How do the predictors of conduct problems/hyperactivity and Callous-Unemotional (CU) traits in children differ according to mothers’ and teachers’ ratings?

C. Ekin Eremsoy a, A. Nuray Karancı b, Sibel Kazak Berument b

a Dogus University, Actıbadem, Kadıköy, Istanbul 34722, Turkey
b Middle East Technical University, Ankara, 06532, Turkey

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Abstract

This study investigated the predictors of conduct problems/hyperactivity and callous-unemotional (CU) traits in children. It was hypothesized that conduct problems/hyperactivity and CU traits are associated with different risk factors. The participants of the study composed of 513 teacher-nominated elementary school children with a mean of 9.62 years of age. Regression analyses revealed some significant differences between risk factors of conduct problems/hyperactivity and CU traits. In addition, predictors according to mothers’ and teachers’ ratings were not the same, except for some overlapping variables. The results were discussed in terms of using of multiple informants for assessing different problem areas in children.

Keywords: Conduct problems; callous-unemotional (CU) traits; risk factors; multi-informant agreement; child psychopathology.

1. Introduction

Applying the concept of psychopathy to the development of conduct problems in children is a relatively new approach in child psychopathology literature. Although the distinction between childhood-onset and adolescent-onset patterns of antisocial behaviors is widely accepted for prediction of different risk factors and adult antisocial behavior in future (Moffitt et al., 1996), studies in the last decade showed that the childhood-onset group is not a homogenous group in itself (Frick & Ellis, 1999). Nowadays, research on childhood-onset conduct problems suggests a theoretical model with two distinct etiological pathways, each having different relationships with variables found to be associated with child antisocial behavior in past research. According to this model, one group of children experience impulsivity and conduct problems, and a second group of children experience impulsivity and conduct problems along with callous-unemotional (CU) traits (Frick et al., 1994), which are similar to the interpersonal and affective characteristics seen in psychopathic adults (Hare et al., 1991; Harpur et al., 1989). The presence of psychopathic traits in the second group has been found to be associated with greater severity and variety of conduct problems suggesting a separate and more severe developmental pathway both in clinic-referred...
(Christian et al., 1997) and in community samples (Frick, Bodin et al., 2000). The behavior problems of these children appear to develop regardless of parenting behaviors and intellectual deficits, but more strongly associated with deficits in the processing of emotional stimuli (O’Brien & Frick, 1996; Patrick et al., 1993). These results highlight the importance of recognizing distinct subgroups of children within groups of children with childhood-onset conduct problems when studying potential risk factors (Wootton et al., 1997).

In general, the present study aimed to investigate and compare the risk factors of conduct problems and CU traits. Although there are plenty of research studies on potential risk factors of conduct problems, such as child’s characteristics, parental psychopathology, parenting practices, family functioning, and socioeconomic factors, little research has focused on the potential risk factors of CU traits. Furthermore, besides the mothers, the present study also utilized teachers as reporters of behavior problems in children, because using multiple informants in assessing childhood psychopathology is highly recommended in the literature (Kamphaus & Frick, 1996). More specifically, researchers recommend the use of parents as informants for emotional problems and of teachers for externalizing problems in children (Goodman et al., 2000). Because CU traits are regarded as emotional qualities and conduct problems are mainly defined by behavioral ones, reports of multiple informants were used in this study. Specifically, this study aimed to answer the following research questions: 1. Which predictors differentiate children’s conduct problems and CU traits?, 2. Do these predictors differ according to mothers’ and teachers’ reports?

2. Method

2.1 Participants

The participants of the study composed of 513 teacher-nominated elementary school children with 145 (28.3%) females and 368 (71.7%) males. More specifically, among the 513 children, 272 (82 from high SES group, with 16 females and 66 males; and 190 from low SES group, with 31 females and 159 males) were nominated as having conduct problems and 241 (78 from high SES group; with 48 females and 30 males, and 163 from low SES group; with 50 females and 113 males) were nominated as having pro-social behaviors by their elementary school teachers. The age of the total sample ranged from 8 to 11 with a mean of 9.62 years ($SD = 1.20$). Fifteen elementary schools were chosen according to their socioeconomic profile, so that the sample represents children with different socioeconomic backgrounds.

2.2 Measures

Seven measures were used in this study. *Strengths and Difficulties Questionnaire* (SDQ; Goodman, 1997) is a brief behavioral screening questionnaire designed to assess the pro-social behavior and emotional and behavioral problems of children in five subscales. In the Turkish adaptation study (Eremsoy et al., 2006) four subscales were found. In the present study only the Conduct Problems/Hyperactivity subscale was used to assess behavioral problems of children. *Antisocial Process Screening Device* (APSD; Frick & Hare, 2002) evaluates the presence of psychopathic traits and antisocial behaviors in children between the ages of 6 and 13. APSD includes three subscales and a total score indicating higher antisocial tendencies. Turkish adaptation study of the APSD was conducted by Eremsoy (2007). In the present study only the CU subscale of APSD was used to assess psychopathic traits in children. *School-Age Temperament Inventory* (SATI; McClowry, 1995) is a parental report assessing the temperament of children between 8-11 years of age and contains four dimensions. Turkish adaptation study was conducted by Eremsoy et al. (2008). In the present study only the Negative Reactivity dimension was used. *Parental Acceptance-Rejection Questionnaire-Mother Form* (PARQ-Mother; Rohner et al., 1978) is a self-report of maternal parenting styles. Turkish adaptation of the PARQ-Mother was conducted by Anjel (1993). In the current study the Total Rejection score was used. *McMaster Family Assessment Device* (MMFAD; Epstein et al., 1983) evaluates different problem areas within the family functioning. In its original version MMFAD has six subscales, namely Problem Solving, Communication, Roles, Affective Responsiveness, Affective Involvement, and Behavior Control. But in the Turkish adaptation study, one more subscale, which assesses general functioning of the family, has been added (Bulut, 1990). *Brief Symptom Inventory* (BSI; Derogatis, 1992) assesses severity of different clinical symptoms. Psychometric studies of the BSI for Turkish samples were made by Şahin and Durak (1994). In the current study, the total scale score of the BSI was used to assess the severity of clinical symptoms of the mothers and fathers. Lastly, a *Demographic Information Form* was developed by the researcher in order to collect
information about some demographic characteristics of the family members. In addition, some questions regarding the parental disciplining practices were asked in this form. Mothers of the children were asked to fulfill the Demographic Information Form with an informed consent, SATI, MMFAD, BSI, and the parent forms of SDQ, APSD, and PARQ. Besides the mothers, fathers were also given the BSI. Additionally, teachers of the same children were given teacher forms of the SDQ and APSD.

3. Results

For the whole sample, in comparison to females (M = 0.47 both for mother and teacher ratings), males (M = 0.63 for mother and M = 0.74 for teacher ratings) had higher levels of conduct problems/hyperactivity according to both mother (t(511) = -3.77, p < .001) and teacher ratings (t(447) = -3.99, p < .001). In addition, according to both mother and teacher ratings, males (M = 0.41 and M = 0.79) had significantly higher CU traits compared to females (M = 0.33 and M = 0.51), t(511) = -2.48, p < .05 and t(444) = -4.51, p < .001, respectively.

3.1 Correlations among Conduct Problems/Hyperactivity and CU Traits

According to mother ratings, conduct problems/hyperactivity and CU traits were positively and moderately correlated with each other, r = .42, p < .001. However, teacher-reported conduct problems/hyperactivity and CU traits were positively but highly correlated with each other, r = .80, p < .001. Furthermore, as expected, mother and teacher ratings of conduct problems/hyperactivity (r = .47, p < .001) and mother and teacher ratings of CU traits (r = .36, p < .001) were positively and moderately correlated with each other.

3.2 Regression Analyses: Predictors of Conduct Problems/Hyperactivity and CU Traits

Four separate stepwise multiple regression analyses were conducted on: 1. Mother-reported conduct problems/hyperactivity, 2. Mother-reported CU traits, 3. Teacher-reported conduct problems/hyperactivity, and 4. Teacher-reported CU traits. In all of these analyses, the same set of variables was used as predictor variables. In the first block, child-related demographic variables, namely gender and age were entered. In the second block, child’s temperament of negative reactivity measured by SATI was entered followed by socio-demographic variables of the family, namely mother’s and father’s education, mother’s and father’s age, total number of children, total number of household members, and SES in the third block. Finally, in the forth block, parenting, parental, and family variables, namely, maternal rejection (PARQ-Mother Total score), style of applied punishment (physical and response-cost), severity level of parents’ clinical symptoms evaluated by BSI, and family functioning scores assessed by seven subscales of MMFAD were entered.

3.2.1 Mother Ratings

A stepwise multiple regression analysis was conducted to predict mother-reported conduct problems/hyperactivity scores. In the final model, being male, child’s temperament of negative reactivity, mother’s low education level, higher maternal rejection, higher levels of physical and response-cost punishment, low levels of affective involvement within the family, and mother’s psychopathology appeared as significant predictors. Totally, all variables explained 51% of the variance in mother-reported conduct problems/hyperactivity (F[9, 446] = 49.23, p < .001). A similar stepwise multiple regression analysis was conducted on mother-reported CU trait. Being male, child’s temperament of negative reactivity, father’s low education level, higher number of household members, higher maternal rejection, less severity of mother’s psychopathology, problems regarding to the roles within the family and low levels of general functioning within the family appeared as significant predictors in the final model. Totally, all variables explained 31% of the variance in mother-reported CU traits (F[9, 446] = 21.78, p < .001).

3.2.2 Teacher Ratings

The third similar stepwise multiple regression analysis was formulated to predict teacher-reported conduct problems/hyperactivity scores. The result of regression analysis showed that being male, father’s low education level, high socio-economic status of the family, higher maternal rejection, and higher physical and response-cost punishment were significant predictors. Totally, all variables explained 23% of the variance in teacher-reported conduct problems/hyperactivity (F[8, 391] = 14.96, p < .001). The last stepwise multiple regression analysis was
formulated to predict teacher-reported CU traits. In the final model, being male, having many children, father’s low education level, high socio-economic status of the family, higher levels of physical and response-cost punishment, and problems regarding to the roles within the family appeared as significant predictors. Totally, all variables explained 26% of the variance in teacher-reported CU traits ($F[10, 389] = 13.61, p < .001$).

4. Discussion

In general, the present study was designed to investigate the predictors of conduct problems and CU traits. Because studies using clinic-referred conduct disordered children show that these children are usually from low socioeconomic families, the present study included non-clinic referred children from different socioeconomic levels. In order to reach children with conduct problems in a non-clinic population, class teachers were asked to nominate children with conduct problems in their classes. However, in this study, the criteria used for teacher-nomination mainly included features related to overt conduct problems, such as bullying, fighting, or aggression, which are found more common in boys especially during childhood, rather than covert ones (Tiet et al., 2001; Zoccolillo, 1993). This might have resulted in having more males ($n = 368, 71.7\%$) as compared to females ($n = 145, 28.3\%$) in the sample. Results showed that as compared to females, males have higher levels of conduct problems/hyperactivity and CU traits according to all ratings. This result was consistent with the most repeated finding in the literature, suggesting that there are gender differences in aggression and conduct problems during the early school years (Keenan & Shaw, 1997).

In general, it was hypothesized that conduct problems and CU traits will be associated with different risk factors, supporting the model for separate developmental pathways for children with psychopathic tendencies (Christian et al., 1997; Frick, Barry et al., 2000; Frick et al., 1994; Wootton et al., 1997). First of all, results of this study showed a moderate but significant correlation between conduct problems/hyperactivity and CU traits for mother ratings. This moderate correlation was consistent with the findings in previous studies (Frick et al., 1994), indicating that CU traits and conduct problems are two separate, but correlated psychological constructs. However, one of the most striking findings was the extremely strong positive correlation between conduct problems/hyperactivity and CU traits for teacher ratings, which was indicative to a very strong association or lack of differentiation between these two variables according to teacher ratings. It might be thought that teachers could not differentiate these two constructs appropriately from each other and as a result when they label a child as having behavior problems, they might be viewing the child as problematic in every aspect. In other words, teachers may have a general schema about negative behaviors of children and may generalize problems present in one aspect to all behavioral and/or emotional domains. Furthermore, consistent with the literature, results showed that mother and teacher ratings of conduct problems/hyperactivity and of CU traits were moderately and positively correlated with each other.

In general when predictors of mother rated conduct problems/hyperactivity and CU traits are considered together, it becomes apparent that male gender of the child is an important predictor both for conduct problems/hyperactivity and CU traits. The significant association between conduct problems/hyperactivity and negative reactivity as a temperament is consistent with results of many studies in the literature (Eisenberg et al., 1994; Sanson et al., 1993). However, unexpectedly, negative reactivity predicted also CU traits significantly according to mother ratings. This result is unfortunate because one of the most important finding in literature is the inverse relationship between negative reactivity and psychopathy (Kimonis et al., 2006). Because the negative reactivity level of children was assessed only by maternal report, these inconsistent finding needs further testing by using multiple informants and independent observations of children. Among the socio-demographic characteristics of the family, while mother’s low education level predicted conduct problems/hyperactivity, father’s low education level and higher number of household members predicted CU traits. All these variables are associated with low SES measures and these relationships are meaningful when the high association between conduct problems/hyperactivity and CU traits are taken into account. Among parenting variables, maternal self-report of rejection, severity of punishment practices, and less affective involvement within the family predicted mother rated conduct problems/hyperactivity. On the other hand, supporting the distinct nature of conduct problems and CU traits, CU traits were not predicted by severity of punishment practices and less affective involvement within the family, in line with the studies supporting the affective unresponsiveness of the children having these traits (Oxford et al., 2003; Wootton et al., 1997). One of the most important findings of this study is the exact opposite association between maternal psychopathology and conduct problems/hyperactivity and CU traits. More specifically, according to mother ratings, while mothers’ psychopathology was found to be positively related to conduct problems/hyperactivity, it was found to be negatively related to CU traits. More specifically, mothers with high levels of psychopathology reported higher levels of
conduct problems/hyperactivity in their children. This result was consistent with findings regarding the significant relationship between maternal psychopathology and conduct problems in literature (Frick et al., 1989; Lahey et al., 1989). However the negative relationship between mother-reported CU traits and mother’s psychopathology level was surprising. This raises the possibility that mothers with high levels of psychopathology may be reluctant or unresponsive to CU traits in their children. They may not notice CU traits in their children and may not regard them as problematic. On the other hand, they may underestimate, deny, or underreport their own problems, which resulted in negative correlation between mothers’ psychopathology and children’s CU traits in this study. This result is inconsistent with the findings in the literature indicating a stronger parental psychopathology in high CU groups as compared to children with conduct problems but low CU traits (Christian et al., 1997). Another crucial finding of this study was that children from families with higher levels of problems regarding the roles within the family had elevated levels of CU traits. A possible explanation for this finding might be the problems regarding the boundaries between children and parents in these families. However, this significant association needs further testing for more clear interpretations. In addition, according to mother ratings, there was a positive association between general dysfunctioning within the family and children’s CU traits.

In general, given the similar content of the teacher-and parent-rated scales, one would expect to find similar predictors of conduct problems/hyperactivity and CU traits for each informant. However, parallel to the results of other studies in the literature (Achenbach et al., 1987; Kolko & Kazdin, 1993), there were discrepancies among predictors of mother and teacher ratings of conduct problems/hyperactivity and CU traits. It could be concluded that risk factors predicted mother’s report of conduct problems/hyperactivity more consistently to the findings in the literature as compared to teacher’s report of conduct problems/hyperactivity. The reason for this difference might be related to the use of mothers as informant for most of the variables investigated in the study. Another explanation for this dissimilarity is that conduct/hyperactivity problems may be presented differently at home and at school or putting in other words, different symptoms may appear in different settings, depending on the demands of the situation. On the other hand, similar levels of conduct problems/hyperactivity may be displayed at both home and school, but the behaviors may be viewed differently in these different settings by different informants. These assumptions need further investigations for clarification. Similar to the predictors of conduct problems/hyperactivity, predictors of CU traits according to mothers’ and teachers’ ratings were not the same. Except the male gender of the child, roles within the family were the only common predictor. One explanation for this dissimilarity could be that CU traits, which are regarded as the emotional features of psychopathy, might have been viewed differently by the teachers at school and by mothers at home. In general, it is hard to infer that mothers and teachers could differentiate conduct problems/hyperactivity and CU traits. It seems that mothers could differentiate these two problem areas better than teachers. The reason of the difficulty of teachers to observe CU traits might be due to the emotional nature of this construct. This interpretation is parallel to Abikoff et al.’s (1993) suggestion that multi-informant agreement varies considerably depending on item content of the measures. More specifically, while teachers were found to be more sensitive to items referring to disruptive behaviors, parents were found to be more sensitive to items related to internalizing problems. However, the suggestion on mothers' ability to differentiate conduct problems/hyperactivity and CU traits better than teachers has some limitations, mainly because some of the predictors were inconsistent with the previous literature. This raises questions about whether there are cultural differences in expression of CU traits in children.

References


