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The development of behavior problems among disabled and non-disabled children in England

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ABSTRACT

This study identifies the incidence and development of disabled children's problem behaviors (i.e., conduct, peer, hyperactivity, and emotional problems) during the early years. Using the Millennium Cohort Study, a nationally representative UK study, and a measure of disability anchored in the UK legal definition, we estimate growth curve models tracking behavior problems from ages 3 to 7. We examine whether disabled girls' and boys' behavior differs from their non-disabled peers, and whether it converges with or diverges from them over time. We investigate whether parenting and the home environment moderate associations between disability and behavior. We show that disabled children exhibit more behavior problems than non-disabled children at age 3, and their trajectories from ages 3 to 7 do not converge. Rather, disabled children, particularly boys, show increasing gaps in peer problems, hyperactivity, and emotional problems over time. We find little evidence that parenting moderates these associations.

1. Introduction

The emergence of problem behavior during the early years may set children upon unfavorable developmental trajectories. This is particularly true in the case of early externalizing behavior problems (i.e., hyperactivity, aggression), which may lead to continued problems and poor academic achievement (see e.g., Campbell, Shaw, & Gilliom, 2000; Hinshaw, 1992). Boys and girls tend to exhibit problem behavior differently, with higher rates of externalizing problems documented for boys and, to some extent, more internalizing problems (withdrawal, depression) for girls (see, e.g., Baillargeon et al., 2007; Campbell, 1995; Keenan & Shaw, 1997; Midouhas, Kuang, & Flouri, 2014). Past research has shown that disabled children are more likely than their non-disabled peers to present behavior problems, including social and peer problems, conduct problems and oppositional behaviors, attention difficulties and hyperactivity, and internalizing problems, and that their problems are more likely to be within the clinical range relative to their peers (Alloway, Gathercole, Kirkwood, & Elliott, 2009; Baker et al., 2003; Eisenhower, Baker, & Blacher, 2005; Emerson & Einfeld, 2010; Landa, Gross, Stuart, & Faherty, 2013).

Yet, we know little about the extent to which associations between disability and behavior are linked to children's developmental stage and whether they attenuate or intensify around the time of school entry. We know from decades of research the critical nature of the early years, in which both genes and the environment—and the interplay between the two—set into motion the development of brain structures that affect children for the rest of their lives (Shonkoff & Phillips, 2000). More proximally, children's development up to age 3 provides the building blocks for the increasingly complex social behaviors, emotional maturity, problem solving ability, and early literacy and numeracy skills that are critical leading up to school entry. For some children, early behavioral problems are temporary, resolved over the normal course of development, while for others they persist or even intensify in the early school years. School entry represents an expansion in children's developmental ecology from the primacy of parents and the home environment to incorporate the school context and peers. Whether disabled children's behavioral development tracks that of their non-disabled peers over the first few years following this transition to school is an important empirical endeavor, a better understanding of which will help to inform the timing of interventions for disabled children. A description of disabled children's early behavioral trajectories across four important domains of behavioral development is the first contribution of this paper.

Our current understanding of the association between disability and behavior is limited by the focus on particular impairments or conditions and reliance on small-scale, localized studies, both of which hamper

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generalizability. Many common proxies for disability in UK-based studies, such as identification with special educational needs (SEN), may confound the measurement of disability with the measurement of problem behaviors (Keil, Miller, & Cobb, 2006; Keslair & McNally, 2009; Powell, 2003). Here, instead, we exploit an overarching measure of disability anchored in the UK legal definition, itself informed by the social model of disability, which distinguishes the impairments themselves from the societal conditions under which they become disabling (Oliver, 1990). Our measure, which takes account of the contextualized nature of limitations or impairments, was developed from the data in consultation with the leading UK child disability experts and validated against known correlates of disability. This measure defines disability as both longstanding *and* limiting daily activities (longstanding limiting illness; LSLI), in line with guidance on the legal definition. It incorporates long-term health conditions, mental health problems, and sensory impairments, among others, enabling us to capture a wide range of disabling conditions experienced by a nationally representative sample of young children in England. Use of this measure improves our understanding of the associations between disability, rather than specific impairments or conditions that may or may not be limiting, and behavior, the paper's second contribution.

Given the importance of the family and home environment for young children's behavioral development, supportive and enriching experiences in the home could help mitigate the development of behavior problems for young disabled children. On the other hand, given increased levels of parenting stress associated with parenting a young disabled child (Baker et al., 2003; Hastings, 2002; Neece, Green, & Baker, 2012), it may be that less favorable family climates exacerbate differences in behavior problems between disabled and non-disabled children. To our knowledge, despite the wealth of research attesting to the importance of home environment on children's development, and the ways in which it can mitigate socio-economic disadvantage (see e.g., Siraj-Blatchford, 2010), research has not examined whether family environments promote greater convergence or divergence of behavioral trajectories between disabled and non-disabled children over time. The paper's third contribution is to investigate the moderating role of parental warmth and harshness and the home learning environment on disabled children's behavioral trajectories; notably to better understand which aspects of parenting and the home environment attenuate or exacerbate which problem behaviors.

Using longitudinal data from the UK Millennium Cohort Study (MCS), a large, nationally representative sample of children born in 2000–2001, we examine four problem behaviors: conduct problems, hyperactivity, peer problems, and emotional symptoms. These distinct types of problem behavior have been shown to be important for children's development, and they may present differently over time for disabled and non-disabled children. We address the question of whether young disabled children growing up in England experience more behavioral problems, and in which domains, than their non-disabled counterparts at age 3, and if any initial gap in behavior widens between the ages of 3 and 7. Finally, we examine whether differences in behavioral trajectories are contingent on three aspects of parenting and the home environment.

1.1. Behavioral problems and disabled children

A large body of research attests to specific trajectories associated with the four types of childhood behavior problems (i.e., conduct problems, hyperactivity, peer problems, emotional symptoms), with the preschool and initial school years considered the time when most children learn to control early problematic behavior, particularly externalizing behaviors (Bongers, Koot, van der Ende, & Verhulst, 2003; Broidy et al., 2003; Campbell et al., 2000; Fanti & Henrich, 2010; Tremblay et al., 2004). While conduct, hyperactivity, and peer problems typically decline over this time (Flouri, Midouhas, & Joshi, 2014; Midouhas et al., 2014), emotional symptoms tend to be stable or increase (Bongers et al., 2003; Leve, Kim, & Pears, 2005; Midouhas et al., 2014). The exception to this general pattern is a small subset of children, comprising more boys than girls, who display high levels of physical aggression that persist (Broidy et al., 2003; Campbell et al., 2000; Tremblay et al., 2004). These studies do not, however, distinguish between disabled and non-disabled children. Studies that have explored the relationship between disability and behavior in the early years have shown that, relative to non-disabled children, disabled children experience more total behavioral problems, more serious and clinically significant problems, and more persistent problem behavior (Alloway et al., 2009; Baker et al., 2003; Eisenhower et al., 2005; Emerson & Einfeld, 2010; Guralnick, Hammond, Connor, & Neville, 2006; Landa et al., 2013; Midouhas, Yogaratnam, Flouri, & Charman, 2013), suggesting that general declines reported for conduct, hyperactivity, and peer problems in the early school years may occur later or not at all for disabled children. Further, a recent study found that disabled children were particularly susceptible to increases in internalizing symptoms (Hauser-Cram & Woodman, 2016). These findings are largely based on small, non-representative cross-sectional samples and tended to focus on one particular type of impairment and more global problem behavior (rather than specific types). While researchers have used the MCS, the data source used here, to explore links between disability and children's behavior (see e.g., Emerson & Einfeld, 2010; Midouhas et al., 2013), it has not previously been used to classify young children according to criteria aligned with the UK legal definition of disability, nor have disabled children's early behavioral trajectories been examined, focusing on the time leading up to and following school entry. Exploring four behavioral trajectories across a representative sample of children from England allows us to assess how disabled and non-disabled children may differentially respond to school entry.

A potentially important element in understanding the behavioral trajectories of young disabled children is the role of parenting and the home environment. A large body of research has demonstrated that parenting characterized by high levels of warmth, cognitive stimulation and clear limit-setting is associated with favorable emotional and behavioral outcomes for children, with the opposite findings for parenting characterized by harsh, arbitrary discipline or emotional detachment (Baumrind, 1966; Belsky, 1999; Berlin & Cassidy, 2000; McLoyd, 1998). Parents can also provide materials and experiences within the home environment, such as reading and other learning activities that promote children's early behavioral development (de la Rochebrochard, 2012; Hall et al., 2013; Kelly, Sacker, Del Bono, Francesconi, & Marmot, 2011; Kiernan & Huerta, 2008).

Yet, parenting a disabled child may yield less than optimal parenting behaviors. Parents of disabled children exhibit higher levels of stress, more coping difficulties, and more conflict than other parents, which may lead to increased child behavior problems over time (Baker et al., 2003; Eisenhower et al., 2005; Herring et al., 2006; Neece et al., 2012; Totsika, Hastings, Vagenas, & Emerson, 2014), although these studies did not differentiate between type of problem behavior. Parents' ability to parent positively depends, in part, on whether they can recognize and interpret their children's behavior and emotional states, which may be difficult with disabled children (Howe, 2006). Some parents successfully adapt to having a disabled child and are able accommodate their special needs, while others face continued challenges to their competence and confidence as parents, becoming stuck in negative interaction patterns (Bailey et al., 2006; Sanders, Mazzucchelli, & Studman, 2004). Unfavorable parenting behaviors, such as unresponsiveness, harsh discipline and negative control exacerbate both externalizing and internalizing behavior problems for disabled children (Campbell et al., 2000; Gilliom & Shaw, 2004), while positive parenting behaviors may buffer them from the development of future problems (Ellingsen, Baker, Blacher, & Crnic, 2014; Hauser-Cram & Woodman, 2016). One UK study found that parent-child relationship quality was a stronger predictor of young disabled children's global behavior problems at age 5 than was discipline or assessments of