Callous unemotional traits in children with disruptive behavior disorder: Predictors of developmental trajectories and adolescent outcomes

Pietro Muratori [a,*], John E. Lochman [b], Azzurra Manfredi [a], Annarita Milone [a], Annalaura Nocentini [c], Simone Pisano [d], Gabriele Masi [a]

[a] IRCCS Fondazione Stella Maris, Scientific Institute of Child Neurology and Psychiatry, Calambrone, Pisa, Italy
[b] The University of Alabama, Tuscaloosa, AL, USA
[c] Department of Sciences of Education and Psychology, University of Florence, Firenze, Italy
[d] Department of Mental and Physical Health and Preventive Medicine, Child and Adolescent Psychiatry Division, Second University of Naples, Italy

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ABSTRACT

The present study investigated trajectories of Callous Unemotional (CU) traits in youth with Disruptive Behavior Disorder diagnosis followed-up from childhood to adolescence, to explore possible predictors of these trajectories, and to individuate adolescent clinical outcomes. A sample of 59 Italian referred children with Disruptive Behavior Disorder (53 boys and 6 girls, 21 with Conduct Disorder) was followed up from childhood to adolescence. CU traits were assessed with CU-scale of the Antisocial Process Screening Device-parent report. Latent growth curve models showed that CU traits are likely to decrease linearly from 9 to 15 years old, with a deceleration in adolescence (from 12 to 15). There was substantial individual variability in the rate of change of CU traits over time: patients with a minor decrease of CU symptoms during childhood were at increased risk for severe behavioral problems and substance use into adolescence. Although lower level of socio-economic status and lower level of parenting involvement were associated to elevated levels of CU traits at baseline evaluation, none of the considered clinical and environmental factors predicted the levels of CU traits. The current longitudinal research suggests that adolescent outcomes of Disruptive Behavior Disorder be influenced by CU traits trajectories during childhood.

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1. Introduction

Disruptive Behavior Disorders (DBDs), including Oppositional Defiant Disorder (ODD) and Conduct Disorder (CD), are serious mental disorders associated with a host of social, emotional, and behavioral problems, both current and later emerging, with high costs for the community (Kolko et al., 2009). In order to reduce the apparent heterogeneity of DBDs, psychopathic traits have been proposed as a relevant factor in subtyping conduct problems (White and Frick, 2010). The conceptualization of psychopathic traits in children typically focuses on the presence of Callous-Unemotional (CU) traits: lack of empathy and guilt, constricted affects, deceitfulness, shallow and deficient emotions (American Psychiatric Association, 2013).

Previous longitudinal studies showed that CU traits in childhood were concurrently and prospectively associated with severe conduct problems (Lynam et al., 2009; Lopez-Romero et al., 2012), and lower levels of pro-social behavior, social competence skills and emotional regulation (Viding et al., 2009; Masi et al., 2015). In addition, poorer adolescence outcomes for children with high CU traits have been reported not only in children with DBDs, but also in community samples (for a review see Frick et al. (2014)).

Although elevated levels of CU symptoms are associated with future antisocial behavior, not all youths with these symptoms in childhood continue to show them into adolescence. For this reason, several studies have examined the stability of CU traits across childhood or from childhood to early adolescence (Frick et al., 2003; Dadds et al., 2005; Obradivic et al., 2007; Fontaine et al., 2010, 2011). For instance, Fontaine et al. (2010) found that a small proportion of children have unstable levels of CU traits over time, although elevated levels of CU traits (even if unstable) represent a relevant marker for risk of adjustment problems in early adolescence.

All these previous studies focused primarily on normative or at-risk samples; specifically, no studies examined in a clinical sample the association between CU traits in childhood and later

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* Correspondence to: IRCCS Stella Maris, Viale del Tirreno 331, 56018 Calambrone (Pisa) Italy.
    E-mail address: pietro.muratori@fsm.unipi.it (P. Muratori).

outcomes using a growth curve analysis. In the current study, we used the growth curve modeling to explore the trajectories of CU traits from childhood to adolescence in a clinical sample. Moreover, individual differences in growth trajectories can predict dysfunctional adolescent outcomes, and early environmental and clinical factors can predict individual differences in CU traits growth trajectories over time. In our opinion, understanding whether CU traits trajectories could be influenced by environmental and/or clinical variables may be relevant to identify possible treatment targets.

1.1. Predictors of CU traits

A number of variables emerged from previous studies as risk or protective factors for high and stable levels of CU traits during childhood, both child and environmental related. Among the former, genetic and temperamental variables, early-onset conduct problems and hyperactivity comorbidity have been reported as mostly influential; regarding environmental variables, low family's socio-economic status is the most important predictor of high CU traits (Viding et al., 2005; Fontaine et al., 2011). Further, growing evidence indicates that parenting practices may also influence the maintenance of CU traits in children over time. Although harsh and coercive discipline has been associated with conduct problems in youths with normal levels of CU traits (Pasalich et al., 2011), some studies suggest that these dysfunctional parenting practices may affect CU traits themselves (Barker et al., 2011). However, (Viding et al., 2009) showed that during the transition to early adolescence, negative parental discipline operates as a non-shared environmental risk factor for development of conduct problems, but not for the development of CU traits. Previous studies suggested also that high parental involvement is associated to a decrease in CU traits over time (Pardini et al., 2007), whereas parental monitoring may be the most relevant dimension of parenting in the adolescence period (Munoz et al., 2011).

The present study aims to explore growth trajectories of CU traits in a sample of children with DBD diagnosis referred to a mental health service. The trajectories of CU features were investigated in children followed-up from childhood to adolescence (ages 08–09 to 14–15 years), using a growth curve analysis. We firstly investigated the growth curve of CU traits and inter-individual variability. Secondly, we explored the role of several predictors of these trajectories, including socio-economic and parenting variables, baseline diagnosis (ODD or CD), comorbidity (ADHD and Mood Disorder-MD), general functioning, and additional pharmacological treatment. Finally, we included in the model clinical outcomes in adolescence. Overall, we hypothesized that a slower decrease of CU traits during childhood is associated to a higher risk for poorer clinical outcomes into adolescence (severe aggression and antisocial behaviors in early adolescence, such as externalizing symptoms, substance use and CD diagnosis).

2. Method

2.1. Participants and procedure

A sample of children firstly referred for behavioral problems to a pediatric psychiatric hospital and received a systematic evaluation. Trained child psychiatrists administered separately to parents and youths a diagnostic clinical interview, the Schedule for Affective Disorders and Schizophrenia for School- Age Children-Present and Lifetime Version (K-SADS-PL) (Kaufman et al., 1997). Cognitive abilities in all the participants were assessed with the Wechsler Intelligence Scales for Children – 3rd Ed (WISC-III) (Wechsler, 1991).

A sample of 63 children fitted the following inclusion criteria: (01) DSM-IV-TR main diagnosis of Oppositional Defiant Disorder (ODD) or Conduct Disorder (CD) according to K-SADS-PL and DSM-IV criteria; (02) a Full Scale IQ greater than 85; (03) a Child Behavior Check List externalizing score above 63; (04) Children Global Assessment Scale (C-GAS) score below 60. Exclusion criteria were the presence of acute neurological or medical disease. Four patients were lost in the follow-up, and the remaining 59 were included in the study. The same 59 children were assessed at each follow-up; they were 53 boys and 06 girls, 48 (82%) Caucasian and 11 (18%) African, 38 (65%) with ODD and 21 (35%) with CD; 18 (28%) children presented also an ADHD comorbidity. Regarding family socioeconomic status (SES), assessed with the Hollingshead and Redlich scale (1958), 19 (29%) of families resulted with low SES, and 30 (50%) with medium SES. Location of the sample was the west coast of Tuscany (Italy), urban context.

All the participants were treated with a multi-component treatment using cognitive behavioral practices (see Masi et al., 2013; 2014). The treatment lasted 15 months, organized in weekly sessions including individual psychotherapy for children and individual parent training. 21 Patients received an additional pharmacotherapy: 10 an antipsychotic, 03 a mood stabilizer, and 08 methylphenidate.

The participants were 09 years of age at the beginning of the study, and were followed-up until the age of 15 years. Data were collected at Time 01 (before treatment; 09 years old), Time 02 (at the end of the treatment: 18 months after the pretest; 10.5 years old), Time 03 (first follow up: 34–36 months after the pretest; 12 years old) and Time 04 (second follow up; 70–72 months after the pretest; 15 years old). Written consent was obtained from parents at initial enrollment and in each of the following assessments through the course of the study. The Ethical Committee of our Hospital approved the study.

2.2. Measures

To evaluate CU traits in children across time, the CU-scale of the Antisocial Process Screening Device-parent report (APSD) (Frick and Hare, 2001) was completed by parents at each assessment points. The APSD is a 20-item behavior rating scale with each item scored 0 (not at all true), 01 (sometimes true), or 02 (definitely true). A factor analysis revealed three APSD dimensions, a 07-item Narcissism dimension, a 05-item Impulsivity dimension, and a 06-item CU dimension, which could fit in both community and clinic-referred samples of children (Frick et al., 2000). The current study used the CU-subscale of parent report version of the APSD; in our sample, Cronbach α for assessment points from Time 01 to Time 04 for this scale was .77, .75, .73, and .79 respectively.

2.3. Pre-treatment predictors

All following measures were administered at the baseline assessment point:

2.3.1. Categorical diagnosis

Child psychiatrists administered separately to the patients and their parents the clinical interview K-SADS PL (Kaufman et al., 1997), which explores the presence or absence of each symptom according to DSM-IV. The rate of patient-parent K-SADS diagnosis agreement was 89%. The predictor was dichotomous variable, ODD vs CD. Comorbidity with ADHD or MD was also considered.

2.3.2. Level of functioning

Children's Global Assessment Scale (C-GAS) (Shaffer et al., 1983) was used to describe the severity of functional impairment. The clinician coding the CGAS on the basis of your patient's worst