

Correlates of Healthy Lifestyle Beliefs and Behaviors in Parents of Overweight or Obese Preschool Children Before and After a Cognitive Behavioral Therapy Intervention With Text Messaging

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ABSTRACT

Introduction: Significant gaps exist in the published literature regarding the treatment of overweight/obesity in

preschool-aged children, especially in primary care settings. Parental influence plays an important factor in the development of healthy behaviors in children, yet there is

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Conflicts of interest: None to report.

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no consensus about why some behavior change intervention strategies for parents of young children are more influential and effective than others.

Objective: The purpose of this secondary data analysis was to assess correlations among the study variables (healthy lifestyle beliefs, perceived difficulty, and healthy lifestyle behaviors) in parents of overweight/obese preschool children. A second aim explored if the parent's level of cognitive beliefs and perceived difficulty of engaging in healthy lifestyle behaviors correlated with text messaging cognitive behavioral support.

Methods: Fifteen preschool-parent dyads from primary care clinics completed a 7-week cognitive behavioral skills building intervention. Beck's Cognitive Theory guided the intervention content, and Fogg's Behavior Model guided the implementation. The intervention was delivered using a combination of face-to-face clinic visits and ecological momentary interventions using text messaging.

Results: Supported are the interconnected relationships among the study variables, that is, parental healthy lifestyle beliefs, thoughts, and behaviors. At baseline, parental healthy lifestyle belief scores significantly correlated with perceived difficulty ($r_s = 0.598, p < .05$) and healthy lifestyle behaviors ($r_s = 0.545, p < .05$). These associations strengthened after the intervention. Furthermore, as parental healthy lifestyle beliefs increased and perceived difficulty lessened, their response rate and subsequent feedback lessened to the static text messaging support.

Discussion: Findings from this study support the interconnections between parents' thoughts, feelings, and actions toward healthy lifestyles. As parental beliefs became stronger through cognitive behavioral skills building and tailored text messaging, the need for general support via text messaging lessened, warranting additional research. *J Pediatr Health Care.* (2016) *30*, 252-260.

KEY WORDS

Health behavior, text messaging, mobile, SMS, cognitive behavioral therapy, primary care

American society has become obesogenic, characterized by environments that promote increased food intake, intake of foods that are not healthy, and physical inactivity (Sherry, Blanck, Galuska, Pan, & Dietz, 2010). The rate of childhood obesity and associated chronic illnesses remains high, with approximately one in three children now overweight or obese (OW/OB; Keane, Layte, Harrington, Kearney, & Perry, 2012). Research conducted during the past 20 years demonstrates a relationship between parental feeding practices and a child's risk for obesity (Birch & Fisher, 1998; Davidson & Birch, 2001; Thompson, 2010). Parental influences have been documented as crucial factors of dietary and physical activity patterns in children (Davidson & Birch, 2001; Davis, Befort, Steiger, Simpson, & Mijares, 2012; Doolen, Alpert, & Miller, 2009; Haire-Joshu et al., 2003; Satter, 2008). As such, parents are in a unique role to leverage behavior change in obese children (Faith et al., 2012).

Interventions targeted toward parents of young children are broadly categorized to include (a) general

parenting skills/behaviors; (b) diet/nutrition-related behaviors; and (c) physical activity/sedentary behaviors (Yavuz, Van Ijendoorn, Mesman, & Van der Veek, 2015). During the past three decades of research, core behavior change strategies targeted to parents of overweight children include self-monitoring, goal setting, stimulus control (structuring the home/environment), positive reinforcement, and self-efficacy (Faith et al., 2012). Findings from this body of research show that slowing accelerated weight gain combines high levels of parental involvement and interactive learning that targets physical and dietary change (Nixon et al., 2012).

Interventions using text messaging (short message service [SMS]) have been successful as reminders in disease management behaviors (e.g., medication adherence and blood glucose monitoring), and tailored, interactive, family-centered interventions could be supplemented with mobile technology to facilitate behavior change (Militello, Kelly, & Melnyk, 2012). Yet there is no consensus on why some behavior change intervention strategies are more influential and why some are more effective. Understanding the relationships among variables that may influence healthy lifestyle behaviors in parents would better guide behavior change interventions (Faith et al., 2012; Yavuz et al., 2015).

Significant gaps exist in the published literature regarding the treatment of OW/OB in preschool-aged children, especially in primary care settings. Despite prevalent obesity guidelines, parents (a) believe it is difficult to change habits and child preferences, (b) do not have adequate information to help them lead healthier lifestyles, and (c) lack accessibility to good food and money to access good food (Sonneville, Pelle, Taveras, Gillman, & Prosser, 2009). Studies are needed in primary care settings to determine the best ways for clinicians to communicate educational information, encourage skills related to eating habits and physical activity, and foster healthy lifestyle behaviors in children (Faith et al., 2012; Moyer et al., 2005).

Our initial research, which was a pilot intervention study conducted in a primary care setting (Militello, 2014), determined the feasibility, acceptability, and preliminary effects of the TEXT2COPE program with 15 parents of OW/OB preschool children. The TEXT2COPE intervention was a 7-week cognitive behavioral therapy (CBT)-based program delivered through face-to-face clinic visits and synergized with text messaging. Findings from this pilot study indicated that the intervention was feasible and acceptable. Further, parents' self-reported healthy lifestyle behavior choices for their family significantly increased from pre- to posttest, with medium positive effect sizes (ES) (ES 0.59, $p = .040$). Medium positive ES for the intervention also were found on parental healthy lifestyle beliefs (ES = 0.61; $p = .001$) and perceived difficulty (ES = 0.50; $p = .168$).

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