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Emotional and behavioural problems in children with Developmental Coordination Disorder: Exploring parent and teacher reports



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ABSTRACT

Background: Although characterised by motor impairments, children with Developmental Coordination Disorder (DCD) also show high rates of psychopathology (anxiety, depression, low self-esteem). Such findings have led to calls for the screening of mental health problems in this group.

Aims: To investigate patterns and profiles of emotional and behavioural problems in children with and without DCD, using the Strengths and Difficulties Questionnaire (SDQ).

Methods and procedures: Teachers and parents completed SDQs for 30 children with DCD (7–10 years). Teacher ratings on the SDQ were also obtained from two typically-developing (TD) groups: 35 children matched for chronological age, and 29 younger children (4–7 years) matched by motor ability.

Outcomes and results: Group and individual analyses compared parent and teacher SDQ scores for children with DCD. Teacher reports showed that children with DCD displayed higher rates of emotional and behavioural problems (overall, and on each subscale of the SDQ) relative to their TD peers. No differences were observed between the two TD groups. Inspection of individual data points highlighted variability in the SDQ scores of the DCD group (across both teacher and parent ratings), with suggestions of elevated hyperactivity but comparably lower levels of conduct problems across this sample. Modest agreement was found between teacher and parent ratings of children with DCD on the SDQ.

Conclusions and implications: There is a need to monitor levels of emotional and behavioural problems in children with DCD, from multiple informants.

What this paper adds

In this study, we present a detailed investigation of emotional and behavioural problems in children with Developmental Coordination Disorder (DCD), using parent- and/or teacher-report versions of the Strengths and Difficulties Questionnaire (SDQ). We used both group and individual analysis, which enabled us to compare teacher-ratings of children with DCD to typically developing children (those who were matched for age, as well as younger children matched for motor ability), and to each other. Results demonstrated that there was variability in the SDQ scores of DCD children (across both parents and teacher ratings), but also some

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broad patterns; for example, individually, children with DCD tended to show high levels of hyperactivity, but comparably lower levels of conduct problems. For children with DCD, levels of agreement between parent and teacher ratings on the SDQ were modest. This suggests that information on emotional and behavioural problems in DCD should be collected from multiple informants.

1. Introduction

Developmental Coordination Disorder (DCD, sometimes referred to as dyspraxia) affects between 2 and 6% of children (American Psychiatric Association [APA], 2013; Lingam, Hunt, Golding, Jongmans, & Emond, 2009) and is characterised by motor skills that are significantly below age-expected levels, persisting despite opportunities to acquire and develop these skills. These motor impairments must: have a significant impact on activities of daily living and academic achievement; occur early in development; and not be better accounted for by an alternative explanation (e.g., general medical conditions, intellectual disabilities, visual impairments) (APA, 2013).

There are several reasons why children with DCD may present with emotional and behavioural difficulties. Despite being of average or above average intelligence (APA, 2013; Sumner, Pratt, & Hill, 2016), children with DCD often experience problems with school-related tasks (e.g., handwriting, organising their workload, completing tasks on time) (Zwicker, Missiuna, Harris, & Boyd, 2012). DCD also negatively affects leisure participation (Zwicker et al., 2012), meaning that children may become less likely to engage in group activities with peers (Chen & Cohn, 2003), potentially leading to social isolation and loneliness (Missiuna, Moll, King, Stewart, & MacDonald, 2008; Poulsen, Ziviani, Cuskelly, & Smith, 2007). Further, high rates of psychopathology – including anxiety (Pratt & Hill, 2011) as well as depression and low self-esteem (Lingam et al., 2012; Piek et al., 2007) – have been reported in children with DCD. DCD also commonly co-occurs with other conditions, such as attention-deficit-hyperactivity disorder (ADHD), which is often associated with emotional and behavioural problems (Missiuna et al., 2014).

There have been calls for the screening of mental health problems in children with DCD (Rigoli & Piek, 2016), with the Strengths and Difficulties Questionnaire (Goodman, 1997) being suggested as a suitable tool for assessing possible psychosocial problems; both generally (Goodman, Ford, Simmons, Gatward, & Meltzer, 2000) and in the DCD population (Rigoli & Piek, 2016). Using the parent-report version of the SDQ in a sample of 47 children with DCD, Green, Baird, and Sugden (2006) found that 62% of children with DCD showed ‘clinical’ levels of emotional and behavioural difficulties (13% = ‘borderline’, 15% = ‘normal’).¹ Further, 85% of the sample showed ‘significant’ problems in at least one of the five SDQ subscales (Emotional symptoms, Conduct problems, Hyperactivity, Peer problems, Prosocial behaviours). Using the teacher-report version of the SDQ, Van den Heuvel, Jansen, Reijneveld, Flapper, and Smits-Engelsman (2016) reported children with DCD ($n = 23$) to have significantly greater emotional and behavioural problems than typically developing (TD) (chronological age matched) children. However, the proportion of children showing ‘clinical’ levels of the Total difficulties scores (36%) was much lower than the 62% reported by Green et al. (2006). Indeed, mean scores across all subscales of the SDQ were lower in Van den Heuvel et al.’s (2016) sample, relative to Green et al.’s (2006) sample. This could be due to Green et al. (2006) recruiting their sample from a clinic, whereas Van den Heuvel et al. (2016) recruited their sample by screening large numbers of children and identifying those with significant motor impairments (from a community-based school sample). Alternatively, it could be due to the studies differing in their use of parent- versus teacher-report, with teachers potentially rating the children’s difficulties as less severe. This may be because teachers are less familiar with each child’s capabilities (relative to the parents), therefore underestimating the child’s difficulties. Or, it could be because teachers have a greater understanding of what typical performance is (due to working with a large range of children) and are, therefore, less likely to overestimate any difficulties. Indeed, a review of the psychometric properties of the SDQ highlighted only modest agreement between parent- and teacher-reported scores on the SDQ (Stone, Otten, Engels, Vermulst, & Janssens, 2010).

The aim of the current investigation was to explore emotional and behavioural difficulties using the SDQ in a sample of children with a confirmed clinical diagnosis of DCD. First, we sought to confirm previous reports of high levels of emotional and behavioural difficulties amongst children with DCD by comparing teacher SDQ ratings of children with DCD to two groups of TD children: (1) a group matched by chronological age (hereafter ‘CA’ group); and (2) a group matched based on motor ability (motor-match, hereafter ‘MM’ group). The latter group was comparable to the DCD group in terms of performance on a motor task but was, inevitably, younger than the DCD group. Comparisons between these two groups provide an indication of whether the observed profile of children with DCD reflects a level of immaturity, to some extent. The second aim, focusing on the DCD group only, was to investigate levels of agreement between parent- and teacher-report on the SDQ (unfortunately, we were not able to collect parent-reported SDQ data from the TD children, to also explore this comparison in the CA and MM groups). A meta-analysis comprising 14,811 children between the ages of 3–17 years (from a range of typical and clinical populations), reported correlations between parent and teacher SDQ ratings to be between 0.26 and 0.47 (Stone et al., 2010). As such, only “modest” agreement was predicted in the current study. However, adopting group and individual analyses to explore this research question allowed more detailed analyses than has been undertaken in previous research. Further, it enabled us to explore individual profiles of emotional and behavioural problems across the DCD group.

¹ Note: these figures only add up to 90%, as reported in the Green et al. (2006) paper.

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