



## A pilot study exploring the use of a telephone-assisted planning intervention to promote parental support for physical activity among children and youth with disabilities



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### ABSTRACT

Parent support is an important contributor to physical activity (PA) among children and youth with disabilities (CYD). Although many parents of CYD are motivated to provide parent PA support, CYD remain insufficiently active. The multi-process action control model has been applied to understand parent PA support and highlights behavioral regulation strategies such as action and coping planning as critical for translating intentions into behavior. Parents may struggle to create and carryout planning without support. There is no known research examining telephone support as a tool to promote planning and subsequent parent PA support behavior.

**Method:** Parents (43 mothers and 6 fathers) of CYD (child  $M_{age} = 12.53$  years  $\pm 5.53$ ; 75% male; 38.6% developmental disability) completed a baseline questionnaire and were subsequently randomized to a telephone-assisted planning experimental group twice over four weeks ( $n = 23$ ) or a control group who had access to planning tools but no telephone assistance ( $n = 26$ ).

**Results:** No significant main or interaction effects emerged for parent PA support behavior. However, a significant time  $\times$  condition interaction was found for behavioral regulation strategies (i.e., action and coping planning and self-monitoring;  $F(1,44) = 5.05$ ,  $p = 0.03$ ) indicating a significant increase in the use of behavioral regulation strategies for parent PA support from baseline, for parents assigned to the telephone-assisted intervention.

**Conclusion:** These findings suggest potential for planning support as a tool to enhance behavioral regulation strategies related to parent PA support among parents of CYD.

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The benefits of physical activity (PA) are universal for all children and youth including those with disabilities (Rimmer & Rowland, 2008) that are developmental, sensory, cognitive and physical in nature. Among children and youth with disabilities (CYD), regular PA can lead to improved physical (King et al., 2003) and psychosocial (e.g., reduced depression and improved self-esteem; Janssen & LeBlanc, 2010) health, and social inclusion (Murphy & Carbone, 2008). Unfortunately, many CYD are missing out on these benefits due to insufficient activity levels (see Rimmer

& Rowland, 2008 for a review), which are often lower than their peers without disabilities (King et al., 2007; Rimmer & Rowland, 2008). For example, a recent study examining the PA patterns of CYD found that children with developmental disabilities are engaging in less PA and more sedentary activities compared to children and youth without disabilities (Tepfer, MacDonald, Tyler, & Cook, 2015). There is a need for research to develop effective interventions to enhance PA participation among CYD.

Interventions that target parents of CYD to provide support for PA (i.e., parent PA support) may be an effective strategy to increase PA among CYD. Parents can provide PA support through involvement (e.g., participating in PA with CYD), encouragement (e.g., positive encouragement), and facilitation (e.g., transportation; Taylor, Baranowski, & Sallis, 1994). There is little research regarding

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the mechanisms through which parent PA support facilitates PA among CYD in particular. However, among children and youth without disabilities, parent PA support has been shown to influence children's self-efficacy (Troost et al., 2003), and enjoyment of PA (Power & Woolger, 1994). Parent PA support is particularly important in facilitating PA for CYD (An & Goodwin, 2007; Law, Petrenchik, King, & Hurley, 2007) and is a key correlate of PA among CYD (Kowalchuk & Crompton, 2009).

Many parents of CYD face challenges in providing PA support regardless of the type or severity of their child's disability (Wiar, Darrah, Kelly, & Legg, 2015). Some of these challenges include issues around program quality and accessibility, financial limitations, parents' time, and concerns regarding safety (Jeong, Kim, & Lee, 2015). Considering the challenges parents face in providing PA support, it has been suggested that parent PA support should be considered a behavior unto itself that warrants intervention (Rhodes et al., 2016). Indeed, it has been recommended that interventions aimed at increasing child PA participation should target parent PA support (Rhodes & Yao, 2015; Trost et al., 2003). Given the important role parents play in supporting PA among CYD (Kowalchuk & Crompton, 2009), there is great value in the development of interventions to enhance parent PA support within this population. As such, this study examines the effectiveness of an intervention to increase parent PA support among CYD.

Interventions in the PA domain are more effective if they are developed based on a theory of behavior change (Glanz, Rimer, & Viswanath, 2008). An adapted theory of planned behavior (TPB; Ajzen, 1991; Rhodes et al., 2013) has been used to examine parent PA support. The TPB suggests that an individual's intention (i.e., perceived likelihood of performing a behavior), is the primary determinant of any given behavior (Ajzen, 1991). Intention to perform a behavior is influenced by an individual's attitude (i.e., positive or negative evaluation of the behavior), subjective norm (i.e., perceived social pressure toward performing the behavior), and perceived behavioral control (PBC; i.e., perceived personal control over the behavior; Ajzen, 1991). Intentions have been shown to be the strongest predictor of parent PA support among parents of children and youth without disabilities (e.g., Rhodes et al., 2013) and parents of CYD (Jeong et al., 2015). Although this work has been useful in understanding parent PA support, the use of the TPB has been scrutinized for its inability to address the robust discordance between intentions and behavior (Conner & Norman, 2005). For example, over half of mothers of children and youth without disabilities with strong intentions to provide parent PA support failed to carry out these intentions (Rhodes et al., 2016). Likewise, an intention-behavior gap was present among parents of CYD who had strong intentions to provide parent PA support (Jeong et al., 2015). There may be value in research that targets post-intentional factors to facilitate parents' intentions into PA support behavior.

Within the PA domain, action control models extend traditional models of intention by focusing on the translation of positive intentions into behavior (Rhodes & Pfaeffli, 2010; Sniehotta, 2009). The multi-process action control model (M-PAC; Rhodes & Yao, 2015; Rhodes, 2016) is one such model that has recently been applied within parent PA support research (Rhodes et al., 2016). While the M-PAC emphasizes the role of TPB variables such as attitude, PBC, and intention as key predictors of behavior within the PA domain (Rhodes & Nigg, 2011; Rhodes et al., 2013), it extends from the TPB to include post-intentional, volitional constructs such as behavioral regulation (e.g., action planning, coping planning, self-monitoring) during the adoption of a new behavior, and the development of habit and identity as a behavior continues with regularity (Rhodes & Yao, 2015; Rhodes & de Bruijn, 2013; Rhodes et al., 2016).

Previous research employing the M-PAC has highlighted the importance of behavioral regulation skills for parent PA support (Rhodes et al., 2016). Similar to most action control models, the M-PAC posits that the formation of an intention can prompt the use of behavioral regulation strategies such as action and coping planning, and self-monitoring (i.e., 'action control'; Rhodes & Yao, 2015; Rhodes & Nigg, 2011) which represents the strongest tactic to enact behavior change within the PA domain (Conn, Hafdahl, & Mehr, 2011; Rhodes & Pfaeffli, 2010). Action planning involves identifying an appropriate plan detailing where, when and how to engage in a particular behavior (Hagger & Luszczynska, 2014), while coping planning maximizes the likelihood of behavior by considering possible challenges and creating a plan to overcome these interruptions (Schwarzer, 2008; Sniehotta, 2009). Self-monitoring involves observing and evaluating the success of executing a plan to carrying out a specific behavior (Carver & Scheier, 1982; Carver, 2004). These regulatory behaviors are thought to be critical within the M-PAC until one develops more reflective means of action control such as habit and identity (Rhodes & Nigg, 2011; Rhodes & Yao, 2015). It seems as though behavioral regulation skills are the key to behavior enactment and therefore it is important to explore the impact of planning interventions on behavioral regulation of PA support behaviors.

Planning has been extensively examined as a behavioral regulation strategy in the PA domain (Carraro & Gaudreau, 2013). It has been argued that action planning specifically facilitates the initiation of an action by exerting its influence early in the behavior change process and therefore has been argued to precede coping planning and self-monitoring (Sniehotta, 2009; Sniehotta, Scholz, & Schwarzer, 2005). Thus, action planning, coping planning and self-monitoring may be particularly effective behavioral regulation strategies to further explore for parent support PA behavior of CYD.

There is limited research examining the use of planning to enhance parent PA support behavior. One study found that a PA planning intervention was effective for enhancing parent PA support among motivated parents of children and youth without disabilities (Rhodes, Naylor, & McKay, 2010). Action planning was also found to be an effective intervention to enhance parent PA support for child sunscreen use among highly motivated parents (Van Osch et al., 2009). Together, these studies support the concept of planning as a possible tool to facilitate parent PA support behavior. However, there is no known research to examine the effectiveness of planning to facilitate parent PA support among parents of CYD.

Although planning holds promise for facilitating parent PA support (e.g., Rhodes et al., 2013), additional support for parents may be required to enact planning as many individuals require feedback and guidance to engage in effective planning (e.g., Mistry, Sweet, Rhodes, & Latimer-Cheung, 2015b). It has been suggested that interactive planning interventions (i.e., support) may be effective in prompting planning behavior (Mistry et al., 2015b). Telephone support for planning has been suggested as one strategy to enhance the effectiveness of planning (Evers, Klusmann, Ziegelmann, Schwarzer, & Heuser, 2012), and has shown effectiveness within the PA domain. The aid of an interventionist can result in greater planning behavior and the development of more effective plans compared to those developed by the individual alone (Kwasnicka, Penseau, White, & Sniehotta, 2013). There is no known research examining the role of telephone-assisted planning to facilitating parent PA support in general or among parents of CYD.

Guided by an adapted TPB (Rhodes et al., 2016) and the M-PAC (Rhodes & Yao, 2015; Rhodes, 2016), preliminary analyses explored the relationship between TPB and M-PAC constructs and parent PA support behavior. The main purpose of this study was to examine a telephone-assisted planning intervention for promoting parent PA

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