Published in final edited form as:

J Affect Disord. 2007 June ; 100(1-3): 143–151. doi:10.1016/j.jad.2006.10.008.

Factors influencing mother-child reports of depressive symptoms and agreement among clinically referred depressed youngsters in Hungary

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Abstract

Background—Psychiatric assessments of children typically involve two informants, the child and the parent. Understanding discordance in their reports has been of interest to clinicians and researchers. We examine differences between mothers' and children's report of children's depressive symptom severity, and factors that may influence their reports and level of agreement. We hypothesized that agreement between mother and child would improve if (1) the mother is depressed, due to improved recall of mood congruent symptoms, (2) the child is older, due to better social-cognitive and communication skills, and (3) the child is a female.

Methods—Subjects were 354 children (158 girls; mean age 11.69 years, s.d.: 2.05 years) with Major Depressive Disorder. Depressive symptoms were evaluated by a semi-structured interview separately with the mother and the child. Agreement on symptom severity was based on concordance of the presence and extent of symptoms.

Results—Maternal reports were significantly higher than their son's but not daughters'. Girls, particularly with increasing age, reported higher levels of symptoms; however mothers' reports were not affected by child sex or age. Maternal depression predicted more severe symptom reports for both children and mothers. Agreement between the mother and the child increased as children got older.

Limitations—The same clinician interviewed the mother and the child, which might inflate rates of agreement. However, this method mirrors clinical evaluation.

Conclusions—During a clinical interview one must consider the age and sex of the child and the depressive state of the mother in assimilating information about the child.

Keywords

mother-child agreement; depressive symptoms; maternal depression; age; sex of child

Introduction

Psychiatric diagnoses for school age and older children typically are derived based on information from parents and direct interviews with the children themselves. However,

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given that agreement is generally low to moderate between the symptom reports of mothers and their children (Bennett et al., 1997; Breslau et al., 1987; Cole et al., 2002; Frick et al., 1994; Martin et al., 2004; Nguyen et al., 1994), factors that may influence individual reports and inter-informant agreement and how such factors should be weighted have been of interest (De Los Reyes & Kazdin, 2004, 2005). Three categories of variables have received considerable attention for their effects on parent-child symptom reports: maternal psychopathology, the type of symptom being reported, and child demographic characteristics. In the present study, one goal is to examine whether mother-child factors influencing symptom reports and trends in inter-rater agreement that have been reported mostly in US samples can be detected in a large European sample of clinically referred, depressed youths.

Maternal psychopathology has been shown to affect mothers' reports of their children's symptomatology (for reviews, see Grills and Ollendick, 2002; Richters, 1992). For example, in clinical and semi-structured interviews, depressed mothers report more depressive and behavioral symptoms in their children than the children report about themselves (Chilcoat and Breslau, 1997; Kroes et al., 2003; Renouf and Kovacs, 1994; Richters, 1992). Additionally, the more depressed the mothers are, the more serious they rate their children's symptoms (Youngstrom et al., 1999, 2000). The literature is ambiguous about the effect of maternal depression on mother-child agreement, however. For example, it has been reported that maternal depression improves (Conrad and Hammen, 1989), worsens (Renouf and Kovacs, 1994; Youngstrom et al., 2000), or has no detectable effect (Breslau et al., 1987; Nguyen et al., 1994) on parent-child symptom agreement. Further, maternal psychopathology other than depression also appears to inflate the ratings of children's symptoms (Frick et al., 1994; Najman et al., 2001; Youngstrom et al., 2000).

Mother and child reports of symptoms and their agreement also appear to vary as a function of the type of symptom being assessed. Having grouped symptoms according to whether they are overt and externalizing (observable) or covert and internalizing (thoughts or feelings), Bennett et al. (1997) found higher mother-child agreement in a sample of girls on several behavioral observable symptoms but poor agreement on several internalizing symptoms. In a sample of boys, Youngstrom et al. (2000) similarly found higher parent-child concordance on externalizing than internalizing symptoms. Other symptom dimensions studied as possibly influencing reports include type of context, the social desirability of the symptoms (eg., school-based vs. family-based or socially acceptable vs. undesirable symptoms) (Comer and Kendall, 2004; Grills and Ollendick, 2002) and perceived distress over the presenting symptoms (de los Reyes and Kazdin, 2005).

Finally, investigators also have considered whether children's demographic characteristics such as age, sex, and socioeconomic status (SES) influence symptom reports and inter-informant agreement on them. Studies have found that parent-child agreement improves with increasing age among outpatients (Renouf and Kovacs, 1994), and to a lesser extent in community samples (Jensen et al., 1999). But other studies found no significant age effects on parent-child symptom agreement, possibly because of a restricted age range (Bennett et al., 1997) or dichotomization of age groups (Breslau et al., 1987; Nguyen et al., 1994). De los Reyes and Kazdin (2005) note in their review that inconsistent findings about age effects on agreement could be due to different methods across studies, small sample sizes, or categorization of the children's ages. Likewise, child sex has been reported to affect parent-child concordance with regard to some symptoms but not others (for a review, see Grills and Ollendick, 2002). Jolly et al. (1994) found that girls' self-reported depressive symptoms were more comparable to observer ratings than boys. Frank et al. (2000) found in an inpatient sample that discrepancies in the ratings of the emotional impairment of the child were greater in mother-son pairs. Family SES does not seem to have a significant impact on

mother-child agreement on child's depressive symptoms (Bennett et al., 1997; Mick et al., 2000; Nguyen et al., 1994; Renouf and Kovacs, 1994; Youngstrom et al., 2000).

Given that multiple variables appear to affect mother-child agreement in symptom report, an important concern is the extent to which these factors interact in their effects. However, most studies of parent-child concordance have employed univariate statistics (e.g., Bennett et al., 1997; Nguyen et al., 1994) and thus did not model interactions among variables.

In the present study, we examined mother-child agreement about the severity of the child's depressive symptoms overall as well as by clinically meaningful depressive symptom clusters. We hypothesized that mother-child agreement on child's depressive symptoms would improve with maternal depression, because depressed mothers would be more accurate observers of their children's depression and have better recall of such mood congruent information (Blaney, 1986; Bower, 1981; Burt et al., 1995; Richters, 1992; c.f., Youngstrom et al., 1999). We tested this hypothesis using overall depressive symptom severity as well as depressive symptom clusters. We also hypothesized that: a) informant agreement on depressive symptoms will improve as a function of the child's age due to higher levels of social-cognitive development and better communication skills, and b) that mother-child concordance will be higher among mother-daughter than mother-son pairs (possibly due to greater degree of empathy in same sex pairs and higher self-consciousness in girls (Jolly et al., 1994)).

To use an index of mother-child agreement that is meaningful to clinicians, we gave the highest weight to instances where informants agreed on both the presence and intensity of a symptom, compared to instances where parent and child agreed on the presence only (but not intensity), or finally, to where they disagreed on the presence of the symptom. In modeling cross-informant agreement, we also considered as covariates: maternal anxiety (given that symptoms other than depression may have effects), household size (in so far as it may indirectly indicate the extent of time mother can dedicate to a particular offspring and hence influence her familiarity with and symptom report for the child, e.g., Treutler and Epkins, 2003) and highest educational grade that mothers completed as a proxy for SES. To better understand the potential effects of these factors, we examined their relations to maternal reports of children's depressive symptoms and children's own symptom reports, before modeling cross-informant agreement.

Method

Participants

Subjects for the present article are 354 children (158 girls), aged 11.69 years on average ($SD = 2.05$, range = 7.31–15.35 years) at the time of the assessment, who were enrolled in a study of genetic and psychosocial risk factors in childhood-onset depression by December 31, 2003, met diagnostic criteria for Major Depressive Disorder (MDD), and had biological mothers as parental informants. Boys ($M = 11.28$, $SD = 1.99$) were significantly younger than girls ($M = 12.19$, $SD = 2.03$) by approximately one year, $t(352) = 4.22$, $p < .001$. The cases in this sample partially overlap with subjects described in other publications addressing other facets of their depressive illness (e.g., Kapornai et al., 2006; Liu et al., 2006; Liu et al., in press). The sample was 94.3% Caucasian, 3.4% Roma, 2.0% multi-racial and 0.3% ($n = 1$) African, which is representative of the population of Hungary.

Mothers' ages ranged from 25.76–55.01 years, with a mean of 36.64 years ($SD: 4.97$ years). They had 11.4 years of formal education on average ($SD = 2.9$, range = 0–21 years). On average, 4.6 people were living together in one family ($SD = 1.14$, range of 2 to 10 people

per household). There were no differences in mother's education or number of people living together by child sex.

Maternal self-report forms were added to the protocol several months after the study was initiated. Therefore analyses including these measures (e.g., multivariate models) were completed on the reduced sample where maternal forms were available. The reduced sample of 306 mother-child pairs (86.4% of the total sample) was comparable to the full sample in age, ethnic distribution, maternal education and number living in household, but girls were underrepresented (81.7% of the total sample ($N = 129$) were included in the reduced sample) compared to boys (90.3% ($N = 177$) were in the reduced sample), $\chi^2 = 5.98$, $p < .01$.

Enrollment and Assessment Procedure

Children were recruited through 23 mental health facilities (six of which had both inpatient and outpatient units) across Hungary, serving both urban and rural areas. We estimate that they provided services to approximately 80% of newly registered child psychiatric cases across Hungary. Children presenting sequentially at each site were scheduled for assessment if they met the following criteria: 7.0 years to 14.9 years old at study entry, not mentally retarded, no evidence of major systemic medical disorder, had available at least one biologic parent and a 7–17.9 year-old sibling (required by the study's genetic component), and attained a predetermined cut-off score on either a child or parent version of a various depressive symptom screening scales designed for this project. (Siblings are not included in the current paper.) Children meeting these criteria were scheduled for a two-part evaluation, conducted on two separate occasions about 6 weeks apart, by different clinicians. We obtained written consent for participation signed by both parents and the child, in accordance with the legal requirements in Hungary and the University of Pittsburgh, Pittsburgh, USA.

The first part of the assessment entailed administration of the "Mood Disorder Module" of a diagnostic interview to the child and a parent (described below), as well as the Intake General Information Sheet (IGIS), a comprehensive socio-demographic and anamnestic data form, to the parent. Participants also completed self-rating scales. Children who met DSM IV criteria for mood disorder at the first assessment, based on clinicians' overall ratings derived from both the child and parent diagnostic interviews, were scheduled for further evaluation. (If DSM criteria were not met, the child was assigned an "at-risk" status and entered a follow-up arm of the study.) The second part of the assessment involved a full diagnostic evaluation and completion of maternal self-rated scales. Each diagnostic interview was conducted separately with the parent about the child, and the child about him/herself. The diagnostic interview, the Interview Schedule for Children and Adolescents - Diagnostic Version (ISCA-D), is an extension and modification of the Interview Schedule for Children and Adolescents (ISCA) (Sherrill and Kovacs, 2000). It covers the relevant Axis-I DSM-IV diagnoses as well as some DSM-III disorders, and yields symptom ratings and diagnoses for "current" as well as "lifetime" disorders. Results of the assessments and associated documentation (e.g., psychiatric records) were subjected to final consensus diagnostic procedure (Maziade et al., 1992). Pairs of senior child psychiatrists trained as Best Estimate Diagnosticians (BEDs) separately reviewed all material and then together derived consensus diagnoses. "Caseness" was determined based on best-estimate consensus; as described in connection with previous work (Kovacs, 1984), operational rules were used to define disorder onset and recovery.

The interviews were administered by child psychiatrists and psychologists who completed 3 months of didactic and practical training in the semi-structured interview technique. They were required to reach an average of 85% symptom-agreement on 5 consecutive videotaped interviews against "gold standard" ratings being provided by the trainers. Routine

monitoring and follow-up training sessions served to minimize rater drift. All interviews were audio taped. Inter-rater agreement was computed based on N=46 videotaped interviews. Kappas (based on paired ratings) for current MDD symptoms from the child interviews ranged from .63 to .92, with 73.3% of the coefficients above .70; kappas were similar from the parent interviews (ranging from .65 to .87, with 93.3% above .70). For the clinician's overall rating of the MDD symptoms (based on both child and parent interviews), kappas ranged from .64 to .88 with 80% at or above .70.

Variables

Maternal depression was quantified by the Beck Depression Inventory (BDI) (Beck et al., 1961) consisting of 21 items, yielding overall scores from 0 to 63. Mothers had a high average BDI score ($M = 12.4$, $SD = 9.7$), and 42.5% of them scored at or above the cutoff score of 13, showing moderate or severe depression.

Maternal anxiety was evaluated by the State-Trait Anxiety Inventory (STAI), a well-known self-report form for adults. We used only the state version in the present study. The measure includes 20 state items, which are rated on a 4-point Likert scale (Spielberger et al., 1970). In our sample, state anxiety scores were high, demonstrating considerable levels of anxiety in the mothers at the time of the interview ($M = 46.9$, $SD = 12.0$). Also, the anxiety scores were highly correlated with mothers' BDI scores ($r = .70$, $p < .001$). There were no significant differences by sex of the child in maternal STAI or BDI scores.

Children's Overall Depressive Symptom Severity—We computed two child overall symptom severity scores (CSS), based on maternal and child reports of ISCA-D depressive symptoms during the second assessment (mothers completed their self-report questionnaires at that assessment). Each symptom was rated on a 3 point scale: 0 = not present, 1 = subthreshold and 2 = threshold/clinical. A total of 15 symptoms were added to compute overall severity scores, separately for mothers and children. The possible range for the severity score was 0 to 30. The actual range for symptom severity was 0 to 29 for the children's report and 0 to 30 for mothers' ($M = 13.24$, $SD = 7.19$ for children, $M = 14.74$, $SD = 6.54$ for mothers).

Children's Depressive Symptom Cluster Severity—We separated symptoms into mood, cognitive and vegetative clusters. The Mood Cluster included depressed mood, irritability and loss of interest; the Cognitive Cluster included feelings of worthlessness, inappropriate guilt, diminished ability to concentrate, recurrent thoughts of death and of suicide (items on suicidal plan and attempt were not included because those questions were skipped if the previous suicide items were not endorsed); the Vegetative Cluster included weight gain or loss, insomnia or hypersomnia, psychomotor agitation or retardation, and fatigue. The score ranges of these three categories were 0–6, 0–10, and 0–14, respectively.

Mother-child agreement index—Based on the method of Renouf and Kovacs (1994), agreement scores were computed by establishing the extent of concordance on every depressive item as follows: 0 = mother and child disagreed on the presence of the symptom, 1 = they agreed on the presence but not the extent of the symptom, 2 = they agreed on both the presence and the extent. We derived the final score of each mother-child pair by adding the individual agreement scores of all symptoms. Higher overall scores showed better inter-informant agreement. Agreement scores were not pro-rated. The range for the total agreement score was 5–30, and ranges for the subcategories were Mood (0–6), Cognitive (0–10), and Vegetative (2–14).

Statistical analyses

T-tests were performed to examine mean differences on CSS based on child sex and reporter identity (child or mother). We conducted preliminary univariate analyses to examine how each variable of interest was related to children's self-reports and maternal reports (separately) and to the agreement scores. Only variables that showed significant association to CSS or agreement scores in the preliminary analyses were included in the multivariate models. Because the results of the univariate models were redundant with those that emerged in the multivariate analyses, only the final multivariate models are reported. We used generalized linear models to investigate the effects of variables on the individual reports and agreement, and to examine possible two-way interactions between them. A backward elimination method was used with the interaction terms such that all terms were initially included, and then terms were sequentially eliminated (starting with the one with the largest p-value) until only significant interaction terms ($p < .05$) remained in the final model. Results Differences in symptom reports by informant and child sex As shown in Table 1, mothers reported higher symptom severities for their children than children reported for themselves on the overall depressive symptom severity, as well as on the Mood and Vegetative Symptom Clusters. When we examined boys and girls separately, the same pattern of mothers' over-reporting was found for boys for the overall score, and for all three subdomains of symptoms. However, mothers' and daughters' reports of overall symptom severity were not significantly different. Further, although mothers did report more severe mood symptoms than girls, girls reported more severe cognitive symptoms than did mothers.

Comparing boys and girls on their self-reported symptom severity, we found that girls endorsed significantly higher levels than did boys on the Total Depressive Symptom Severity and all three Symptom Clusters.

Multivariate analyses of symptom reports and mother child agreement using GLM

Variables that were included in the model were mother's BDI scores, mother's education, child's age and child's sex. We did not include number of people in the household because it did not show any relation to child or mother reported CSS or agreement scores in the preliminary analyses. Also, we did not include mothers' anxiety scores in addition to depressive scores because they were highly correlated. Continuous predictor variables were centered prior entering them in the model and computing interaction terms (Aiken and West, 1991).

First, we analyzed the effects of the variables on symptom reports of children about themselves, and mothers about their children (Table 2). With the child-reported CSS total score as the dependent variable, the results showed that child sex, age, mother's BDI, and an Age X Sex interaction were significant predictors. Examining the effect of age separately for girls and boys showed that age significantly predicted symptom severity for girls ($B = 1.39$, $SE = .25$, $p < .001$), but not for boys ($B = .44$, $SE = .25$, $p = .08$). When looking at the symptom clusters, for mood symptoms, child sex, age and mothers' BDI were associated with more severe children report of symptoms. For cognitive symptoms, child age and sex predicted more severe symptoms. For vegetative symptoms, mothers' BDI, and an Age X Sex interaction emerged as significant predictors. Examining the simple effects of age separately for girls and boys again showed that age predicted symptom severity for girls ($B = .54$, $SE = .12$, $p < .001$), but not for boys ($B = .07$, $SE = .11$, $p = .52$).

When parent-reported CSS was modeled as the dependent variable, we found that mainly parent variables were significant predictors of child symptom severity. Mothers with higher BDI scores reported more severe symptoms in their children (using either the total symptom scale, or the three symptom Clusters). Also, for Cognitive cluster, more educated mothers

reported higher levels of symptoms in their children. For vegetative symptoms, an Education by Sex interaction was found. More educated mothers reported less severe vegetative symptoms for girls ($B = -.18$, $SE = .09$, $p < .05$), but mothers' education was unrelated to their reports of vegetative symptoms for boys ($B = .12$, $SE = .07$, $p = .09$).

We then used mother-child agreement as the dependent variable. Only child age consistently predicted the agreement score. Older children and their mothers were more likely to agree (than younger children and their mothers) on child symptom severity when examining the total symptom severity score or the Mood and Vegetative Symptom Clusters. For each year of increase in age, the concordance on the total symptom score increased by 0.46 points, on average.

Discussion

The aim of the present study was to investigate the influence of maternal and child factors on symptom reports and mother-child agreement regarding the child's depressive symptoms among 7 to 15 year-old psychiatric patients. This study is unique because of its very large sample of clinically referred children whose depressive disorders were diagnosed in a rigorously standardized, multiphase process. The large sample made it possible to examine potential interactions among several variables which have been reported in the literature as affecting parents' and children's reports about the children's symptoms. Looking at clusters of depressive symptoms (as well as overall depressive symptom severity) allowed us to explore whether there exist phenomenologically meaningful differences in symptom reports.

Overall, we were able to confirm in this European child psychiatric sample, several trends reported in the literature about variables that affect parent and child symptom reports, including the positive effect of child age, and the tendency of maternal depression to inflate maternal reports of child depressive symptoms (compared to the children's own report). A novel finding (made possible by the large sample size) is the differential effect of child's sex on maternal reporting of offspring's symptom. Namely, we found a consistent pattern in group level comparisons for mothers to generally report higher overall levels of depressive symptoms for their sons than the sons report about themselves. However, with regard to daughters, the discordance only appeared in the area of mood symptoms, with mothers perceiving their daughters as having more mood problems than the girls themselves report. Our results are consistent with results of Frank et al. (2000) who found larger discrepancies between parents and sons than parents and daughters for questions about feelings and moods. Other studies have also found maternal over-reporting in clinical (Renouf and Kovacs, 1994) and community samples enriched for juvenile offenders (Youngstrom et al., 2000) using standardized interviews and self-report scales, but did not examine the influence of child's sex on symptom reports. Thus, we essentially confirmed our hypothesis that mothers and daughters are more likely to agree than are mothers and sons about the offsprings' depressive symptoms. It would be worthwhile to examine in future research whether such effect of child sex on maternal perception also exists in the context of other child psychiatric disorders.

Consistent with another one of our hypotheses, we found that higher level of maternal depression was associated with mothers reporting more severe depressive symptoms in their children. Maternal over-reporting in association with depression has been shown in many studies (e.g., Briggs-Gowan et al., 1996; Chilcoat and Breslau, 1997; Najman et al., 2001; Renouf and Kovacs, 1994). It has been debated, however, whether this effect can be explained by increased maternal sensitivity to shared symptoms or a true elevation of emotional problems in the children of symptomatically depressed mothers. As our results show, children of high BDI mothers did report high levels of affective symptoms, though the

effects of maternal depression on children's own reports were less strong than on mothers' ratings. Overall however, and consistent with findings in the literature (Chilcoat and Breslau, 1997; Najman et al., 2001; Richters, 1992), this general pattern of results suggests that children of more depressed mothers are at an increased risk for more severe depressive symptoms themselves.

Symptoms of maternal anxiety and depression were found to be so closely related in our sample that examining them both would have yielded essentially identical results. This may partly reflect a considerable overlap in self-report measurements (Briggs-Gowan et al., 1996), and the high rate of comorbidity between the depressive and anxiety disorders (Szádóczy et al., 2002); both of which may be due to a shared general negative affect component common to both set of symptoms (Watson and Clark, 1991).

There were three sex-related interactions in symptom reports all showing that female (but not male) sex may have a variety of effects on depressive symptoms. Namely, older girls reported more total depressive symptoms and particularly more vegetative symptoms than younger girls. Our finding that age predicted more severe symptoms only for girls parallels the findings of sex difference in depression by the time of adolescence but not in childhood (Cole et al., 2002; Ge et al., 2001; Hankin et al., 1998). Finally, less educated mothers reported higher levels of vegetative symptoms for daughters. This could reflect the fact that the higher levels of overall depression (reported by girls) is more likely to be perceived by lower SES mothers in terms of observable symptoms (e.g., change of appetite or weight). But this posthoc explanation is speculative, because of the number of interaction terms tested ($N = 60$) and a lack of specific hypothesis.

Individual maternal or child variables seemed to have a universal effect across all depressive symptoms, whereas interactions among variables emerged mainly in regard to vegetative and mood symptom clusters for girls. Interestingly, the cognitive symptom cluster was not predicted by any interactions among the variables of interest. Given that more depressed mothers reported more symptoms for their children without differentiation among symptom clusters, and that the effect of mothers' BDI scores were not moderated by child age or sex, the impact of mothers' mood on child symptoms appears to be more global.

Child's age was the only variable that predicted mother-child agreement regarding the child's depressive symptoms, with improved concordance as children got older. This is in accordance with the literature on out-patients (Renouf and Kovacs, 1994) and community samples (Jensen et al., 1999). As it has been noted, some of the reasons for better agreement between adolescents and their parents are likely to include developmental increases in introspection, communication skills, and self-monitoring ability (e.g., Kraemer et al., 2003; Renouf and Kovacs, 1994). On the other hand, maternal affective psychopathology, educational level, or child's sex proved to have no effect on inter-informant symptom agreement, echoing several findings from other studies (e.g., Breslau et al., 1987; Nguyen et al., 1994; Renouf and Kovacs, 1994).

In summary, there is agreement that, in the assessment of child psychopathology, clinicians should obtain information from multiple informants (e.g., Bennett et al., 1997; Renouf and Kovacs, 1994) in order to increase the validity of the resultant diagnosis. Kraemer et al. (2003) suggested the use of at least three informants in clinical evaluations who give orthogonal (valid but not redundant) rather than collinear (highly correlated) reports. It also has been acknowledged that, given the various factors that may affect reporting of symptoms, progress should be made in systematically isolating possible subjective components in evaluations (Youngstrom et al., 1999). De los Reyes and Kazdin (2005) conceptualized the Attribution Bias Context (ABC) Model that helps in the understanding

and interpretation of discrepancies across different informant pairs. According to the model, possible disagreements result from differences of informants' attributions, perspectives, and the goal of the clinical assessment process, and interaction of these factors. Our findings suggest that variables which may affect the symptom report of parents about their children and children's report about themselves are likely to overlap but are not identical with variables which may affect the extent of agreement between such informants. Thus, our results imply that during a clinical interview one must consider the age and sex of the child and the depressive state and education of the mother in assimilating information about the problematic behavior of the child.

In closing, we note several shortcomings of our study, which constrain its generalizability. Our protocol did not include a psychiatric examination of mothers, and thus we cannot readily generalize our findings to clinically diagnosed parental depression. Although subjects had a multiphase evaluation by different clinicians, and the protocol included ongoing interviewer monitoring, in a given assessment the same interviewer questioned the mother and separately the child; thus, a "halo" effect from the parental evaluation cannot be ruled out. On the other hand, our assessment approach mirrors how evaluations are done in bona fide clinical settings, wherein the same clinician evaluates the parent and child. However, results from our carefully ascertained clinical sample may not generalize to community youth populations. Also, our agreement index is one of many methods used to measure informant discrepancies, and each has inherent limitations (e.g., ours does not correct for marginal distributions or chance agreement). But because we sought to capture parent-child discordance in a way that would be meaningful to clinicians, we used an absolute index that differentially weighted disagreements on intensity vs. the presence of each symptom. Finally, since age was the main factor influencing mother-child agreement, longitudinal study of the "age effect" on symptom report would be needed to confirm this relationship.

Acknowledgments

Members of the International Consortium for Childhood- Onset Mood Disorders: István Benák, Emília Kaczvinszky M.D., Viola Kothencné Osváth, László Mayer M.D., University of Szeged, Department of Child and Adolescent Psychiatry, Szeged, Hungary. Márta Besny M.D., Júlia Gáboros M.D. and Ildikó Baji M.D. Vadaskert Hospital, Budapest, Hungary. Judit Székely M.D. Semmelweis University, I. Pediatric Department, Budapest, Hungary. Edit Dombóvári M.D., Heim Pál Hospital for Sick Children, Outpatient Unit of Child Psychiatry, Budapest, Hungary.

This work was supported by National Institute of Mental Health Program Project grant, MH 56193.

Special thank for participating physicians across various research sites in Hungary:

Zsuzsa Bánk M.D., Katalin Bense M.D., Katalin Benk M.D., Ferenc Dics M.D., Em ke Endreffy Ph.D., Edina Farkas M.D., Gyöngyi Farkas M.D., Zsuzsanna Fekete M.D., Márta Fohn M.D., Magdolna Gácsér M.D., Eszter Gyenge M.D., Éva Gyulai M.D., Mária Gyurcsó M.D., Rózsa Hasuly M.D., Ágnes Horváth M.D., Enik Juhász M.D., Mária Károlyfalvi M.D., Dénes Kövendy M.D., Mária Mojzes M.D., Ilona Mógor M.D., Róza Oláh M.D., Mária Palaczky M.D., Mária Révhelyi M.D., Ilona Riegler M.D., Sörf z Zsuzsanna, M.D., Péter Steiner M.D., Zsuzsa Takács M.D. and Mariann Vados M.D.

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Table 1

Total and Type-Specific Child Symptom Severity: Comparisons by Reporter and by Child Sex

Variables	Total n = 354 Mean(SD)	Boys n = 196 Mean(SD)	Girls n = 158 Mean(SD)	t-value by sex
<u>Total Depressive Symptom Severity:</u>				
Child Self Report	13.24 (7.19)	11.92 (7.06)	14.87 (7.03)	3.91 ***
Maternal Report	14.74 (6.54)	14.34 (6.42)	15.23 (6.67)	1.29
Paired t by reporter	-4.37 ***	-5.56 ***	-.60	
Pearson correlations	.58 ***	.60 ***	.53 ***	
<u>Mood Symptom Cluster:</u>				
Self Report	3.27 (1.90)	3.03 (1.89)	3.70 (1.86)	3.31 **
Maternal Report	4.07 (1.83)	3.95 (1.79)	4.20 (1.89)	1.27
Paired t by reporter	-7.28 ***	-7.21 ***	-3.10 **	
Pearson correlations	.49 ***	.53 ***	.45 ***	
<u>Cognitive Symptom Cluster</u>				
Child Self Report	4.44 (3.24)	3.81 (3.10)	5.24 (3.25)	4.21 ***
Maternal Report	4.62 (3.10)	4.52 (3.15)	4.75 (3.06)	0.69
Paired t by reporter	-1.41	-3.71 ***	2.06 *	
Pearson correlations	.57 ***	.56 ***	.60 ***	
<u>Vegetative Symptom Cluster</u>				
Child Self Report	5.49 (3.08)	5.11 (3.00)	5.97 (3.12)	2.60 **
Maternal Report	5.97 (3.09)	5.79 (2.93)	6.21 (3.27)	1.27
Paired t by reporter	-2.79 **	-3.34 **	-.54	
Pearson correlations	.55 ***	.55 ***	.55 ***	

Note: SD: standard deviation

*
p<0.05**
p<0.01***
p<0.001.

Table 2

Modeling Maternal and Child Report of Symptom Severity and Mother Child Agreement

Overall model		Parameters for individual predictors and interaction terms: B values (Std. Error)						
df	F	Child sex	Child age	Mother BDI	Mother Education	Education X Child Sex	Child Age X Child Sex	
<u>Child Depressive Symptom Severity by Child's Report</u>								
Total (5, 300)	10.90***	2.13** (0.81)	.60* (0.29)	.10* (0.04)	-.12 (0.14)	---	.81* (0.39)	
Mood (4, 300)	8.60***	.46* (0.22)	.22*** (0.05)	.03* (0.01)	-.01 (0.04)	---	--	
Cognitive (4, 298)	10.17***	1.25*** (0.37)	.38*** (0.09)	.02(0.02)	-.01 (0.06)	---	--	
Vegetative (5, 295)	9.51***	.55 (0.35)	.14 (0.11)	.06*** (0.02)	-.09 (0.06)	---	.45** (0.17)	
<u>Child Depressive Symptom Severity by Mother's report</u>								
Total (4, 300)	6.73***	.45 (0.75)	.09 (0.18)	.19*** (0.04)	.14 (0.13)	---	--	
Mood (4, 301)	5.10***	.15 (0.22)	-.02 (0.05)	.05*** (0.01)	.03 (0.04)	---	--	
Cognitive (4, 287)	3.35*	.06 (0.37)	.02 (0.09)	.06** (0.02)	.13* (0.06)	---	--	
Vegetative (5, 292)	6.77***	.22 (0.35)	.06 (0.08)	.09*** (0.02)	.15 (0.08)	-.34** (0.12)	--	
<u>Mother-child Agreement</u>								
Total (4, 273)	3.02*	-.45 (0.60)	.45** (0.14)	-.02 (0.03)	.11 (0.10)	---	--	
Mood (4, 300)	4.54**	-.02 (0.19)	.19*** (0.05)	.00 (0.01)	.00 (0.03)	---	--	
Cognitive (4, 284)	2.24	.04 (0.29)	.12 (0.07)	-.03 (0.01)	.06 (0.05)	---	--	
Vegetative (4, 288)	1.31	-.37 (0.32)	.15* (0.08)	.00 (0.02)	.04 (0.05)	---	--	

Note. BDI: Beck depression Inventory. The following interaction terms were included in the initial models, but not in any of the final models: BDI X Age, BDI X Sex, Mother's Education X Child Age.

* p<0.05

** p<0.01

*** p<0.001.