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Sports participation of children with or without developmental delay: Prediction from child and family factors

Willa A. Marquis *, Bruce L. Baker

University of California, Los Angeles, United States

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ABSTRACT

Sports participation is beneficial to health and socioemotional adjustment in youth across development. While there is some evidence indicating lower sports participation for children with developmental delays (DD) as compared with their typically developing (TD) peers, little is known as to the predictors of this differential participation. Given the increased risk of physical and mental health difficulties for children with DD, understanding more about this disparity is important. We examined sports participation in elementary school-aged children with or without DD and examined child and family predictors of three indices of sports participation: number of sports and highest relational sport at ages 6 and 8, and consistent sports from 6 to 8. Children with TD were significantly higher on all three indicators. Mother and child factors related significantly to sports participation indices. The number of sports related positively to mother education and positive perceptions and negatively to mother employment. Relational sports were higher in boys, children with higher social skills, and lower behavior problems. In regression analyses at child age 8 that included these other variables, delay status (DD or TD) did not have a significant effect. Perspectives on varying influences on sports participation and implications for intervention are discussed.

1. Introduction

Sports participation is highly beneficial in promoting youths' physical and mental health, social adjustment, and self-confidence (Solish, Perry, & Minnes, 2010). However, there is increasing evidence of disparities in sports participation between typically developing (TD) children and children with developmental delay (DD) (Hinckson & Curtis, 2013). This is particularly problematic given the substantial disparities as well in physical and mental health between children with and without DD (Allerton, Welch, & Emerson, 2011). While an emerging body of research is exploring possible reasons for this status disparity in sports participation, there is still little known. The present study examined child and family predictors of sports participation in an elementary school-aged sample of children with or without developmental delay with the aim of gaining a better understanding of status disparities in early sports participation.

1.1. Status health disparities

Both adults and children with intellectual disability (ID) experience substantially poorer physical and mental health than their TD peers (Allerton et al., 2011). As expected, a comprehensive evaluation of over 3500 Special Olympics athletes found

* Corresponding author.
E-mail address: marquis@psych.ucla.edu (W.A. Marquis).

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notable physical disparities between children and adults with ID and the general population in hearing, vision, muscle strength, bone strength, and dental health (Corbin, Holder, & Engstrom, 2005). Additionally, varying by syndrome, ID is associated, for example, with increased rates of obesity (Murphy & Carbone, 2008), reduced postural balance and muscle performance (Blomqvist, Olsson, Wallin, Wester, & Rehn, 2013), epilepsy (Allerton et al., 2011), and severe respiratory infections (Khalili & Elkins, 2009).

With respect to mental health, prevalence rates of behavior problems and/or psychological disorders among children with ID have been found to be 31–50%, or 2.5–4 times as high as found in children with TD (Baker, Blacher, Crnic, & Edelbrock, 2002; Dekker, Koot, van der Ende, & Verhulst, 2002; deRuiter, Dekker, Verhulst, & Koot, 2007; Emerson & Hatton, 2007). Considering specific mental disorders, children with ID have been found to have higher rates of depression (Kiddle & Dagnan, 2011) and anxiety (Green, Berkovits, & Baker, 2014). The rate of ADHD among children with ID has been reported to be approximately three times that in at TD comparison group (Baker, Neece, Fenning, Crnic, & Blacher, 2010), and there is a high prevalence of ID diagnoses among children with autism spectrum disorders (Allerton et al., 2011). Due in part to failures in the health care system in treating the special needs of people with ID (Corbin et al., 2005), physical and mental health inequalities between children with and without ID often persist, and even worsen, over the course of development (Allerton et al., 2011).

1.2. Status differences in social adjustment

Beginning as early as the preschool years, children with disabilities also demonstrate poorer social adjustment than TD children (Solish et al., 2010). Often viewed as less socially competent and popular than their TD peers, children with ID are less successful at developing and maintaining peer friendships (Solish et al., 2010). Coupled with the higher rate of mental health problems, particularly behavioral and social disorders, negative societal perceptions and expectations of performance frequently prevent children with ID from taking part in social activities (Allerton et al., 2011; Murphy & Carbone, 2008).

1.3. Sports participation in children with ID

An emerging body of research has elucidated the benefits of sports participation in promoting health and adjustment in children and adults with ID. Posited as the "single most effective way" of improving health outcomes for people with ID (Robertson et al., 2000, p. 469), increased physical activity has been found to enhance physical functioning in both children and adults with ID (Khalili & Elkins, 2009; Murphy & Carbone, 2008). With respect to mental health, exercise and sports participation have been associated with increased perceptions of self-efficacy, self-esteem, and positive mood in adolescents and adults with ID (Grandisson, Tétreault, & Freeman, 2012; Hutzler & Korsensky, 2010; Vogt, Schneider, Abeln, Anneken, & Strüder, 2012). Indeed, evaluation of a Special Olympics soccer program found decreased problem behavior in youth with ID (Özer et al., 2012).

Furthermore, sports participation has been found to promote social inclusion and provide a structured environment that encourages peer interaction, social skill acquisition, and friend making (Alexander, Dummer, Smeltzer, & Denton, 2011; Murphy & Carbone, 2008; Özer et al., 2012; Solish et al., 2010). Participants from the Youth Unified Sports program of the Special Olympics, which paired individuals with ID with a TD peer of similar skill level on the same sports team, reported such social gains as inclusive and equal bonds with their TD teammates, increased positive perceptions, and local community alliances (McConkey, Dowling, Hassan, & Menke, 2013).

Despite these notable benefits of sports participation, some researchers have found that children with ID participate in fewer sports and less physical activity than their TD peers (Hinckson & Curtis, 2013; Murphy & Carbone, 2008). An emerging body of research has begun to address the reasons behind this disparity. Some research has pointed to the role of child characteristics (e.g., gross motor delays, health issues, cognitive limitations, sex) or child behavior (e.g., social limitations, disruptive behavior) as potentially causal to these differences (Darcy & Dowse, 2013; King, Shields, Imms, Black, & Ardern, 2013; McConkey et al., 2013; Westendorp, Houwen, Hartman, & Visscher, 2011). Other research has underscored the influence of logistical factors, such as family demographics, cost and transportation concerns, and competing time pressures (Buttimer & Tierney, 2005; Grandisson et al., 2012; Lin et al., 2010). Researchers have also identified attitude-based environmental obstacles, including coaches' limited knowledge about intellectual disability, resistance from parents and other adults, and lack of emotional support (Grandisson et al., 2012; King et al., 2013; McConkey et al., 2013).

Given the benefits of sports participation for children with ID, and the fact that this gap in sports participation increases with age, conducting an empirical examination of the root causes of this disparity within a developmental framework is of the utmost importance (Murphy & Carbone, 2008). Research focused on children in early elementary school, when organized sports are first available to youth, may be particularly salient for this developmental framework. Additionally, recent empirical attention toward different aspects of sports participation (e.g., frequency and social nature of sport; King et al., 2013) should be expanded upon for a more comprehensive understanding of sports participation differences.

1.4. The present study

The present study addressed two primary questions in an early school-aged sample: (1) Are there differences in sports participation between young children with DD versus age matched children with TD on three dimensions: the number of sports, relational nature of sports, and consistency of participation? and (2) What other child or parent variables are related to sports participation? We examined these three domains of sports participation across two years.