child-reported depression and anxiety were very low for the CBCL syndromes (1% and 2%, respectively) and slightly higher for TRF syndromes (11% and 8%, respectively).

Odds Ratios With CBCL/TRF Items

Table 2 shows the relative risk for child-reported depression and anxiety regarding the CBCL/TRF items which were grouped according to the cross-informant syndromes. Similar to the findings regarding the CBCL/TRF syndromes, the teacher-child odds ratios were generally higher and more often significant than the parent-child odds ratios. For parents, only 11 of the 120 items were significantly related to child-reported depression. These items belonged to 5 different syndromes, including only 2 from the internalizing syndromes Withdrawn and Anxious/Depressed, but there were 4 items from the Aggressive Behavior syndrome. Only 9 parent-reported items were significantly related to child-reported anxiety, 3 of which were from the Anxious/Depressed syndrome. The parent-reported items "lonely"

and "demands attention" were related to both depression and anxiety.

For teachers, 33 items were significantly related to child-reported depression, most of which belonged to the internalizing syndromes Withdrawn or Anxious/Depressed (e.g., "unhappy," "lonely"), the Social Problems syndrome (e.g., "doesn't get along with peers," "gets teased"), the Attention Problems syndrome (e.g., "difficulty learning," "poor school work"), or the Aggressive Behavior syndrome (e.g., "jealous," "screams"). A number of teacher-reported items from the "other" category were also significantly associated with child-reported depression (e.g., "feels dizzy," "stores up things"), but most were associated with large confidence intervals, diminishing the reliability of these findings.

Twenty teacher-reported items were significantly associated with child-reported anxiety, the majority of which belonged to the Anxious/Depressed syndrome (e.g., "lonely," "feels too guilty"), the Social Problems syndrome (e.g., "gets teased," "not liked by peers"), or the "other" category (e.g., "feels dizzy," "sleeps in class"). Odds ratios with items from the latter category were generally based on very few children, which is evidenced by large confidence intervals. Fifteen of the 20 teacher-reported items that were significantly related to child-reported anxiety were also related to child-reported depression. Only the CBCL/TRF item "lonely" was significantly related to both child-reported depression and anxiety for both parent and teacher reports.

DISCUSSION

The goal of this study was to identify which parent- and teacher-reported behaviors signal the presence of child-reported depression and anxiety. Results showed that, at the syndrome level, child-perceived depression and anxiety are only marginally related to parent-reported problems, while they are moderately related to teacher-reported problems. Consistent with previous studies, correlations between child-reported internalizing problems and parent- and teacher-reported internalizing syndromes were small, or medium at best (Ivens and Rehm, 1988; Kolko and Kazdin, 1993; Stanger and Lewis, 1993). This was also evidenced by the low proportions of variance in child-reported depression and anxiety explained by the CBCL and TRF syndromes.

When we examined the more specific parent- and teacher-reported behaviors, results again revealed that

TABLE 2
Odds Ratios Between CBCL/TRF Items and Child-Reported Depression and Anxiety ($N = 274$)

CBCL/TRF Items per Syndrome	$(n/n)^b$	Depression ($n = 45$) ^a				Anxiety ($n = 44$) ^a			
		Parents		Teachers		Parents		Teachers	
		OR	(95% CI)	OR	(95% CI)	OR	(95% CI)	OR	(95% CI)
Withdrawn									
42. Would rather be alone	(68/60)	2.7	(1.4–5.2)	2.3	(1.2–4.6)	—	—	—	—
102. Underactive	(18/25)	—	—	4.1	(1.7–9.8)	—	—	3.4	(1.4–8.4)
103. Unhappy, sad, depressed ^c	(40/36)	—	—	5.8	(2.7–12.4)	—	—	3.8	(1.7–8.2)
Anxious/Depressed									
12. Lonely	(34/25)	2.9	(1.3–6.5)	6.0	(2.5–14.4)	2.5	(1.1–5.7)	5.1	(2.2–12.3)
33. Feels unloved	(53/25)	—	—	3.3	(1.4–8.1)	—	—	2.8	(1.1–6.9)
34. Feels persecuted	(82/62)	—	—	4.5	(2.3–8.9)	2.0	(1.0–3.9)	2.9	(1.5–5.8)
35. Feels worthless	(53/39)	—	—	3.2	(1.5–6.8)	—	—	2.8	(1.3–6.1)
45. Nervous, tense ^d	(106/101)	—	—	2.3	(1.2–4.3)	—	—	—	—
50. Fearful, anxious	(42/40)	—	—	2.6	(1.2–5.6)	3.0	(1.4–6.5)	2.3	(1.1–5.1)
52. Feels too guilty	(31/19)	—	—	4.3	(1.6–11.4)	—	—	4.4	(1.7–11.7)
89. Suspicious	(32/35)	—	—	3.8	(1.8–8.3)	—	—	—	—
106. Overly anxious to please	(NA/50)	NA	NA	—	—	NA	NA	2.2	(1.0–4.6)
112. Worries	(68/49)	—	—	2.5	(1.2–5.2)	—	—	—	—
Social Problems									
11. Too dependent	(71/55)	—	—	2.7	(1.3–5.4)	—	—	2.5	(1.2–5.0)
25. Doesn't get along with peers	(53/62)	—	—	3.2	(1.6–6.2)	—	—	2.3	(1.1–4.6)
38. Gets teased	(63/39)	2.7	(1.4–5.4)	5.7	(2.7–12.0)	—	—	5.1	(2.4–10.9)
48. Not liked by peers	(42/47)	—	—	3.1	(1.5–6.3)	—	—	2.8	(1.3–5.8)
64. Prefers younger kids	(58/34)	3.2	(1.6–6.3)	2.4	(1.1–5.5)	—	—	—	—
Attention Problems									
4. Fails to finish	(NA/70)	NA	NA	2.0	(1.0–4.0)	NA	NA	2.1	(1.1–4.2)
8. Can't concentrate	(129/129)	—	—	—	—	2.0	(1.0–3.9)	—	—
22. Difficulty following directions	(NA/74)	NA	NA	2.1	(1.1–4.0)	NA	NA	—	—
49. Difficulty learning	(NA/79)	NA	NA	2.6	(1.3–5.0)	NA	NA	—	—
60. Apathetic	(NA/58)	NA	NA	3.2	(1.6–6.3)	NA	NA	—	—
61. Poor school work	(27/57)	—	—	2.5	(1.3–5.1)	—	—	—	—
92. Underachieving	(NA/40)	NA	NA	—	—	NA	NA	2.3	(1.1–5.1)
Delinquent Behavior									
26. Lacks guilt	(60/46)	—	—	2.5	(1.2–5.3)	—	—	—	—
90. Swearing, obscenity	(66/23)	2.2	(1.1–4.4)	—	—	—	—	—	—
Aggressive Behavior									
19. Demands attention	(118/78)	2.3	(1.2–4.4)	—	—	2.2	(1.1–4.2)	2.8	(1.4–5.4)
21. Destroys others' things	(13/21)	3.5	(1.1–11.1)	—	—	—	—	—	—
24. Disturbs other pupils	(—/81)	—	—	2.2	(1.1–4.3)	—	—	—	—
27. Jealous	(100/45)	—	—	2.9	(1.4–6.0)	—	—	—	—
68. Screams	(38/21)	—	—	2.8	(1.1–7.5)	—	—	—	—
76. Explosive	(—/32)	NA	NA	2.7	(1.2–6.2)	NA	NA	—	—
93. Talks too much	(98/88)	—	—	—	—	2.3	(1.2–4.3)	—	—
94. Teases	(62/42)	2.2	(1.1–4.4)	—	—	—	—	—	—
104. Loud	(70/47)	2.0	(1.0–4.0)	—	—	—	—	—	—
Other									
13. Confused	(10/36)	—	—	2.6	(1.2–5.9)	—	—	—	—
30. Fears going to school	(9/8)	—	—	5.5	(1.3–22.8)	4.5	(1.2–17.5)	—	—
51. Feels dizzy	(9/5)	—	—	8.1	(1.3–50.0)	—	—	8.3	(1.4–51.5)
55. Overweight ^e	(33/26)	2.6	(1.1–5.8)	3.1	(1.3–7.5)	—	—	2.6	(1.1–6.5)
59. Sleeps in class	(NA/9)	NA	NA	—	—	NA	NA	4.5	(1.2–17.5)
83. Stores up things	(37/5)	2.5	(1.1–5.6)	8.1	(1.3–50.0)	—	—	—	—
96. Thinks about sex too much	(6/6)	—	—	—	—	5.5	(1.1–28.4)	—	—
98. Thumb-sucking	(37/NA)	—	—	NA	NA	3.6	(1.7–7.8)	NA	NA
107. Dislikes school	(NA/23)	NA	NA	—	—	NA	NA	3.2	(1.3–8.1)
110. Unclean personal appearance	(NA/9)	NA	NA	7.0	(1.8–27.3)	NA	NA	—	—

Note: Only items with one or more significant odds ratios are shown. Dashes indicate nonsignificant odds ratios. CBCL = Child Behavior Checklist; TRF = Teacher's Report Form; OR = odds ratio; CI = confidence interval; NA = not applicable for this informant.

^a n deviant based on cutoff at 1 SD above the mean.

^b n deviant CBCL/ n deviant TRF (deviant = score 1 or 2).

^c Also in Anxious/Depressed.

^d Also in Attention Problems.

^e For parents in Social Problems syndrome.

parental reports of children's problem behaviors were very poor indicators of child-perceived internalizing problems compared with teachers' reports. Only 2 parent-reported internalizing items ("would rather be alone," "lonely") were significantly related to child-perceived depression, and 3 internalizing items ("lonely," "feels persecuted," "fearful, anxious") to child-perceived anxiety. It was striking that the parent-reported item "unhappy, sad, depressed" was not significantly related to child reports of depression, illustrating the lack of parental insight into their children's state of mind. For parents, it is signs of loneliness and withdrawal, rather than mood, that distinguish children with severe depression from others. For teachers, the majority of internalizing items were significantly related to child-perceived depression and anxiety, indicating that teachers are more sensitive to these problems in children than are parents.

A number of parent- and teacher-reported externalizing items were significantly associated with child-perceived depression, but not anxiety. Although both anxiety and depression have been found to be often comorbid with conduct disorder or oppositional defiant disorder, the rates of co-occurrence tend to be higher for depression than for anxiety (Fergusson et al., 1993; Simonoff et al., 1997). Furthermore, some models of depression posit that unacceptable disruptive behavior leads to peer rejection and problems in academic functioning, which in turn lead to depression (Patterson and Capaldi, 1990). Others have suggested that anger as expressed in aggression and conduct problems may be an integral part of depression in a significant subgroup of subjects (Renouf and Harter, 1990). Although the issue is still unresolved, our results do show that parents' and teachers' reports of externalizing behaviors are indicative of heightened risk for child-perceived depression. It must be noted, however, that these externalizing behaviors mostly represent general "acting-out" behavior ("demands attention," "jealous," "screams") and not antisocial behavior such as fighting or stealing.

Regarding social functioning, items from the Social Problems syndrome as reported by teachers, but not parents, were frequently related to both child-perceived depression and anxiety (e.g., gets teased, not liked by peers). This finding is consistent with results from previous research which has shown significant (reciprocal) associations between internalizing symptoms and problems in social functioning (Bell-Dolan et al., 1995; Rubin and Stewart, 1996). Regarding academic func-

tioning, a number of teacher-reported items from the Attention Problems syndrome were significantly associated with child-reported depression, and marginally to anxiety. Most of these items were specific to the TRF, as they represent behaviors related to academic functioning (e.g., fails to finish tasks, difficulty learning). The relationship between depression and academic problems is consistent with that found in previous studies (Cole, 1990; Slotkin et al., 1988). As with social problems associated with depression, it remains unclear whether this is due to the often-found comorbidity between attention-deficit hyperactivity disorder and depression (Biederman et al., 1991; Jensen et al., 1993), whether academic problems precede depression due to failure and negative feedback, or whether depressive symptoms such as lack of interest and low energy levels lead to academic problems. Regardless of the direction of causality, teachers' reports of inadequate social and academic functioning signal a heightened risk for child-perceived depression.

There may be several reasons for the apparent lack of parental awareness of child-perceived internalizing problems compared with teacher awareness. First, this insensitivity of parents to their child's internalizing problems may have been one of the causes of these problems in the first place. In the depression literature, a lack of parental involvement and insecure attachment have been implicated in the development of child depression (Hammen and Rudolph, 1996). Furthermore, inasmuch as both child depression and anxiety are strongly related to similar problems in parents (Rutter et al., 1990), it may be that the presence of such symptoms in parents hampers sensitivity to a child's feelings and needs. In contrast, a teacher's (in)sensitivity is not likely to be related to the cause of child internalizing problems. Second, because social and academic problems seem to be important indicators of child-perceived internalizing problems, the classroom setting may provide teachers with a better position to observe such problems than parents would have at home. Feelings of worthlessness, nervousness, or anxiety in children may be especially salient when they are confronted with peers with whom a certain level of social interaction is required, or with academic tasks that require concentration and a sense of self-competence. Finally, teachers can easily compare a child's behavior with that of a relatively large group of age-mates, which may enhance their sensitivity to deviations in behavior

and affect, while parents generally do not have such a standard with which to compare their children's behavior. This may be especially important, considering that children in elementary schools in the Netherlands generally have the same teacher every day, all day.

Clinical Implications

Consistent with results from previous studies, others, especially parents, seem relatively unaware of the child-perceived inner mental state of children, which illustrates the importance of child reports in the detection of internalizing problems such as depression and anxiety in children (Herjanic and Reich, 1997; Loeber et al., 1990). Furthermore, teachers are more aware of a child's inner mental state than parents, and it seems that the classroom provides them with a better setting to signal other aspects of functioning related to child-perceived internalizing problems, such as social and academic problems. Therefore, a more prominent role for teachers in the detection of child-perceived depression and anxiety needs to be considered. In this light, we examined the sensitivity and specificity of the TRF as a screening instrument for child-perceived depression and anxiety. The dichotomized TRF Internalizing syndrome (borderline cutoff at the 82nd percentile; see Achenbach, 1991b), showed a sensitivity of 0.42 and a specificity of 0.87 for child-reported depression and a sensitivity of 0.27 and specificity of 0.84 for child-reported anxiety. Because these figures are far from acceptable, we tried to improve the TRF's sensitivity by creating 2 new TRF syndromes that include all the items that were found to be significantly related to depression (33 items, score range 0–66) and anxiety (20 items, score range 0–40), respectively. For depression, a cutoff at score 11 yielded a sensitivity of 0.56 and a specificity of 0.86, and for anxiety, a cutoff at score 6 yielded a sensitivity of 0.43 and a specificity of 0.84. Although an increase in sensitivity was found, the TRF is still not (and does not aim to be) an acceptable screening instrument for child-perceived depression and anxiety. However, these findings do illustrate the importance of developing a teacher report instrument specifically designed for the detection of child-perceived depression and anxiety, which, to our knowledge, does not yet exist. As can be concluded from our results, such an instrument should include not only "standard" internalizing items, but also items referring to social and academic functioning and mild externalizing problems. The development of a

teacher screening measure may be the first step in enhancing the detection of children experiencing internalizing problems and promoting adequate referral to mental health services of these children.

Limitations

There were some limitations to this study. First, sex differences in the relation between child-perceived internalizing problems and parent- and teacher-reported behaviors were not examined. The number of boys and girls in the deviant depression and anxiety groups would be too low to ensure reasonable reliability of findings. Although no significant sex differences in child-reported depression and anxiety were found, it may be that depressed or anxious boys exhibit different behaviors than depressed or anxious girls exhibit, or that others notice different behaviors about those boys and girls. Further study is needed to investigate this issue. Second, only rating scales were used to assess child depression and anxiety. Therefore, the findings based on these measures cannot necessarily be generalized to clinical diagnoses of depression and anxiety. Third, the low correlations between the CBCL/TRF and the DDPC and STAIC may be due to the fact that the underlying constructs measured by these instruments are different. However, the low interinformant agreement for internalizing problems found in our study is consistent with results from other studies using the same instrument and construct for both informants (Herjanic and Reich, 1997; Kolko and Kazdin, 1993; Verhulst and Van der Ende, 1991). Furthermore, possible differences in constructs in our study would only be a valid explanation for the low associations on the syndrome level, and not for the results regarding the specific items of the CBCL and TRF, as these do not represent constructs, but single observable behaviors. Finally, the cross-sectional nature of this study did not allow for the identification of early parent- or teacher-observed behaviors that may signal the need for prevention rather than intervention efforts. Longitudinal investigations of this issue may shed more light on early signals of preadolescent child-reported internalizing problems.

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