

Child-Reported Depression and Anxiety in Preadolescence: II. Preschool Predictors

JUDI MESMAN, M.A., AND HANS M. KOOT, PH.D.

ABSTRACT

Objective: To examine the predictive association of parent- and teacher-reported behaviors at age 2 to 3 years in relation to child-reported depression and anxiety at age 10 to 11 years. **Method:** Subjects were participants in a longitudinal study of 420 children aged 2 to 3 years from the general population first assessed in 1989 and again in 1991 ($n = 397$) and 1997 ($n = 358$). For the present study, 249 children were included for whom all relevant measures were obtained. These measures include the Child Behavior Checklist (CBCL) for 2- to 3-year-olds at time 1, the CBCL for 4- to 18-year-olds and the Teacher's Report Form at time 2, and the Dimensions of Depression Profile for Children and the State-Trait Anxiety Inventory for Children at time 3. **Results:** Only 5 and 8 of 220 parent-reported preschool problem items were significantly related to later child-reported depression and anxiety, respectively, and only 3 of 120 teacher-reported problem items were related to later anxiety. Of 120 teacher-reported preschool problem items, 21 were significantly related to later depression, including items referring to early signs of depression and social and academic problems. **Conclusions:** Teachers, but not parents, can provide valuable information regarding preschool signals of preadolescent depression, but not anxiety. These signals include early social and academic problems. *J. Am. Acad. Child Adolesc. Psychiatry*, 2000, 39(11):1379–1386. **Key Words:** child report, depression, anxiety, longitudinal study.

Previous research has shown that child-reported internalizing problems such as anxiety and depression are only marginally noticed by significant others such as parents and teachers (Herjanic and Reich, 1997; Kolko and Kazdin, 1993). These studies highlighted the importance of the child's own perception in the identification of internalizing problems, which reflect an inner mental state that only the child himself or herself may be privy to. Part I of this study (Mesman and Koot, 2000) confirmed these findings, showing especially poor parental awareness of preadolescent internalizing problems as perceived by the child. However, the results showed that

teacher-reported child internalizing problems, as well as social and academic problems, were important indicators of child-reported internalizing problems (Mesman and Koot, 2000). The association between problems in social and academic functioning and child internalizing problems has also been found by other authors (Bowen et al., 1995; Cole, 1990; Hymel et al., 1990; Rubin et al., 1995; Strauss et al., 1987). These findings, however, were all based on cross-sectional data. For prevention purposes, we are also interested in the potential predictive validity of a wide range of early childhood problems as reported by parents and teachers in relation to later child-reported internalizing problems. This question is especially relevant considering a young child's limited ability to report inner mental states. Problem behaviors as noticed by others are the only potential indicators of a risk for later child-perceived internalizing problems.

To our knowledge, only one study has examined the predictive value of very early childhood problems (i.e., in kindergarten) as reported by others in relation to child-reported internalizing problems in later childhood. In a comprehensive study by Bowen et al. (1995), kindergarten measures of teacher-reported anxiety-withdrawal, peer-rated shyness and popularity, and mother-rated

Accepted May 18, 2000.

From the Department of Child and Adolescent Psychiatry, Sophia Children's Hospital/Erasmus University Rotterdam, the Netherlands.

This study is part of the longitudinal research project "Developmental Pathways of Psychopathology From Early to Middle Childhood," conducted at the Department of Child and Adolescent Psychiatry of the Sophia Children's Hospital in Rotterdam. The study is supported by grant 224 from the Sophia Foundation for Medical Research.

Reprint requests to Dr. Koot, Sophia Children's Hospital, Department of Child and Adolescent Psychiatry, P.O. Box 2060, 3000 CB Rotterdam; e-mail: koot@psys.azr.nl.

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adaptability were included as potential predictors of fifth grade teacher-rated anxiety-withdrawal, peer-rated social withdrawal, and child-rated internalizing symptoms. Their findings showed that none of the kindergarten measures significantly predicted child-reported internalizing problems in fifth grade. These results could lead to the conclusion that preadolescent child-perceived internalizing problems cannot be predicted from such an early age. However, as they themselves suggested, Bowen and colleagues included only a relatively limited array of kindergarten variables that did not include behaviors that may be more predictive of later childhood internalizing problems. Considering the results of part I of this study, one might argue that a wide range of more specific behaviors may yield a more comprehensive picture of potential predictors of preadolescent child-perceived internalizing problems.

Although no studies have examined a wide variety of kindergarten and preschool behaviors as potential predictors of preadolescent child-perceived depression and anxiety, theoretical models of the etiology and developmental course of internalizing problems have suggested several early markers. Theories of depression have focused on the importance of a lack of competence in several of areas of functioning, mainly emphasizing social and cognitive/academic problems (Cicchetti and Schneider-Rosen, 1986; Cole, 1991; Hammen and Rudolph, 1996; Patterson and Stoolmiller, 1991). In models of the development of anxiety in children, the role of early behavioral inhibition has been emphasized (Albano et al., 1996; Biederman et al., 1993; Hirshfeld et al., 1992). This construct refers to a temperamental style expressed as fearfulness and anxiety during the toddler years, specifically in the form of fear and avoidance of new and unfamiliar people or situations. In addition to the potential early markers of internalizing problems provided by these models, there is some evidence that preschool and kindergarten externalizing problems may also be important in the prediction of later internalizing problems (Egeland et al., 1996; Fischer et al., 1984).

The aim of this study is to identify broad as well as specific parent-reported early preschool (ages 2–3 years) and parent- and teacher-reported late preschool (ages 4–5 years) behavioral predictors of child-reported depression and anxiety in preadolescence in a general population sample. Included are preschool measures of psychopathology, temperament, child characteristics related to parenting stress, and school-related competence.

METHOD

The sample characteristics, procedure, and some of the instruments are described in part I of this study (Mesman and Koot, 2000). A brief summary follows, as well as a description of additional instruments.

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). 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). Usable teacher information was obtained for 342 children of the 420 children participating at time 1 (81.4%). At second follow-up in 1997 (time 3), usable written parent information was obtained for 358 children (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). Usable teacher information was obtained for 294 (82.1%) of the 358 participants at time 3, and complete child reports were obtained for 293 (81.8%) of the 358 participants at time 3.

Measures

Time 3 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 and contains 30 four-point items that form 5 subscales, each containing 6 items: Depressed Mood, Self-Blame, Low Energy/Interest, Suicidal Thoughts, and Low Global Self-Worth. A total depression score is computed by summing the 5 subscale scores.

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 this study, only the Trait Anxiety scale was used.

Time 1 Parent Reports. The Child Behavior Checklist/2–3 (CBCL/2–3) (Achenbach, 1992), which obtains parent reports of preschool children's problem behaviors, consists of 100 items. These 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," based on the preceding 2 months. In a study involving exploratory and confirmatory factor analyses in a community, a clinical, and a twin sample of Dutch preschool children by Koot et al. (1997), the CBCL/2–3 was found to have a factor structure that was somewhat different from that of the U.S. version (Achenbach, 1992). The following factors were found to be robust across the Dutch samples: Oppositional, Withdrawn/Depressed, Aggressive, Anxious, Overactive, Sleep Problems, and Somatic Problems. The psychometric properties of the Dutch CBCL/2–3 factors were comparable with Achenbach's findings in U.S. samples (Achenbach, 1992; Koot et al., 1997).

Time 2 Parent and Teacher Reports. The CBCL/4–18 (Achenbach, 1991a) and the Teacher's Report Form (TRF) (Achenbach, 1991b) were completed by parents and teachers, respectively.

The Dimensions of Temperament Survey-Revised (DOTS-R) (Windle and Lerner, 1986) is a 54-item, factor-analytically derived

instrument that measures 9 temperament attributes in children as reported by parents (Windle and Lerner, 1986). The items are scored on a 4-point Likert scale ranging from "usually false" (1) to "usually true" (4). The 9 temperament scales are as follows: Activity Level-General, Activity Level-Sleep, Approach-Withdrawal, Flexibility-Rigidity, Mood, Rhythmicity-Sleep, Rhythmicity-Eating, Rhythmicity-Daily Habits, and Task-Oriented Behavior. In our sample, α values for subscales were all greater than .70, except for the Rhythmicity-Sleep ($\alpha = .55$) and Rhythmicity-Daily Habits scales ($\alpha = .54$), which were therefore excluded from the study.

The Nijmegen Parenting Stress Index is a modified Dutch version of Abidin's Parenting Stress Index (Abidin, 1983, 1997), measuring the level of perceived parental stress originating from several child and parent characteristics within the caregiving context (De Brock et al., 1997). The items are scored by the parents on a 6-point Likert scale. We used a short form which included 25 items ($\alpha = .95$) that are derived from scales measuring the perceived child characteristics and parent characteristics (De Brock et al., 1990, 1997). For the present article, only the child characteristics scale was used.

The Nijmegen Observation Scale for Preschoolers (NOSP) (Rost, 1992) was completed by teachers and consists of 43 items scored on a 7-point Likert scale concerning social-emotional competence. The items are summarized in 4 scales: Task-Related Behavior, Social Behavior, Affect, and Self-Help (α values range from .73 to .90).

Statistical Analyses

To investigate the association between time 3 child-reported depression and anxiety and time 1 and time 2 parent- and teacher-reported syndromes, Pearson correlations between the DDPC and STAIC total scores and the time 1 CBCL and time 2 CBCL and TRF syndromes and the time 2 DOTS-R, NOSP, and Parenting Stress Index scales 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 parent- and teacher-reported preschool behaviors that predict child-reported elevated levels of depression or anxiety in preadolescence, the child reports were dichotomized using a cutoff at 1 SD above the mean. Time 1 CBCL and time 2 CBCL and TRF items were dichotomized as 0 (not true) versus 1 (somewhat or sometimes true) or 2 (very true or often true). Odds ratios between the dichotomized DDPC and STAIC scores and dichotomized CBCL/TRF items were computed.

Sample Attrition

For this article, only those subjects were included for whom complete time 3 child reports, complete time 1 CBCL, as well as complete time 2 CBCL and TRF data ($N = 249$) were available. 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 remaining children from the original sample on the time 1 CBCL Total Problems ($t = 0.61$, $df = 418$, $p = .54$), Internalizing ($t = 0.30$, $df = 418$, $p = .77$), or Externalizing scores ($t = -1.07$, $df = 418$, $p = .28$). Neither were there differences on the time 3 CBCL Total Problems ($t = 1.469$, $df = 356$, $p = .15$), Internalizing ($t = 0.40$, $df = 356$, $p = .69$), or Externalizing scores ($t = 0.72$, $df = 356$, $p = .48$). Furthermore, χ^2 tests showed that the current sample was not significantly different from the remaining samples regarding sex ($\chi^2 = 0.90$, $df = 1$, $p = .34$), socioeconomic status ($\chi^2 = 3.10$, $df = 2$, $p = .22$), or time 1 risk factors such as parent-reported family mental health service use

($\chi^2 = 0.14$, $df = 1$, $p = .71$), nonparental care ($\chi^2 = 0.00$, $df = 1$, $p = .98$), parenting stress ($\chi^2 = 0.37$, $df = 1$, $p = .54$), or parental physical punishment of the child ($\chi^2 = 1.41$, $df = 1$, $p = .24$). These results lead us to conclude that the subsample used in this study was not influenced by selective attrition.

RESULTS

Correlations

Our analyses yielded no significant correlations between time 1 CBCL syndromes and time 3 child-reported depression and anxiety. Therefore, Table 1 shows only the correlations regarding time 2 predictors. Results show that there are few significant correlations and that those that are significant are small according to Cohen's criteria (Cohen, 1988). Only one of the time 2 parent-reported predictors was significantly related to time 3 child-reported depression (DOTS-R, high Activity Level-General). The time 2 teacher-reported TRF Social Problems and Attention Problems syndromes, as well as the NOSP Task-Related Behavior and Social Behavior scales, were most strongly related to time 3 child-reported depression. Only the time 2 parent-reported Anxious/Depressed and Attention Problems syndromes were significantly related to time 3 child-reported anxiety. Additional linear regression analyses (not shown in Table 1) showed that the proportion of explained variance of child-reported depression and anxiety was 2% or less for parents and teachers.

Odds Ratios With Specific Problem Items

Of the time 1 CBCL items, only 2 were significantly associated with time 3 child-reported internalizing problems: "painful bowel movements" with anxiety (odds ratio = 5.3, 95% confidence interval = 1.8–16.2) and "picks nose, skin, or other body parts" with depression (odds ratio = 2.2, 95% confidence interval = 1.1–4.3). Table 2 only shows the relative risk for child-reported depression and anxiety regarding the time 2 CBCL and TRF items that were grouped according to the cross-informant syndromes. Similar to the findings regarding the time 2 CBCL/TRF syndromes, the teacher-child odds ratios were generally higher and more often significant than the parent-child odds ratios. For parents, only 4 of the 120 items were significantly related to time 3 child-reported depression. These include "would rather be alone," "strange behavior," "screams," and "wets self during day." Regarding child-reported anxiety, 7 time 2 parent-reported items

TABLE 1
Correlations Between Time 2 Parent- and Teacher-Reported Behaviors and Time 3 Self-Reported Depression and Anxiety

Time 2 Predictors	Depression		Anxiety	
	Parents	Teachers	Parents	Teachers
CBCL/TRF syndromes (<i>n</i> = 249)				
Withdrawn	—	0.14	—	—
Anxious/Depressed	—	—	0.14	—
Social Problems	—	0.19	—	—
Attention Problems	—	0.19	0.14	—
Internalizing Problems	—	0.13	—	—
Total Problems	—	0.16	—	—
DOTS-R scales (<i>n</i> = 236)				
High Activity Level-General	0.14	NA	—	NA
NOSP scales (<i>n</i> = 244)				
Poor Task-Related Behavior	NA	0.19	NA	—
Poor Social Behavior	NA	0.16	NA	—
Negative Affect	NA	0.13	NA	—

Note: Only time 2 predictors with one or more significant correlations are shown. Dashes indicate nonsignificant correlations. No significant correlations were found for the CBCL/TRF syndromes Somatic Complaints, Thought Problems, Delinquent Behavior, Aggressive Behavior, and Externalizing; the DOTS-R scales Activity Level-Sleep, Approach-Withdrawal, Flexibility-Rigidity, Mood, Rhythmicity-Sleep, Rhythmicity-Eating, Rhythmicity-Daily Habits, and Task-Oriented Behavior; the Parenting Stress Index child characteristics scale; and the NOSP Self-Help scale. CBCL = Child Behavior Checklist; TRF = Teacher's Report Form; DOTS-R = Dimensions of Temperament Survey-Revised; NOSP = Nijmegen Observation Scale for Preschoolers; NA = not applicable for this informant.

were significant, 3 from the Aggressive Behavior syndrome, including "brags," "screams," and "talks too much." For teachers, 21 items were significantly related to time 3 child-reported depression, most of which belonged to the internalizing syndromes Withdrawn or Anxious/Depressed (e.g., "unhappy," "lonely," "feels too guilty"), the Social Problems syndrome (e.g., "acts too young," "clumsy"), and the Attention Problems syndrome (e.g., "underachieving," "fails to carry out tasks"). Furthermore, only 3 time 2 teacher-reported items were significantly associated with time 3 child-reported anxiety, including "clumsy," "messy work," and "underachieving."

The item "strange behavior" was related to time 3 child-reported depression for both parent and teacher reports. Furthermore, the time 2 teacher-reported item "underachieving" was significant for both time 3 child-reported depression and anxiety. Finally, the time 2 parent-reported item "screams" was significantly related to both time 3 child-reported depression and anxiety.

DISCUSSION

In this article we examined the predictive value of a wide range of broad and specific preschool behavior problems as reported by parents and teachers in relation to child-reported depression and anxiety in preadolescence. Our results show that the predictive value of parent-reported behavior problems at ages 2 to 3 years and ages 4 to 5 years regarding child-reported depression and anxiety at ages 10 to 11 years is negligible. Significant parent-reported early predictors tended to be scattered across syndromes, and no obvious meaningful pattern of predictive behaviors could be discerned. This finding is consistent with the cross-sectional results of part I of this study, and it suggests that parents' reports of early or concurrent behaviors do not provide a reliable or consistent indication of a risk for child-perceived internalizing problems in preadolescence. It must be noted, however, that the results of the 2 studies are not independent, since the same parents are reporting at each time of assessment. Although teacher-reported problems at ages 4 to 5 years were also not predictive of preadolescent child-reported anxiety, teachers proved to be very useful informants regarding early predictors of later child-reported depression.

First, a number of teacher-reported preschool internalizing items were significantly related to child-reported depression in preadolescence (e.g., "unhappy, sad, depressed," "lonely," "feels too guilty"), indicating early depression-related problems that are noticed by teachers. This finding is especially salient considering that the prediction spans a 6-year time interval and reflects an association between teacher- and child-reported problems. It is interesting to realize that even at such a young age, such specific internalizing problems are predictive of similar problems at a later age.

Second, a number of significant predictors regarding early teacher-reported social problems (e.g., NOSP poor social behavior and TRF items "acts too young," "too dependent," and "clumsy") provide some support for theories of depression that emphasize the role of a lack of social skills, peer rejection, and social withdrawal in the development of depression (Boivin et al., 1994; Cole, 1990; Patterson and Capaldi, 1990; Rudolph et al., 1994). Of interest, the preschool Social Problems items that were found to be longitudinally predictive of later depression seem to be of a different nature than the preadolescent Social Problems items related con-

TABLE 2
Odds Ratios Between Time 2 CBCL/TRF Items and Time 3 Self-Reported Depression and Anxiety ($n = 249$)

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	(110/74)	2.0	(1.0–3.8)	—	—	—	—	—	—
75. Shy, timid	(125/130)	—	—	2.1	(1.1–4.1)	—	—	—	—
80. Stares blankly ^c	(17/34)	—	—	3.0	(1.4–6.7)	—	—	—	—
103. Unhappy, sad, depressed ^d	(16/20)	—	—	3.5	(1.3–9.0)	—	—	—	—
Anxious/Depressed									
12. Lonely	(18/15)	—	—	3.3	(1.1–9.9)	—	—	—	—
45. Nervous, tense ^e	(75/71)	—	—	—	—	2.0	(1.0–4.0)	—	—
52. Feels too guilty	(12/8)	—	—	4.9	(1.2–20.3)	—	—	—	—
81. Hurt when criticized	(NA/57)	NA	NA	2.8	(1.4–5.6)	NA	NA	—	—
106. Overly anxious to please	(NA/34)	NA	NA	2.5	(1.1–5.7)	NA	NA	—	—
108. Afraid of mistakes	(NA/84)	NA	NA	2.0	(1.0–3.8)	NA	NA	—	—
Social Problems									
1. Acts too young	(38/58)	—	—	2.7	(1.4–5.4)	—	—	—	—
11. Too dependent	(63/55)	—	—	2.3	(1.2–4.7)	—	—	—	—
62. Clumsy ^e	(26/46)	—	—	3.2	(1.6–6.6)	—	—	2.2	(1.0–4.6)
Thought Problems									
70. Sees things	(9/2)	—	—	—	—	4.0	(1.0–15.6)	—	—
84. Strange behavior	(9/14)	3.9	(1.0–15.1)	5.2	(1.7–15.6)	—	—	—	—
Attention Problems									
2. Hums, odd noises	(NA/27)	NA	NA	2.6	(1.1–6.2)	NA	NA	—	—
10. Can't sit still	(125/78)	—	—	2.0	(1.0–3.9)	—	—	—	—
22. Difficulty following directions	(NA/60)	NA	NA	2.3	(1.1–4.5)	NA	NA	—	—
72. Messy work	(NS/70)	NA	NA	—	—	NA	NA	2.0	(1.0–4.0)
92. Underachieving	(NS/26)	NA	NA	4.1	(1.7–9.6)	NA	NA	4.2	(1.8–10.0)
100. Fails to carry out tasks	(NA/28)	NA	NA	2.4	(1.0–5.8)	NA	NA	—	—
Aggressive Behavior									
7. Brags	(135/70)	—	—	—	—	2.3	(1.1–4.7)	—	—
27. Jealous	(119/40)	—	—	2.3	(1.1–4.9)	—	—	—	—
68. Screams	(69/29)	2.0	(1.0–3.9)	—	—	2.1	(1.1–4.1)	—	—
93. Talks too much	(104/58)	—	—	—	—	2.4	(1.2–4.6)	—	—
Other									
13. Confused	(14/20)	—	—	3.5	(1.3–9.0)	—	—	—	—
29. Fears	(110/30)	—	—	—	—	2.1	(1.1–4.0)	—	—
92. Talks/walks in sleep	(59/NA)	—	—	NA	NA	2.2	(1.1–4.3)	NA	NA
107. Wets self during day	(14/NA)	3.8	(1.2–11.5)	NA	NA	—	—	NA	NA
109. Whining	(62/13)	—	—	4.3	(1.4–13.6)	—	—	—	—
110. Unclean personal appearance	(NA/5)	NA	NA	7.2	(1.2–44.5)	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 Attention Problems on CBCL and TRF, and also in Thought Problems on CBCL.

^d Also in Anxious/Depressed on CBCL and TRF.

^e Also in Attention Problems on CBCL and TRF.

currently to depression (see part I, Mesman and Koot, 2000). The significantly associated Social Problems items at ages 10 to 11 years reflect peer rejection (e.g., “doesn't get along with peers,” “gets teased,” “not liked by peers”), while the predictive Social Problems items at

ages 4 to 5 years seem to refer to child behaviors that may constitute reasons for subsequent peer rejection (“acts too young,” “too dependent,” “clumsy”).

Third, the NOSF poor Task-Related Behavior, as well as several items from the TRF Attention Problems syn-

drome at ages 4 to 5 years, were significantly predictive of later child-reported depression (e.g., “underachieving,” “fails to carry out tasks”). These items reflect behavior that may seriously impair academic functioning. Consistent with the cross-sectional results from part I of this study, as well as other cross-sectional studies (Cole, 1990), academic problems are an important indicator of preadolescent depression in children, even when assessed in first grade. These findings may also reflect the often-found comorbidity between depression and attention-deficit hyperactivity disorder in children (Biederman et al., 1991; Jensen et al., 1993). Although the results of part I also showed that parent- and teacher-reported externalizing behaviors signal concurrent child-reported depression, preschool externalizing behaviors did not predict later child-reported depression.

Considering these findings, we must first emphasize the crucial role of teachers in the identification of depression in children. Teachers show more awareness of such problems than parents, and they appear to be in a better position than parents to detect additional depression-related problems such as social and academic problems. Most important, our results have shown that this conclusion is not only relevant for the identification of current child-reported depression, but that teacher reports of such problems at ages 4 to 5 years are predictive of child-reported depression 6 years later. This finding is especially salient considering that in the Netherlands, kindergarten and grade 5 are never taught by the same teacher. Furthermore, although this was not the main aim of the present study, our findings provide some support for competence-based models of depression (Cicchetti and Schneider-Rosen, 1986; Cole, 1991; Patterson and Stoolmiller, 1991). The failure to successfully negotiate important developmental tasks such as forming peer relationships and academic achievement have indeed been shown to be significant concurrent and predictive indicators of child depression.

Child-reported anxiety in preadolescence could not be consistently predicted from parent- and teacher-reported preschool or kindergarten behavior problems. Several other studies did report early behavioral inhibition, characterized by fear of the new and withdrawal and shyness in unfamiliar situations, to be predictive of later anxiety (Biederman et al., 1991; Hirshfeld et al., 1992). In the present study, several CBCL/TRF items pertaining to the construct of behavioral inhibition showed large numbers of children in the deviant range

(time 1 CBCL “shy” and “fear of the new”; time 2 CBCL/TRF “shy”) This may have caused their lack of distinguishing power regarding later anxiety. Therefore, we reanalyzed these items in relation to later anxiety, using a stricter cutoff point to select the most extreme cases (children who *often* display the behavior). These analyses yielded one significant odds ratio for time 2 parent-reported shyness in relation to later child-reported anxiety (odds ratio = 5.24, 95% confidence interval = 1.6–17.1), but not for the time 1 parent-reported or the time 2 teacher-reported items. Following Hirshfeld and colleagues’ example (1992), we also examined the predictive value of *stable* preschool shyness in relation to preadolescent child-reported anxiety, but no significant results emerged. These results partly confirm earlier findings, albeit only for parent reports of shyness in kindergarten. However, the studies by Hirshfeld et al. (1992) and Biederman et al. (1993) were based on laboratory observations of early inhibition, whereas, apparently, teacher-rated similar early behaviors do not signal the risk for child-reported anxiety in preadolescence. It may be that shyness and other anxiety-related behaviors observed by teachers in a child’s first school year(s) represent a transient state specific to a new situation and are therefore qualitatively different from child-reported anxiety in the last 2 years of elementary school.

Clinical Implications

The cross-sectional findings presented in part I and the longitudinal results presented in this article illustrate the importance of child reports in the detection of internalizing problems, inasmuch as parents seem relatively unaware of such problems in children. Furthermore, teachers were found to show relatively substantial cross-sectional and longitudinal sensitivity regarding child-perceived internalizing problems (mainly depression) in preadolescence. As in part I of this study, we examined the sensitivity and specificity of the TRF (but this time in first grade) regarding child-perceived internalizing problems in preadolescence. We included depression and not anxiety in these analyses, as the latter was significantly related to only 3 items of the TRF. The dichotomized TRF Internalizing syndrome showed a sensitivity of 0.24 and a specificity of 0.85 for child-reported depression. We tried to improve the TRF’s sensitivity by creating a new TRF syndrome which includes all the items that were found to be

significantly related to depression (21 items, score range 0–42). For this new syndrome, a cutoff at score 6 yielded a sensitivity of 0.53 and a specificity of 0.83. Although the sensitivity is now doubled, it is still not acceptable for screening purposes. However, as was noted in part I of this study, a teacher-report screening instrument specifically designed for the detection of child-perceived depression may prove to be very useful and should include items referring to depression, as well as to social and academic problems. Moreover, the results of our longitudinal study showed that such an instrument may also be valid from a very young age and may potentially enhance the early detection of children at risk for such problems and pave the way for appropriate prevention strategies.

Limitations

The limitations of the present study are similar to the limitations described in part I. First, sex differences in the relationship between preadolescent child-perceived internalizing problems and preschool parent- and teacher-reported behaviors were not examined. As in part I, 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 different preschool behaviors are predictive of later depression and anxiety for boys than for girls. Further study is needed to investigate this issue. Second, only rating scales were used to assess child depression and anxiety, and some of the low correlations at the syndrome level may be due to differences in constructs underlying our parent/teacher report versus child report instruments. However, this explanation would be a valid one only 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.

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