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Parental self-efficacy and parenting practices in parents of young children with and without disabilities in physical development

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ABSTRACT

PARENTAL SELF-EFFICACY AND PARENTING PRACTICES IN PARENTS OF YOUNG CHILDREN WITH AND WITHOUT DISABILITIES IN PHYSICAL DEVELOPMENT

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The purposes of this study were to a) measure parental self-efficacy and parenting practices of parents of young children between 2 to 7 years of age related to their physical development, b) examine the relationship between parental self-efficacy and/or parenting practices, and c) investigate sociodemographic factors related to parental self-efficacy and parenting practices. A total of 237 parents/caregivers were recruited throughout 27 states in the United States using both offline and online dissemination. The Preschool Parent Confidence Questionnaire (PPCQ) was used to measure parental self-efficacy. The modified-version of Parenting SOS was utilized to measure parenting practices of participants. Descriptive statistics were used to examine levels of parental self-efficacy and parenting practices. Pearson correlation coefficient was utilized to investigate the relationship between parental self-efficacy and parenting practices. To examine demographic factors related to parental self-efficacy and/or parenting practices, Pearson correlation coefficient was used in continuous variables, and one-way analysis of variance (ANOVA) was utilized in categorical variables. The results showed that

participants had moderate to high levels of parental self-efficacy and parenting practices. There were no differences regarding levels of parental self-efficacy and parenting practices between parents of children with and without disabilities. A significant moderate relationship was found between parental self-efficacy and parenting practices ($r = .495, p < .001$). No demographic factor was significantly related to parental self-efficacy or parenting practices in this current study ($p > .05$). In conclusion, parents of young children with and without disabilities had moderate to high levels of parental self-efficacy and parenting practices regarding physical development of their children. The moderate relationship between parental self-efficacy and parenting practices supports the theory of Bandura that self-efficacy can be a good predictor for change of human behavior.

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PARENTAL SELF-EFFICACY AND PARENTING PRACTICES IN PARENTS OF
YOUNG CHILDREN WITH AND WITHOUT DISABILITIES
IN PHYSICAL DEVELOPMENT

BY

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INTRODUCTION

Physical activity has an important role in the life of young children because participating early in life provides lifelong health benefits. Being physically active not only improves bone properties, motor skills, and cardiovascular function but also facilitates cognitive and emotional development (Timmons, Naylor, & Pfeiffer, 2007). Physical activity also acts as a beneficial factor to children with disabilities who may be delayed in areas of development (Favazza et al., 2013). Motor skill interventions assist children with intellectual disabilities in facilitating language and/or social skill development (Favazza et al., 2013). Therefore, on whole, physical activity in the early years can be positively related to future physical fitness levels (Vlahov, Baughurst, & Mwavita, 2014).

The perception is often that preschoolers are highly active, but current evidence suggests that this age group is not highly physically active during the preschool day (Pate, McIver, Dowda, Brown, & Addy, 2008). Most parents overestimate their children's physical activity levels (Corder, Crespo, van Sluijs, Lopez, & Elder, 2012). The National Association for Sport and Physical Education (NASPE) recommends that preschoolers, 3 to 5 years of age, should participate in both structured and unstructured physical activity for at least 60 minutes every day. Moreover, they should not be sedentary for more than 60 minutes at a time. It is hard to objectively investigate how many preschoolers meet the guidelines since previous studies adopted different ways to measure levels of physical activity (Beets, Bornstein, Dowda, & Pate, 2011). Although it may be unclear how many preschoolers meet the guidelines, it remains

important that preschool-aged children engage in physical activity on a daily basis to improve their overall health.

Many factors can affect preschoolers' physical activity levels, but parents have a major influence on their preschool-aged children's physical activity. Parents can directly influence and shape their children's physical activity habits (Vaughn, Hales, & Ward, 2013; Zecevic, Tremblay, Lovsin, & Michel, 2010). Parents have the first opportunity to introduce and guide their children's movement skill development (Cools, De Martelaer, Samaey, & Andries, 2011) because they are the first influence to interact with and care for their children.

Edwardson and Gorely (2010b) found a positive relationship between parents and their children regarding physical activity. The authors reported that physically active parents tend to have physically active children (Edwardson & Gorely, 2010b). This is because parents act as role models for establishing activity habits in their children early in life (Mitchell et al., 2012). The more that parents support their children and participate in physical activity with them, the more likely their children are to engage in physical activity (Hinkley, Crawford, Salmon, Okely, & Hesketh, 2008; Zecevic et al., 2010). Encouragement, positive attitudes toward physical activity, involvement, and/or facilitation by parents can promote children's physical activity (Edwardson & Gorely, 2010b).

The relationship between parents and their children regarding physical activity decreases as children age (Alderman, Benham-Deal, & Jenkins, 2010). Children spend less time with their parents and spend more time with other social influences such as friends or teachers as they grow up (Alderman et al., 2010; Taylor et al., 2009). Establishing a positive relationship during the preschool years, when parents can have the most important influence on their young children to

build physical activity habits, is important to establish foundational building blocks for future health benefit.

Parental self-efficacy can be a good estimator of children's physical activity and motor development. Self-efficacy was defined by Bandura (1997) as "beliefs" in one's capabilities to organize and execute the courses of action required to produce given attainments. Parental self-efficacy is parents' perceived ability to exert positive influence on their children's behavior and development (Coleman & Karraker, 1997). Parental self-efficacy appears to be an essential component for parents to succeed in nurturing their children to be healthy adults (Gerards, Hummel, Dagnelie, De Vries, & Kremers, 2013). High parental self-efficacy is strongly related to the ability to encourage a positive childrearing environment, and it is associated with increased parental involvement with preschool-aged children (Giallo, Treyvaud, Cooklin, & Wade, 2013). On the one hand, parents with high parental self-efficacy tend to show effective parenting practices when they face challenging child behavior (Jones & Prinz, 2005). On the other hand, low parental self-efficacy can be a barrier for parents trying to change their children's behavior (Gerards et al., 2013). Parents with low parental self-efficacy may demonstrate frustration or hesitation regarding their performance, and this may negatively impact how their children view their own abilities (Jones & Prinz, 2005).

Parenting practices is another factor to be explored in order to understand children's participation in daily physical activity. Parenting practices is parents' direct involvement or behavior that can help their children to achieve their socialization goals (Darling & Steinberg, 1993). Parenting practices can either encourage or discourage children's physical activity levels (O'Connor et al., 2013).

There are many types of parenting practices. Role modeling, active support, or direct involvement can be types of parenting practices that encourage children's physical activity (Edwardson & Gorely, 2010a; Rhodes et al., 2013). On the other hand, letting children watch TV, insulting children, not taking children to physical activity facilities, or preventing children from being active can be negative parenting practices in the physical activity domain (O'Connor et al., 2013).

Parental self-efficacy and parenting practices can be good indicators of whether parents are sufficiently supporting their children's physical activity. Limited studies have examined parental self-efficacy and/or parenting practices solely focused on the domain of physical activity. Studies that did focus on the physical activity domain were initial studies to develop measurement instruments for parental self-efficacy and/or parenting practices in the physical activity domain. Coleman (2010) developed and then examined reliability and validity evidence of a parental self-efficacy instrument for parents of preschool-aged children ($N= 151$) at risk for developmental delay in the physical activity domain. Other research to develop instruments for parental self-efficacy, including the physical activity domain, did not solely focus on the physical activity domain. The physical activity domain was one part of their instrument while targeting general parental self-efficacy or parental self-efficacy for overall healthy diet or behavior of parents of children without disabilities (Bohman et al., 2014; Decker, 2012; Gerards et al., 2013).

Vaughn et al. (2013) developed a measurement tool for parenting practices in relation to the physical activity domain. The result of the study identified types of parenting practices (controlling parenting practices and supportive parenting practices) regarding physical activity by measuring 324 parents of children without disabilities between 2 to 5 years of age. Another

study measuring parenting practices of parents of children without disabilities included the physical activity domain as one part of a measurement instrument (Rebholz et al., 2014).

Little research exists to examine parental self-efficacy and/or parenting practices of parents of young children with and without disabilities under 7 years of age although the period is an important time to build early physical activity habits and appropriate development in their physical and psychological area. In a study by Emerson, Hatton, Llenwellyn, Blacker and Graham (2006), mothers of children under the age of 17 with intellectual disabilities reported lower levels of self-efficacy than mothers of children without intellectual disabilities. Moreover, one study indicated that parents of young people with intellectual disabilities between 15 to 26 years of age reported higher levels of stress than parents of young people without intellectual disabilities (Browne & Bramston, 1998). Sevigny and Loutzenhiser (2010) reported that higher stress seems negatively associated with parental self-efficacy. Therefore, it is likely that parents of children with disabilities have lower parental self-efficacy compared to parents of children without disabilities due to increased stress levels. No research has been conducted comparing levels of parenting practices of parents who have young children with and without disabilities when it comes to physical activity domain.

Moreover, inconsistency exists regarding what demographic factors are related to parental self-efficacy or parenting practices. For example, one study reported that parents' education level, income, and the body mass index (BMI) of the mother can be related to parental self-efficacy regarding healthy dietary habits and physical activity (Ekim, 2016). Simadi, Olimat and Momani (2009) only found an association between parent's education level and parental self-efficacy out of other demographic variables. Therefore, it is likely that the influence of demographic factors can vary according to environment or parenting domain (supporting,

disciplining, controlling, etc.). However, it is still important to investigate which demographic factors are related to parental self-efficacy and parenting practices in a certain environment for a better understanding of parental self-efficacy and parenting practices.

It can be hypothesized that parents of young children (2 to 7 years of age) both with and without disabilities may have different levels of parental self-efficacy and parenting behaviors regarding the implementation of physical activities and encouraging their young children to be physically active. For parents, the existence of a disability in young children can act as a negative factor for parental self-efficacy or parenting practices (Browne & Bramston, 1998; Sevigny & Loutzenhiser, 2010). It is important to examine if a relationship between parental self-efficacy and parenting practices exists in the physical activity domain. In addition, investigating relationships between demographic factors and parental self-efficacy and/or parenting practices can provide information on whether levels of parental self-efficacy and parenting practices are affected by certain demographic factors. From these potential findings future research can begin to develop, implement, and evaluate the efficacy of intervention-based approaches to both enhance adaptive parental practices and child physical activity engagement.

Significance of the Study

Establishing physical activity habits and building good movement development at an early age is important for lifelong health. Parents are the first and the most important influence to encourage physical development for young children with and without disabilities. Parental self-efficacy and parenting practices can significantly affect young children's physical development.

Assessing current levels of parental self-efficacy and parenting practices can provide parents with information about their own confidence level and parenting behaviors to develop and establish appropriate intervention strategies to promote motor skill development of their young children with and without disabilities. It is also important to find what demographic factors are significantly related to parents' current parental self-efficacy and parenting practices. Inconsistent results were described in previous research investigating what demographic factors have influence on parental self-efficacy and/or parenting practices. Some demographic factors indicated to have impacts on parental self-efficacy or parenting practices in one study were shown to have no influence on other studies. But it is still necessary to examine which demographic factors are significantly related to parental self-efficacy and parenting practices regarding physical development in order to find situational and cultural influence.

This study was unique because there has been no study examining both parental self-efficacy and parenting practices at the same time solely with the domain of physical development. In addition, the current study also targeted parents of young children with and without disabilities. Other studies assessing parental self-efficacy and/or parenting practices regarding the physical development of children were conducted with parents of children without disabilities or parents of children who were in a different age span.

Purpose of the Study

The purpose of this study was to examine, in the domain of physical development, parental self-efficacy and parenting practice(s) of parents who have young children (2-7 years of

age) with and without disabilities. Moreover, this study also aimed to investigate which demographic factors are significantly related to parental self-efficacy and parenting practices.

Research Questions

- (a) How confident will parents who have young children (2-7 years of age), with and without disabilities, be regarding parental self-efficacy in the domain of physical development?
- (b) How competent will parents who have young children (2-7 years of age), with and without disabilities, be regarding parenting practices in the domain of physical development?
- (c) Will parental self-efficacy and parenting practices of parents who have young children (2-7 years of age), with and without disabilities, be significantly related to each other?
- (d) What demographic factors significantly relate to parental self-efficacy and parenting practices of parents who have young children (2-7 years of age) with and without disabilities?

METHODS

Participants

A total of 237 parents of young children with and without disabilities from 27 states in the United States completed the survey. Respondents consented to participate in the study by completing the survey. This research was approved by the Institutional Review Board (IRB) at Northern Illinois University (NIU). The majority of respondents were mothers (80.2%), married (79.7%), aged between 30 to 39 (64.6%), and Caucasian (62.9%); (see Table 1).

Instrument

The survey consisted of a cover letter and three sections of a questionnaire. The cover letter was attached into the front page of the survey. Demographic information, parental self-efficacy, and parenting practices made up the three sections of the questionnaire.

Cover letter. A cover letter was attached on the first page of the survey packet and developed to provide overall information to participants. The letter included the importance of the study, purpose of the study, composition of the survey, right to withdraw at any time, and the contact information of investigators. The letter also informed participants that they have consented to participate in the study by completing the survey.

Table 1
Demographic Characteristics (N = 237)

Age of child (M = 4.4, SD = 1.48)								
	2years	3years	4years	5years	6years	7years	Missing	
<i>n</i>	22	41	63	39	28	25	19	
%	9.3	17.3	26.6	16.5	11.8	10.5	8.0	
Existence of disability								
	Yes	No	At risk for DD*	Missing				
<i>n</i>	80	114	37	6				
%	33.8	48.1	15.6	2.5				
Other child(ren)								
	No	1 Child	2 Children	More than 3	Missing			
<i>n</i>	51	98	50	35	3			
%	21.5	41.4	21.1	14.8	1.3			
Role of parents								
	Mother	Father	Other	Missing				
<i>n</i>	190	41	4	2				
%	80.2	17.3	1.7	0.8				
Respondent's age								
	< 20	20 to 29	30 to 39	40 to 49	50 to 59	60 <	Missing	
<i>n</i>	1	46	153	32	0	3	2	
%	0.4	19.4	64.6	13.5	0	1.3	0.8	
Marital status								
	Single	Married	Separated	Divorced	Living with partner	Other	Missing	
<i>n</i>	23	189	4	5	12	2	2	
%	9.7	79.7	1.7	2.1	5.1	0.8	0.8	
Education level								
	No schooling	Elementary	Middle school	High school	College (2years)	College (4years)	More than college level	Missing
<i>n</i>	1	2	1	37	58	78	54	6
%	0.4	0.8	0.4	15.6	24.5	32.9	22.8	2.5
Race								
	African- American	Asian	Caucasian	Hispanic or Latino	Native American	Multi- Racial	Other	Missing
<i>n</i>	13	40	149	23	0	5	1	6
%	5.4	16.9	62.9	9.7	0	2.1	0.4	2.5
Current job								
	Self- employed	Full-time employed	Part-time employed	Non- employed	Retired	Other	Missing	
<i>n</i>	30	73	39	60	4	27	4	
%	12.7	30.8	16.5	25.3	1.7	11.4	1.7	
Income								
	Less than \$20K	\$20K to \$35K	\$35K to \$49K	\$50K to 75K	\$75K to \$100K	More than \$100K	Missing	
<i>n</i>	23	29	35	50	43	43	14	
%	9.7	12.2	14.8	21.1	18.1	18.1	5.9	

(Continued on following page)

Table 1 (continued)

	Mean	SD	Minimum	Maximum	Missing (<i>n</i>)	
Child BMI	18.23	6.10	11.11	61.02	62	
Parent BMI	27.19	7.72	16.95	65.84	33	
Living state						
	Illinois	New York	Oregon	California	etc.	missing
<i>n</i>	150	18	10	9	49	1
%	63.29	7.59	4.21	3.79	20.68	0.42

Note. DD* = developmental delay.

Demographic information. A total of 14 questions were included in the demographic section. The questions were: (a) age of child, (b) existence of disability of their child, (c) number of other child(ren), (d) family role of respondent, (e) age of respondent, (f) marital status of respondent, (g) weight and height of child, (h) weight and height of respondent, (i) education level of respondent, (j) race, (k) current job, (l) annual income, (m) participation in Special Olympics Young Athletes program, and (n) living state. The questions were synthesized from the survey developed by Coleman (2010), Rebholz et al. (2014), and Vaughn et al. (2013). Two experts in adapted physical education added questions to gather extra information.

Parental self-efficacy. The Preschool Parent Confidence Questionnaire (PPCQ) (Coleman, 2010) was used to measure the self-efficacy level of participants. The survey consists of 17 items measuring perceived ability of parents with regards to promoting healthy physical activity habits. The survey used a Likert scale from 0 (not confident at all) to 10 (totally confident). The result of the exploratory factor analysis (EFA) conducted by Coleman showed that the survey items were grouped into three factors, which are (a) structured opportunity/time and/or structured physical activities/games and your preschool-aged child(ren), (b) unstructured physical activities/game and your preschool-aged child(ren), and (c) utilizing toys/objects to keep your preschool-aged child(ren) active (Coleman, 2010). Coleman also conducted a

Cronbach's alpha to test internal consistency reliability. The alpha value of the full items was .92; the first factor was .90; the second factor was .80; and the third factor was .78 when the tool was given to a total of 151 parents of preschool-aged children. The author set the cutoff value of acceptable reliability as .70 based on the suggestion of Haynes, Richard, and Kubany (1995). All values of the Cronbach's alpha showed over .70 of alpha values per each factor.

Parenting practices. A modified version of Parenting SOS (Vaughn et al., 2013) was used to measure levels of parenting practices of participants. Among 83 items in the original survey, 41 items related to "supportive parenting practices" were adopted in the survey because the investigator and his advisors considered those items to be related to the purpose of the study. The items in supportive parenting practices were included into nine factors, which are (a) explicit modeling and enjoyment of physical activity, (b) verbal encouragement of physical activity, (c) logistic support for sports, (d) logistic support for active play, (e) importance and value of physical activity, (f) support/reinforcement from other adults, (g) exposure to TV, (h) explicit modeling and enjoyment of screen time, and (i) child preference to physical activity. The factor related to support/reinforcement from other adults was excluded in the survey because the items were irrelevant to the purpose of the study. Construct validity evidence and internal consistency reliability of the instrument were examined from 324 parents who had children 2 to 5 years of age. The Cronbach's alpha for factors was conducted by Vaughn et al. (2013) and ranged from 0.66 to 0.88.

Procedure

The survey was disseminated in both English and Spanish versions. A mixed method was utilized to distribute the survey. An offline dissemination was conducted in the Northern Illinois region, one state university in the state of Oregon, and one local preschool in New York State. Sites where the survey packets were distributed were selected by the recommendation of advisors. Originally, a total of four universities that either have community-based adapted physical activity programs or have a connection with local preschools were contacted for the study. Three universities agreed to participate in the study. An online distribution was used to access other states in the United States. No assent was needed because the target participants were over 18 years of age.

Translation. The survey was originally developed in English. Then the survey was translated into Spanish. The first translation process was conducted using the Google translate service. The survey was typed into the Google translate service verbatim. After the translation, a student in the exercise science major at NIU who can speak and write both Spanish and English reviewed the translated survey and advised changes for smooth readability. Then the survey was brought to a director of the Latino Resources Center at NIU, who speaks and writes both Spanish and English at a native level, to get more detailed feedback. After three steps of translation, the Spanish version of the survey was read by a woman who speaks Spanish as a first language and has children of a similar age as a pilot test to check readability and understandability for potential participants.

Survey dissemination. After the IRB approval, the survey was distributed using the mixed method including the offline and the online dissemination. Participation in the survey was

voluntary with no compensation. For the offline dissemination, the investigator had requested a local preschool and an elementary school in the Northern Illinois region to participate in the survey. Directors/principals of schools were asked to disseminate the survey to parents of students. Both English and Spanish versions of the survey were distributed in the schools. The survey distribution began in October 2016, and the survey retrieval was finished in early December 2016. In addition, two local libraries and three churches were asked to promote participation in the survey for potential participants. The investigator retrieved responses on the spot during the library dissemination and a week after for church dissemination. One university located in the state of Oregon and one local preschool in the state of New York sent the hard-copy responses through mail after the investigator was requested to send the survey file through email. A total of 145 responses were retrieved via the offline dissemination.

The online version of the survey was developed using Qualtrics, which is the online survey company providing survey development tools. Both English and Spanish versions of the survey were developed for the online distribution. The online version consisted of the same content as the hard copy version of the survey (cover letter, demographic information, parental self-efficacy, and parenting practices). The survey link was sent with a brief explanation to several universities in the United States that have a physical activity clinical program for children with disabilities. The survey was also posted on the Facebook page named “Mommies United.” One participant of the survey recommended posting the survey on the Facebook page because the page is for mothers of children in the United States. The investigator used the Qualtrics respondent purchasing service to collect more responses. A total of 50 responses were purchased through the service. Responses from the online dissemination were automatically saved, stored

and downloaded directly into the investigator's laptop. A total of 92 responses (including the purchasing service) were collected.

Data Imputation

There were some missing values (5.9% to 8% on each questionnaire item of parental self-efficacy and 5% to 9.7% on each questionnaire item of parenting practices) for data. Since the missing values were considered as "missing completely at random" (MCAR), the researcher used a hot deck imputation. The hot deck imputation is a method to replace missing values of a non-respondent with observed values from other respondents who have similar characteristics to the non-respondent (Andridge & Little, 2010). Imputation with reasonable values makes sure all information can be used and broadens available analyses (Joenssen & Bankhofer, 2012). The hot deck imputation uses real values and gives good inferences for both linear and non-linear statistics when appropriately utilized (Andridge & Little, 2010), although it requires good matches of donors that reflect available covariate information. The hot deck imputation method needs a large sample to find good matches (Andridge & Little, 2010). Over 200 responses can be a large sample when considering characteristics of the survey used for this study.

Data Analysis

The SPSS version 23.0 was used to analyze data gathered from survey responses. Descriptive statistics were used to examine characteristics of participants, levels of parental self-efficacy, and levels of parenting practices. Pearson correlation coefficients were used (a) to

examine relationship between parental self-efficacy and parenting practices and (b) to identify important demographic factors that were related to parental self-efficacy and/or parenting practices. The total score of parental self-efficacy and the total score of parenting practices were compared to determine overall relationship. For further analysis, each factor in parental self-efficacy (3 factors) and parenting practices (8 factors) were compared. Among demographic information, child age, child BMI, and parent BMI were included as variables because these variables were continuous or ordinal variables.

One-way ANOVAs were used to investigate group differences of participants using total scores of parental self-efficacy or parenting practices. Before conducting one-way ANOVAs, the researcher re-categorized responses of existence of disability, level of education, job status, race, and income variables in demographic information to meet similar numbers for each group without violating the original meaning of answers. Existence of disability (with disability and without disability), number of other children (none, 1, 2, and more than 3), level of education (low education and high education), job status (employed and non-employed), race (Caucasian and non-Caucasian), and income (low income, medium income, and high income) were included as factors in each one-way ANOVA. Parental role, respondent's age, and marital status were excluded from factors due to significantly skewed distribution. For further analysis, one-way ANOVAs were conducted for each factor of parental self-efficacy (3 factors) and parenting practices (8 factors) to investigate in-depth differences.

RESULTS

Levels of Parental Self-Efficacy and Parenting Practices

The mean score of parental self-efficacy was 7.71 out of 10 ($SD = 1.59$). The mean total score of parenting practices was 95.29 out of 125 ($SD = 13.54$).

Relationship Between Parental Self-Efficacy and Parenting Practices

There was a statistically significant correlation between total scores of parental self-efficacy and parenting practices, $r = .495, p < .001$. Further analysis was made to examine correlations among each factor of parental self-efficacy and parenting practices. Table 2 shows correlations among each factor of parental self-efficacy and parenting practices

Table 2
Correlations Between Each Factor of Parental Self-Efficacy and Parenting Practices

	PP TOTAL	PP1	PP2	PP3	PP4	PP5	PP6	PP7	PP8
PPCQ TOTAL	.495**	.433**	.227**	.122	.282**	.346**	-.099	-.036	.279**
PPCQ 1	.514**	.465**	.252**	.129	.282**	.330**	-.112	-.034	.267**
PPCQ 2	.320**	.251**	.125	.074	.173**	.288**	-.068	-.034	.237**
PPCQ 3	.431**	.356**	.166*	.102	.289**	.331**	-.055	-.031	.258**

* $p < .05$, ** $p < .001$

Note. PPCQ TOTAL = total score of the parental self-efficacy; PP TOTAL = total score of parenting practices; PPCQ1 = structured opportunity/time and/or structured physical activities/games; PPCQ2 = unstructured physical activities/games; PPCQ3 = utilizing toys/objects to keep preschool-aged child(ren) active; PP1 = explicit modeling and enjoyment of physical activity; PP2 = verbal encouragement for physical activity; PP3 = logistic support for sports; PP4 = logistic support for active play; PP5 = importance and value of physical activity; PP6 = exposure to TV; PP7 = explicit modeling and enjoyment of screen time; and PP8 = child preference to physical activity.

Demographic Factors Related to Parental Self-Efficacy and Parenting Practices

There were no statistically significant relationships between child age, child BMI, or parent BMI and total scores of parental self-efficacy and the total score of parenting practices. Statistically significant but low correlations were found when the demographic variables were compared to each factor of parental self-efficacy and parenting practices (see Table 3).

Table 3
Correlations Between Child age, Child BMI, Parent BMI, and Parental Self-Efficacy and Parenting Practices

	PPCQ TOTAL	PP TOTAL	PPCQ1	PPCQ2	PPCQ3	PP1	PP2	PP3	PP4	PP5	PP6	PP7	PP8
Child age	-.026	-.030	-.020	-.022	-.038	.030	.172*	.060	-.137*	-.048	-.051	-.120	-.234*
Child BMI	-.065	.065	-.053	-.051	-.093	.162*	.090	.138	.087	.060	.286**	.287**	-.278**
Parent BMI	-.067	-.089	-.081	-.030	-.035	-.219**	.127	.092	-.079	-.013	.143*	.179*	-.119

* $p < .05$, ** $p < .001$

Note. PP TOTAL = total score of parenting practices; PP1 = explicit modeling and enjoyment of physical activity; PP2 = verbal encouragement for physical activity; PP3 = logistic support for sports; PP4 = logistic support for active play; PP5 = importance and value of physical activity; PP6 = exposure to TV; PP7 = explicit modeling and enjoyment of screen time; PP8 = child preference to physical activity; PPCQ TOTAL = total score of parental self-efficacy; PPCQ1 = structured opportunity/time and/or structured physical activities/games; PPCQ2 = unstructured physical activities/games; and PPCQ3 = utilizing toys/objects to keep preschool-aged children active.

The results of one-way ANOVAs comparing demographic information with the total score of parental self-efficacy and parenting practices showed that there were no significant group differences when the groups were divided into categories based on existence of disability, number of other child(ren), education level, race, job, or income (see Table 4)

Table 4
One-way ANOVA Summary for Demographic Variables When Compared by Total Score of Parental Self-Efficacy and Parenting Practices

Existence of disability						
Source	SS	df	MS	F	η^2	p
Dependent variable: PPCQ TOTAL						
Between groups	1791.065	1	1791.065	2.515	.011	.114
Within groups	163093.870	229	712.200			
Total	164884.935	230				
Dependent variable: PP TOTAL						
Between groups	54.767	1	54.767	.297	.001	.586
Within groups	42171.623	229	184.156			
Total	42226.390	230				
Number of other child(ren)						
Source	SS	df	MS	F	η^2	p
Dependent variable: PPCQ TOTAL						
Between groups	4292.134	3	1430.711	2.000	.025	.115
Within groups	164510.259	230	715.262			
Total	168802.393	233				
Dependent variable: PP TOTAL						
Between groups	285.962	3	95.321	.516	.007	.672
Within groups	42526.264	230	184.897			
Total	42812.226	233				
Education level						
Source	SS	df	MS	F	η^2	p
Dependent variable: PPCQ TOTAL						
Between groups	811.688	1	811.688	1.119	.005	.291
Within groups	166160.909	229	725.593			
Total	166972.597	230				
Dependent variable: PP TOTAL						
Between groups	24.013	1	24.013	.129	.001	.720
Within groups	42701.727	229	186.470			
Total	42725.740	230				
Race						
Source	SS	df	MS	F	η^2	p
Dependent variable: PPCQ TOTAL						
Between groups	1591.511	1	1591.511	2.224	.010	.137
Within groups	163867.562	229	715.579			
Total	165459.074	230				
Dependent variable: PP TOTAL						
Between groups	32.620	1	32.620	.178	.001	.673
Within groups	41856.558	229	182.780			
Total	41889.177	230				
Job						
Source	SS	df	MS	F	η^2	p
Dependent variable: PPCQ TOTAL						
Between groups	2421.972	1	2421.972	3.388	.014	.067
Within groups	165111.633	231	714.769			
Total	167533.605	232				
Dependent variable: PP TOTAL						
Between groups	521.472	1	521.472	2.852	.012	.093
Within groups	42234.966	231	182.835			
Total	42756.438	232				

(Continued on following page)

Table 4 (Continued)

	Income					
Source	SS	<i>df</i>	MS	<i>F</i>	η^2	<i>p</i>
Dependent variable: PPCQ TOTAL						
Between groups	1159.744	2	579.872	.801	.007	.450
Within groups	159177.978	220	723.536			
Total	160337.722	222				
Dependent variable: PP TOTAL						
Between groups	968.876	2	484.438	2.615	.023	.075
Within groups	40753.725	220	185.244			
Total	41722.601	222				

Note. PPCQ TOTAL = total score or parental self-efficacy; and PP TOTAL = total score of parenting practices.

DISCUSSION

The purposes of this study were to a) measure levels of parental self-efficacy and parenting practices of parents of young children (2 to 7 years of age) with and without disabilities regarding physical development, b) examine a relationship between parental self-efficacy and parenting practices, and c) investigate demographic factors related to parental self-efficacy and/or parenting practices.

The participants in this study had moderate to high levels of parental self-efficacy and parenting practices. To date there has been no research to examine self-efficacy level or parenting practices related to physical development for parents who have children with disabilities. Regarding parental self-efficacy and parenting practices of parents who have children without disabilities, similar results to the current study were reported in previous studies. Coleman (2010) examined parental self-efficacy for parents of preschool-aged children (2.5-6 years of age) at risk for developmental delay in physical development and reported the comparable score, $M = 7.34$ to 8.78 out of 10 points, across questionnaire ($SD = 1.93$ to 2.86). In another study by Bohman, Nyberg, Sundblom, and Elinder (2014), parental self-efficacy related to healthy dietary and physical activity behavior of mothers of 6-year-old children without disabilities was examined. The participants reported mean scores from 7.61 to 8.96 out of 10 points ($SD = 1.32$ to 1.98) across survey items. In 2012, Decker examined parental self-efficacy of parents of 6- to 11-year-old children without disabilities related to their children's physical activity behaviors. The mean scores were from 7.58 to 8.51 out of 10 points ($SD = 2.06$ to 2.6).

Several studies showed above-average levels of parenting practices related to physical development. Vaughn et al. (2013) found moderate to high levels of parenting practices ($M = 2.26$ to 4.67 , $SD = 0.53$ to 1.15) in parents of 2- to 5-year-old children without disabilities. In the study by Trost, Sirard, Dowda, Pfeiffer, and Pate (2003), parents of 3- to 5-year-old children without disabilities reported mean scores from 3.5 to 3.7 out of 5 for their parenting practices regarding parental modeling and support for physical activity. Edwardson and Gorely (2010a) also found above-average levels of parenting practices (2.87 to 3.07 out of 4) related to modeling and support for physical activity and limiting sedentary behavior in parents of 7- to 10-year-old children without disabilities. The results of this current study and previous studies support that parents who have young children without disabilities under 10 years of age had moderate to high levels of parental self-efficacy and parenting practices regarding physical development. This evidence suggests that parents of young children may have adequate levels of confidence and competence regarding parenting quality in the area of physical development for their children.

The current study found that there was no significant difference in levels of parental self-efficacy and parenting practices between parents of children with and without disabilities. To our knowledge, there has been no previous study comparing parental self-efficacy and parenting practice between parents of children with and without disabilities regarding physical development. Previous studies reported lower levels of parental self-efficacy or parenting practices of parents of children with disabilities in various domains. Sanders and Wolke (2005) reported that mothers of young children (4 to 8 years of age) with conduct problems showed significantly lower levels of parental self-efficacy ($p < .001$) that was related to dealing with difficult behavior of children compared to parents of young children without conduct problems. Giallo, Wood, Jellett, and Porter (2013) found that mothers of children with autism spectrum

disorder (2 to 5 years of age) reported higher levels of fatigue ($p = .02$) compared to mothers of children without disabilities. The authors also found that fatigue had a moderate negative relationship ($r = -.44, p < .001$) with levels of parental self-efficacy related to perceived knowledge, confidence, and competence in parenting. McLaughlin and Harrison (2006) reported that low parenting practices, in relation to disciplining, was directly related to the severity of behavior problem of children 4 to 12 years of age ($p < .01$) with attention deficit hyperactivity disorder. Results of the study by Goldstein, Harvey, and Friedman-Weieneth (2007) indicated that parents of preschool-aged children with hyperactivity (HYP) or hyperactive and oppositional defiant (HYP/OD) had more negative parenting practices related to dysfunctional parenting ($p < .01$) and higher parental stress ($p < .01$) compared to parents of preschool-aged children without HYP or HYP/OD.

The possible reason for different results in the current study from previous studies is that the current study focused on parental self-efficacy and parenting practices regarding physical development, which was more related to promoting or supporting healthy physical activity behaviors. Previous studies examined parental self-efficacy or parenting practices related to disciplining or controlling factors. This might have derived different results from parents of children with disabilities.

In this study, a moderate correlation was found between parental self-efficacy and parenting practices. This result is consistent with previous studies investigating the relationship between parental self-efficacy and parenting practices in different domains. In the study by Giallo, Treyvaud, Cooklin, and Wade (2013), parental self-efficacy was related to parents' involvement in various activities ($r = .27, p < .001$) with their young children without disabilities from 0 to 4 years of age. The other study examining the relationship between parental self-

efficacy and parenting practices of parents of adolescent children in relation to positive parenting showed that there was a positive relationship between each other ($r = .26, p < .01$); (Glatz, Cotter, & Buchanan, 2017). In the study of Dumka, Gonzales, Wheeler, and Millsap (2010), parental self-efficacy was related to parenting practices with regard to monitoring and disciplining in mothers of adolescent children ($r = .50, p < .05$).

A positive causal relationship between parental self-efficacy and parenting practices had been suggested by several researchers. According to the Bandura (1977), self-efficacy can be a good predictor for change of human behavior. The theory is also applied to health behavior (Conner & Norman, 2005). Jones and Prinz (2005) also reported that parental self-efficacy can be a strong predictor for parenting practices based on the review of previous studies examining parental self-efficacy. Based on the systematic review regarding parental self-efficacy on parenting quality, Coleman and Karraker (1997) suggested that high parental self-efficacy seems to be strongly related to parents' ability to encourage a healthy, nurturing environment for children.

In the further analysis of correlations among each factor of parental self-efficacy and parenting practices, factors of explicit modeling and enjoyment of physical activity and valuing physical activity in parenting practices were shown to have moderate relationships with parental self-efficacy. This implies that parents who have higher levels of perceived ability to provide physical activity opportunities to their children are more physically active themselves and understand the importance of physical activity for their children compared to parents with low parental self-efficacy. No study has examined the direct relationship between parents' physical activity level and their parental self-efficacy. Previous studies indicate the indirect relationship between parental self-efficacy and parents' physical activity. Studies investigating the

relationship between physical activity levels of parents and their children have found a positive relationship (Edwardson & Gorely, 2010b; Moore, Lombardi, White, Campbell, Oliveria, & Ellison, 1991). In addition, several studies suggested that active parents are more supportive and encouraging of their children to be active (Gustafson & Rhodes, 2006; Trost, Sallis, Pate, Freedson, Taylor, & Dowda, 2003; Welk, Wood, and Morss, 2003). Considering the positive relationship between parental self-efficacy and parenting practices, it is likely that parents who are physically active themselves have high parental self-efficacy.

No demographic factors were significantly related to parental self-efficacy or parenting practices in the current study. Previous studies indicated relationships between demographic factors and parental self-efficacy in different domains. In the study by Bandura, Barbaranelli, Caprara, and Pastorelli (2001), parents of children (11 to 15 years of age) in Italy indicated that socioeconomic status might be linked to parental self-efficacy related to promoting intellectual development of their children ($r = .15, p < .01$). Ekim (2016) indicated that income ($r = .73, p = .01$), education level ($r = .59, p = .01$), and BMI of mother ($r = -.55, p < .01$) were positively related to parental self-efficacy related to healthy dietary and physical activity in parents of preschool-aged children (3 to 6 years of age) in Turkey.

Other studies found relationships between demographic factors and parenting practices in various domains. In the study by Tschann et al. (2013), BMI of children was related to parenting practices regarding controlling food intake ($r = .34, p < .001$) of parents of children without disabilities from 8 to 10 years of age. Another study reported that higher maternal BMI was related to lower parenting practices with regard to feeding behavior of parents of 5- to 9-year-old children (OR= 1.70, $p = .003$); (Mais, Warkentin, Latorre, Carnell, & Taddei, 2017). In the systematic review by Spera (2005), socioeconomic status seemed to be related to parenting

practices, but there were inconsistent results whether ethnicity was related to parenting practices. The different result in the current study from previous studies indicates that demographic factors related to parental self-efficacy or parenting practices may vary depending on parenting domain and environmental factors.

In conclusion, parents of young children (2 to 7 years of age) with and without disabilities had moderate to high levels of parental self-efficacy and parenting practices regarding physical development. A significant moderate relationship between parental self-efficacy and parenting practices was found. No relationships between demographic factors and parental self-efficacy or parenting practices were found in the current study.

Limitations and Future Research

A few limitations were identified from the current study. First, there was a sampling issue. Some demographic factors collected from the participants were significantly lopsided. Most of participants were mothers, married, and between 30 to 39 years of age. A future study should be conducted with participants from various demographic environments. Second, there were some missing data. Answers of some survey items (i.e. weight, height, or a short subjective answer) showed higher rates of missing values (about 27% of total answer of each item). When using the computer assisted method, reminding respondents to complete all questions in order to move to the next section might be helpful for reducing missing values. A third limitation is that there was no way to identify origin of responses from the online survey. Answers from the online survey did not have any information about which website responses heard of the study and came through.

Future research is needed with parents of various sociodemographic statuses in order to figure out potential correlates with parental self-efficacy and parenting practices in the physical development domain. Investigating parents' educational background related to physical development can be a potential area to examine to determine how educational background or intervention strategies related to physical development affects parental self-efficacy and parenting practices. Last, examining direct relationships between parental self-efficacy and parenting practices and their young children's physical activity level is also recommended for future study. Early physical activity opportunity is crucial for lifelong health benefits of children with and without disabilities. Limited research is available in this area, especially for young children with disabilities.

Conclusion

The current study shows that parents of young children (2 to 7 years of age) had moderate to high levels of parental self-efficacy and parenting practices. It can be a foundational study for future research that examines relationship between parental self-efficacy and parenting practices and actual physical activity levels of young children. Moderate relationship between parental self-efficacy and parenting practices indicates that increasing parental self-efficacy can be followed by increase of parenting practices of parents regarding physical development.

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APPENDIX A

COVER LETTER: ENGLISH VERSION

Parental Self-efficacy and Parenting Practices of Parents of Young Children With and Without Disabilities

Thank you for participating in this study! The purpose of this survey is to measure *parental self-efficacy* (how confident are you in promoting and fostering your children to be active) and *parenting practices* (how competent are you in promoting and fostering your children to be active) of parents of children with and without disabilities in relation to the physical activity domain. In addition, *demographic information*, that doesn't require any confidential information, will be collected in order to measure the influence of background information. It will take 20-30 minutes to complete the survey.

Establishing physical activity habits and building good motor development at an early age is important for life long health benefits. Parents are the first and the most important influence to encourage physical development for young children with and without disabilities. Parental self-efficacy and parenting practices can significantly affect young children's physical development levels.

Assessing current levels of parental self-efficacy and parenting practices can provide parents information about their own confidence and knowledge to develop and establish appropriate intervention strategies to promote motor skill development of their young children. Also, examining the relationship of demographic information with parental self-efficacy and parenting practices can give information whether background information has an impact on parents' parental self-efficacy and parenting practices.

This survey consists of; a demographic information sheet; parental self-efficacy and parenting practices questions. You have consented (agree) to participate in this study by completing the survey. Your consent (agreement) doesn't mean you have given up your legal right to confidentiality. Participation in this survey is voluntary, and you can withdraw from this study at any time without any disadvantage. There is no direct benefit of participation in this study, but we can share the results of this study upon your request.

The survey doesn't require any personal identification information. A numbered code will be assigned to your returned survey in order to track the geographic origin of the survey. Information collected from the survey will be used for educational purposes only. Your personal information will not be revealed and will remain confidential.

If you have any question or need further information, please contact Myung Ha Sur (815-761-2399; z1742301@students.niu.edu) or his advisor Dr. Laurie L. Zittel (815-753-1425; lzape@niu.edu) or Dr. So-Yeun Kim (815-753-7152; soyeunkim@niu.edu). If you have any questions related to your rights as a research subject, you may contact the Office of Research Compliance at Northern Illinois University at 815-753-8588.

Thank you again for your time!

APPENDIX B

COVER LETTER: SPANISH VERSION

La auto-eficacia y las prácticas de crianza de los padres sin o con discapacidades.

Gracias por participar en este estudio! El propósito de este estudio es medir *la autoeficacia de los padres* (el grado de confianza que tienen en la promoción y en el fomento de las actividades en sus hijos) y *las prácticas de crianza* (lo competentes que son en la promoción y el fomento de las actividades en sus hijos) de los padres, cuyos hijos sin o con discapacidades, con relación al dominio de la actividad física. *Además*, la información *demográfica*, que no requiere ninguna información confidencial, será colectada con el fin de medir la influencia de la información a fondo. Le llevará de 20 a 30 minutos para completar la encuesta.

El establecimiento de los hábitos en la actividad física y la construcción de un buen desarrollo motor a una edad temprana es importante para la salud, además brinda beneficios a lo largo de la vida. Los padres son la primera influencia para fomentar el desarrollo físico de los niños jóvenes con y sin discapacidad. Prácticas de auto-eficacia y la crianza de los padres pueden afectar significativamente los niveles de desarrollo físico de los niños pequeños.

La evaluación de los niveles actuales de las prácticas de auto-eficacia y la crianza de los padres puede proveer a los padres información sobre su propia confianza y el conocimiento para desarrollar y establecer estrategias de intervención adecuadas para promover el desarrollo de habilidades motoras de los niños pequeños. Además, examinar la relación de la información demográfica con las prácticas de auto-eficacia y la crianza de los padres puede dar información y tener un impacto en las prácticas de auto-eficacia y la crianza de los padres.

Esta encuesta consta de; una sección de información demográfica; la auto-eficacia de los padres y preguntas sobre las prácticas de crianza. Usted puede dar su consentimiento (acuerdo) para participar en este estudio, completando la encuesta. Su consentimiento (acuerdo) no significa que haya renunciado a su derecho legal a la confidencialidad. La participación en esta encuesta es voluntaria y usted puede retirarse de este estudio en cualquier momento sin ninguna desventaja. No hay ningún beneficio directo de su participación en este estudio, pero podemos compartir los resultados de este estudio si usted lo requiere.

La encuesta no requiere ninguna información de identificación personal. La información recopilada de la encuesta será utilizada sólo con fines educativos. Su información personal no será revelada, y se mantendrá confidencial.

Si usted tiene cualquier pregunta o necesita más información, póngase en contacto con Myung ha Sur (815-761-2399; z1742301@students.niu.edu) o su asesor el Dr. Laurie L. Zittel (815-753-1425; lzape@niu.edu) o el Dr. So-Yeun Kim (815-753-7152; soyeunkim@niu.edu). Si usted tiene alguna pregunta relacionada con sus derechos como sujeto de investigación, puede comunicarse con la Oficina de Cumplimiento de Investigación de la Universidad del Norte de Illinois al 815-753-8588.

¡Gracias de nuevo por su tiempo!

APPENDIX C

DEMOGRAPHIC FORM: ENGLISH VERSION

This section is composed of questions regarding demographic information of respondents. Please select mark or fill out blank.

1. What is **your child(ren)**'s age?
 2 years 3 years 4 years 5 years 6 years 7 years
2. Does **your child(ren)** have a disability? If yes, please specify
 Yes (Please specify) _____ No
3. In addition to your young child, how many other **child(ren)** do you have?
 None 1 2 ≥ 3
4. The form is being completed by:
 Mother Father Other (Please identify) _____
5. What is **your** age?
 < 20 years 20-29 years 30-39 years 40-49 years 50-59 years ≥ 60 years
6. What is **your** marital status?
 Single Married Separated Divorced Living with partner
 Other (Please identify) _____
7. What is **your child's** weight & height?
Weight: _____ Height: _____
8. What is **your** weight & height?
Weight: _____ Height: _____
9. What is **your** highest level of education?
 No schooling at all Elementary school Middle school High school
 College (2 years) College (4 years) More than college level
10. What is **your** race?
 African American Hispanic or Latino Caucasian Asian
 Native American Multi-Racial Other (Please identify) _____
11. What is **your** current job?
 Self-employed Retired Non-employed Part-time employed
 Full-time employed Other (Please identify) _____
12. What is **your** annual household income?
 Less than \$20,000 \$20,000 to \$34,999 \$35,000 to \$49,999
 \$50,000 to \$74,999 \$75,000 to \$99,999 \$100,000 or more
13. Does your child participate in the Special Olympics Young Athletes program?
 Yes No
14. In what state do **you** live?

APPENDIX D

DEMOGRAPHIC FORM: SPANISH VERSION

Esta sección se compone de preguntas *relacionadas* con la información *demográfica* de los encuestados. Por favor, marque ó rellene el espacio en blanco.

1. ¿Cuál es la edad de su hijo/a (s)?
 2 años 3 años 4 años 5 años 6 años 7 años
2. ¿Su hijo/a tiene alguna discapacidad? En caso afirmativo, especifique
 Sí (Por favor especifique) _____ No
3. Además de su propio hijo/a, cuantos hijos mas tiene usted?
 Ninguna 1 2 Mayor que 3
4. El formulario es completado por:
 Madre Padre Otro (identificar) _____
5. ¿Cuál es su edad?
 menor de 20 años 20-29 años 30-39 años 40-49 años 50-59 años mayor o igual a 60 años
6. ¿Cuál es su estado civil?
 Soltero/a Casado/a Separado/a Divorciado/a Viviendo en pareja, pero no se ha casado
 Otro (identificar) _____
7. ¿Cuál es el peso y la altura de su hijo/a?
 Peso (lb): _____ Altura (in): _____
8. ¿Cuál es su peso y altura?
 Peso (lb): _____ Altura (in): _____
9. ¿Cuál es su nivel de educación?
 Sin escolarización Escuela primaria Escuela intermedia
 Escuela secundaria Colegio (2 años) Universidad (4 años) Más de nivel universitario
10. ¿Cuál es su raza?
 Afroamericano Hispano o latino Caucásico Asiático Nativo Americano Multirracial
 Otro (identificar) _____
11. ¿Cuál es su trabajo actual?
 Trabajadores por cuenta propia Retirado No empleados Empleado Empleada completo
 Otro (identificar) _____
12. ¿Cuál es su ingreso anual?
 Menos de \$ 20,000 \$20,000 a \$34,999 \$35,000 a \$49,999
 \$50,000 a \$74,999 \$75,000 a \$99,999 \$ 100,000 o más
13. ¿Usted recibe sugerencias para la realización de actividades físicas en el hogar de parte de los entrenadores del programa?
 Sí No
14. ¿En qué estado vive usted? _____

APPDNEIX E

SURVEY QUESTIONNAIRE: ENGLISH VERSION

23. Does your child see you doing, or going to do, something that is physically active? (for example, walking, biking, playing sports)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
24. Do you turn on the TV, a video, or movie for your child so you can get things done around the house?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
25. Do you try to get your child to be physically active instead of watching TV?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
26. Do you say things to encourage your child to spend less time being sedentary?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please fill the bubble that best represents *how important* each of the following this is to you

How important is it for your child...	unimportant	of little important	moderately important	important	very important
27. to participate in sports?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
28. to be physically active when (s)he grows up?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please select mark or fill out blank.

29. How much do **you** enjoy physical activities or sports?
 Don't enjoy Sort of enjoy Really enjoy Thoroughly enjoy
30. How much do **you** enjoy watching TV or movies during your free time?
 Don't enjoy Sort of enjoy Really enjoy Thoroughly enjoy
31. How often does **your family** use physical activities or sports as a form of family recreation? (for example, going on bike rides together, hiking, ice skating)
 Rarely Once in a while Relatively often Frequently
32. How often do **you** go to **your child's** sporting events, lessons, or other organized physical activities with them? (for example, watch your child perform in a dance recital, swim meets, or practice)
 Rarely Sometimes Usually Always almost
33. How valuable is it to **you** that **your child** be physically active?
 Not valuable Of little value Moderately valuable Valuable Very valuable
34. For how many activities have **you** or **other adults** paid fees?

35. How much do you use **your own behavior** to encourage **your child** to be physically active?
 I don't use my own behavior to encourage my child to be active.
 I rarely use my own behavior to encourage my child to be active.
 I often use my own behavior to encourage my child to be active.
 I constantly use my own behavior to encourage my child to be active.

36. How active are **you** in enrolling **your child** in sports?
- I rarely enroll my child in sports.
 - I enroll my child once in a while.
 - I frequently enroll my child in sports.
 - I go out of my way to enroll my child in sports.
37. During the last month, how many times have **you** taken **your child** to play at a park?
- _____
38. How often is the TV in **your house** on when people are at home?
- Very rarely
 - Rarely
 - Sometimes
 - Often
 - Very often
 - Always
39. How many **days per week** does your family have the television on during **breakfast**?
- 0
 - 1
 - 2
 - 3
 - 4
 - 5
 - 6
 - 7
40. How many **days per week** does your family have the television on during **the evening meal**?
- 0
 - 1
 - 2
 - 3
 - 4
 - 5
 - 6
 - 7
41. What does **your child** usually do when (s)he has a choice about how to spend free time?
- Almost always chooses activities like TV, reading, listening to music, or computers
 - Usually chooses activities like TV, reading, listening to music, or computers
 - Just as likely to choose TV and reading as active games or sports
 - Usually chooses activities like bicycling, dancing, outdoor games, or active sports
 - Almost always chooses activities like bicycling, dancing, outdoor games, or active sports

APPENDIX F

SURVEY QUESTIONNAIRE: SPANISH VERSION

Indicaciones:

Por favor conteste cada pregunta lo mejor que pueda. Ante cada pregunta, por favor de leer lo siguiente:

Cuando su hijo est á en casa con usted, ¿cuánta confianza tiene en su habilidad de hacer lo siguiente regularmente ?

indique su nivel de confianza para cada pregunta

	No estoy seguro	Más o menos seguro	Completamente seguro
1. organiza cualquier clase de juegos o actividades estructurados (organizados) (p.e., hokey pokey, tirar y recibir la pelota)	0	1 2 3 4 5 6 7 8 9 10	
2. anima a su hijo/hija a que haga juegos estructurados (organizados) intensos para que trabaje su cuerpo/actividades para que respire fuerte (p.e., correr; deportes (fútbol))	0	1 2 3 4 5 6 7 8 9 10	
3. elige juegos y actividades estructurados/organizados que sean apropiados para la edad y estatura de su hijo/hija	0	1 2 3 4 5 6 7 8 9 10	
4. organiza tiempo para que su hijo/hija participe en cualquier tipo de juego activo no estructurado/no organizado (juego libre) (p.e., jugar en patio de recreo; montar triciclo)	0	1 2 3 4 5 6 7 8 9 10	
5. anima a su hijo/hija a que haga juegos intensos no estructurados (no organizados) para que trabaje su cuerpo/actividades para que respire fuerte (p.e., correr afuera, saltar en trampolín)	0	1 2 3 4 5 6 7 8 9 10	
6. elige juegos y actividades no estructurados (no organizados) que sean apropiados para la edad y estatura de su hijo/hija	0	1 2 3 4 5 6 7 8 9 10	
7. limita el tiempo que su hijo/hija mira television o juega video juegos a no más de dos horas diarias	0	1 2 3 4 5 6 7 8 9 10	
8. anima a su hijo/hija a jugar con objetos como balón, pelotas o bates (p.e., rebotar el balón; batear la pelota; tirar la pelota)	0	1 2 3 4 5 6 7 8 9 10	
9. juega activamente junto con su hijo/hija todos los días (p.e., juega a la pilla-pilla; da un paseo; tirar la pelota)	0	1 2 3 4 5 6 7 8 9 10	
10. demuestra a su hijo/hija que usted, usted mismo, es físicamente activo todos los días (p.e., hace ejercicio; da un paseo; trota; corre)	0	1 2 3 4 5 6 7 8 9 10	
11. utiliza (usa) juguetes/objetos pequeños para mantener a su hijo/hija activo (p.e., pelotas, balones, bates)	0	1 2 3 4 5 6 7 8 9 10	
12. utiliza (usa) juguetes/objetos de tamaño medio para mantener a su hijo/hija activo (p.e., triciclo; scooter)	0	1 2 3 4 5 6 7 8 9 10	
13. utiliza (usa) juguetes/objetos grandes para mantener a su hijo/hija activo (p.e., columpios, trampolín)	0	1 2 3 4 5 6 7 8 9 10	
14. anima a su hijo/hija a que use una área segura dentro de la casa para ser físicamente activo	0	1 2 3 4 5 6 7 8 9 10	
15. anima a su hijo/hija a que use una área segura fuera de la casa para ser físicamente activo	0	1 2 3 4 5 6 7 8 9 10	
16. organiza oportunidades para que su hijo/hija use una área segura y conveniente dentro de un lugar público de la comunidad para ser físicamente activo (p.e., gimnasio; edificio de recreo; parques del distrito)	0	1 2 3 4 5 6 7 8 9 10	
17. organiza oportunidades para que su hijo/hija use una área afuera segura y conveniente en su comunidad para ser físicamente activo (p.e., parques; patio de recreo; acera; caminos de bicicleta)	0	1 2 3 4 5 6 7 8 9 10	

21. Usted transporta a su hijos/as a un lugar donde puedan hacer actividad física o hacer deporte?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
22. ¿Su hijo/a le escucha hablar acerca de participar en un deporte o la actividad física?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
23. ¿Su hijo/a lo/la ve haciendo o que va hacer actividad física? (Por ejemplo, caminar, andar en bicicleta, practicar deportes)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
24. ¿Le enciende el televisor, un vídeo o película a su hijo para que usted pueda terminar las cosas alrededor de la casa?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
25. ¿Trata de conseguir que su hijo/a sea activo físicamente en lugar de ver la televisión?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
26. ¿Usted dice cosas para animar a su hijo/a a dedicar menos tiempo a ser sedentario/a?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Por favor, rellene el círculo que represente mejor cada uno de las siguientes preguntas esto es para usted

Que tan importante es esto para su hijo/a ...	Sin importancia	De poca importancia	moderadamente importante	Importante	Muy importante
27. participar en el deporte?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
28. estar físicamente activo cuando (él ó ella) crezca?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

29. ¿Cuánto disfruta las actividades físicas o deportes?

- No disfruta Disfruta Póco Realmente lo disfruta Disfruta plenamente

30. ¿Cuánto disfruta ver la televisión o películas durante su tiempo libre?

- No disfruta Disfruta Póco Realmente lo disfruta Disfruta plenamente

31. ¿Con qué frecuencia utiliza su familia actividades físicas o deportes como una forma de recreación familiar? (Por ejemplo, ir de paseos en bicicleta juntos, excursionismo, patinaje sobre hielo)

- Raramente Alguna vez Muy a menudo Frecuentemente

32. ¿Con qué frecuencia va a eventos, clases u otras actividades físicas organizadas para su hijo/a? (Por ejemplo, ver a su hijo/a realizar un baile, en la natación, o en la práctica)

- Raramente A veces Generalmente Casi siempre

33. ¿Qué valor tiene para usted que su hijo/a sea activo/a físicamente?

- No es valioso De poca valor Moderadamente valioso Valioso Muy valioso

34. ¿Por cuantas actividades a pagado usted?

35. ¿Utiliza usted su propio comportamiento para animar a su hijo/a ser físicamente activos?

- Yo no uso mi propio comportamiento para alentar a mi hijo/a a ser activo.
 Rara vez uso mi propio comportamiento para alentar a mi hijo/a a ser activo.
 A menudo utilizo mi propio comportamiento para alentar a mi hijo/a a ser activo.
 Yo uso constantemente mi propio comportamiento para alentar a mi hijo/a a ser activo.

36. ¿Qué tan activo es usted en inscribir a su hijo/a en los deportes?
- Rara vez inscribo a mi hijo/a en los deportes.
 - Inscribo a mi hijo/a de vez en cuando.
 - Con frecuencia inscribo a mi hijo/a en los deportes.
 - Salgo de mi camino para inscribir a mi hijo/a en los deportes.
37. Durante el mes pasado, ¿cuántas veces llevó a su hijo/a a jugar al parque?
_____ Veces
38. ¿Con qué frecuencia la televisión está prendida cuando la gente está en casa?
- En muy raras ocasiones
 - Raramente
 - A veces
 - A menudo
 - Muy a menudo
 - Siempre
39. ¿Cuántos días a la semana ¿Su familia tiene la televisión prendida durante el desayuno?
- 0
 - 1
 - 2
 - 3
 - 4
 - 5
 - 6
 - 7
40. ¿Cuántos días a la semana ¿Su familia tiene la televisión prendida durante la cena?
- 0
 - 1
 - 2
 - 3
 - 4
 - 5
 - 6
 - 7
41. ¿Qué hace su niño/a generalmente cuando tiene una elección acerca de cómo pasar el tiempo libre?
- Casi siempre elige actividades como la televisión, leer, escuchar música o estar en la computadora.
 - Generalmente elige actividades como TV, leer, escuchar música o estara en la computadora.
 - Las mismas probabilidades de elegir la televisión y la lectura ó juegos y deportes activos.
 - Generalmente elige actividades como montar en bicicleta, bailar, jugar al aire libre o deportes activos.
 - Escoge casi siempre actividades como montar en bicicleta, bailar, jugar al aire libre o deportes activos.

APPENDIX G
REVIEW OF LITERATURE

REVIEW OF LITERATURE

The purpose of this literature review is to provide an overview of a) benefits of physical activity and motor development on preschool-aged children with and without disabilities (including those at risk for developmental delay), b) parental influences and involvement with their preschool-aged children with and without disabilities, c) parental self-efficacy assessment tools, and d) parenting practices assessment tools.

Physical Activity and Motor Development

Benefits

The preschool period is crucial to develop lifelong physical activity habits. Favazza et al. (2013) stated that the preschool years are an important period to encourage motor development and engagement in physical activities considering the rapid growth taking place in this period. The preschool years are a transitional time for children moving from childcare to the school system. Physical activity should be encouraged, and an active lifestyle should be fostered among preschoolers (Tucker, Van Zandvoort, Burke, & Irwin, 2011). McMinn et al. (2009) provided evidence that health behaviors may be established in early childhood.

There is no doubt that physical activity has a huge benefit for preschoolers. One systematic review suggested that physical activity may improve bone properties, motor skills,

and cardiovascular function and also provide cognitive and psychological benefits (Timmons, Naylor, & Pfeiffer, 2007). The study also mentioned that play can be considered a form of physical activity in preschoolers. According to Ginsburg (2007), play allows children to use their creativity while improving their cognitive, physical, and emotional strength.

Fundamental motor skills are important components in preschool-aged children. Possessing sound fundamental motor skills enables the child to move about in a variety of ways with fluidness, efficiency, and ease (Favazza et al., 2013). Vlahov, Baughurst, and Mwavita (2014) implemented a longitudinal study of 282 participants 4 to 6 years of age. The Test of Gross Motor Development (TGMD) assessment tool was used to measure the fundamental motor skills of participants. A follow-up study was conducted after eleven years using the AAHPERD Health Related Physical Fitness Test for 140 participants who engaged in the first study. The results of the study suggested that fundamental movement skills could be a predictor for future physical fitness levels. Because the fundamental movement skills are building blocks for advanced sport skills later in life, these skills are closely related to lifelong physical fitness. Therefore, participating in physical activity and becoming proficient in those skills give preschoolers lifelong health benefits.

Recommendations

Physical activity guidelines recommend that preschool children participate in daily physical activity. The National Association for Sport and Physical Education (NASPE) in 2009 set physical activity guidelines for preschoolers. The guidelines reflect the best thinking of specialists in motor development, movement, and exercise. According to the NASPE (2009), preschool-aged children 3 to 5 years of age should participate in structured and unstructured

physical activity for at least 60 minutes every day. Moreover, preschoolers should not be sedentary for more than 60 minutes at a time. Provisions for parents and caregivers in the guidelines indicate that both parents and caregivers are responsible for understanding the importance of physical activity and for encouraging movement skills by providing opportunities for structured and unstructured physical activity.

There is ambiguity regarding how many preschoolers meet the NASPE's guidelines because there are different ways to measure levels of physical activity of children and different interpretations of the guidelines in previous studies (Beets, Bornstein, Dowda, & Pate, 2011). Therefore, it is unclear and hard to objectively measure how many preschoolers meet the NASPE's guidelines. However, the guidelines are still used in many studies as an indicator. The guidelines suggest that preschoolers should be encouraged to develop competence in fundamental motor skills that will serve as the foundation for future motor skillfulness and physical activity.

The U.S. Department of Health and Human Services also published the Physical Activity Guidelines for Americans in 2008. The guidelines suggest that children should do 60 minutes or more of physical activity on a daily basis. At least three days a week of aerobic, muscle-strengthening, and bone-strengthening exercise are recommended by the guidelines.

Sometimes there is a misconception about preschool-aged children's daily physical activity. Preschoolers are often considered to be highly active during daily life (Pate, McIver, Dowda, Brown, & Addy, 2008). However, Pate et al. (2008) directly observed 438 preschoolers' physical activity and concluded that preschoolers are not physically active during preschool programming. Corder, Crespo, van Sluijs, Lopez and Elder (2012) investigated 329 parents' awareness of their child's physical activity using a questionnaire and children's actual physical

activity using accelerometers. The result of their study suggested that most parents overestimated their child's physical activity level (Corder et al., 2012).

Parental Influence and Involvement

Role of Parents

Many studies showed that parents have an important role in their preschoolers' physical activity. Vaughn, Hales, and Ward (2013) reported that parents play an important role in shaping children's physical activity habits. In other words, parents have a direct influence on their children's physical activity (Zecevic, Tremblay, Lovsin, & Michel, 2010). Cools, De Martelaer, Samaey, and Andries (2011) measured the relationship between preschoolers' fundamental movement performance and role of family. Fundamental movement skill of a total of 846 preschoolers 4 to 6 years of age was assessed, and a questionnaire that measures family characteristics was given to parents of preschoolers. Results of this study indicated that parents have an important role in introducing and guiding children through developmental stages of movement skills.

Positive relationships regarding physical activity were found between children and their parents. Children 6 to 11 years of age who have physically active mothers or fathers tend to participate in physical activity more (Edwardson & Gorely, 2010b). Pocock, Trivedi, Wills, Bunn and Magnussin (2010) conducted a systematic review of qualitative studies and suggested that parents act as role models for physical activity habits and behaviors for their children under the age of 12 years old. A positive relationship between parental physical activity and children's physical activity was derived from their systematic review. Parents can influence their child's

physical activity through a variety of mechanisms that include role modeling, interaction, encouragement, beliefs, and attitudes towards physical activity, involvement, and facilitation (Edwardson & Gorely, 2010b).

Some studies examined relationships between parental influences and physical activity levels of their children. Loprinzi and Trost (2010) examined a relationship between parental physical activity orientations and their preschoolers' physical activity levels. The study measured 156 parent-preschooler dyads with preschoolers 2 to 5 years of age using a questionnaire (parental orientations) and an accelerometer (preschoolers' physical activity level). Results of this study indicated that parents can increase their child's participation in active play at home by playing with their child, providing transportation to parks and other activity-related facilities, and giving reinforcement for physical activity participation. Zecevic et al. (2010) measured parental influence of 102 parent-preschooler dyads whose children were 3 to 5 years of age by using a questionnaire. The result of the study suggested that the more parents supported their child's physical activity, the more likely their children were to engage in daily activity. One systematic review of 24 studies related to preschoolers' physical activity indicated that the children of parents who participate in physical activity with their children are more active than the children of parents who do not participate (Hinkley, Crawford, Salmon, Okely, & Hesketh, 2008).

It is important to establish physical activity relationships between parents and their children as early as possible. In a follow-up study of Alderman, Benham-Deal and Jenkins (2010), the authors measured 70 parents' physical activity and their 4- to 6-year-old preschoolers' physical activity using a questionnaire. Physical activity level for both preschoolers and parents and the amount of time that parents participate in physical activity with their preschoolers were assessed. The same questionnaire was sent to parents one to nine years later to compare their

response as time changes. The result of the study showed that as children age and social environment changes, the association between parents and children's physical activity waned. This was because children spend less time with their parents due to other social influences such as friends or teachers (Alderman et al., 2010). This result is supported by the study of Taylor et al. (2009) that implemented a longitudinal study which measured preschoolers' physical activity and inactivity level annually at ages 3, 4, and 5 by using a questionnaire for their parents and accelerometer data for both parents and preschoolers. The study indicated that the reason for the declining relationship between parents and children might be due to changing social structure and decreasing familial relationships.

Definition of Self-Efficacy

Perceived self-efficacy refers to "beliefs" in one's capabilities to organize and execute the courses of action required to produce given attainments (Bandura, 1997). One's belief in one's own ability to succeed influences the amount of effort expended, the extent of stress experienced, and the degree of perseverance in the face of difficulties (Amtmann et al., 2012).

Perceived self-efficacy is not a measure of the skills one has but a "belief" about what one can do under different sets of conditions with whatever skills one possesses (Bandura, 1997). The systematic review by Coleman and Karraker (1997) suggested that self-efficacy beliefs have been found to positively impact on overall human experience, such as academic achievement, athletic performance, complex decision making, or many other areas.

Parental Self-Efficacy

Parental self-efficacy can be interpreted as parents' perceived ability to exercise positive influence on the behavior and development of a child's ability (Coleman & Karraker, 1997).

Parental self-efficacy can be a good estimator of children's physical activity and motor development. Coleman and Karraker (1997) suggested that high parental self-efficacy is strongly related to maternal ability to encourage a happy, healthy, and nurturance childrearing environment. Gerards, Hummel, Dagnelie, De Vries, and Kremers (2013) implemented a questionnaire to 273 participants who were parents of children 3 to 13 years of age. The questionnaire was developed to assess parental perceptions of the behavior problems of overweight and obese children and parental self-efficacy about managing these problems. The result of the study indicated that parental self-efficacy seemed to be an essential component for parents to succeed in raising their children to become healthy adults.

The level of parental self-efficacy is related to parents' behavior. Giallo, Treyvaud, Cooklin, and Wade (2013) mentioned that high parental self-efficacy was associated with increased parental involvement based on their survey with 982 parents of children (0 to 4 years of age). The survey was developed to measure parental involvement; general parenting self-efficacy; parental social support; quality of marriage; parental perception of behavioral characteristics of the child based on temperament of the child; and symptoms of depression, anxiety and stress. Similar results were also found by a systematic review by Jones and Prinz (2005). They reviewed a total of 47 studies to examine the potential roles of parental self-efficacy in parent and child adjustment and the role of parental cognitions in understanding behaviors and emotions within families. Parents who have high parental self-efficacy tended to show effective parenting behavior when they face challenging child behavior. On the other hand,

low parental self-efficacy may be a barrier for parents trying to change their children's nutrition and physical activity behaviors (Gerards et al., 2013). In addition, Jones and Prinz (2005) suggested parents with low parental self-efficacy may express frustration or hesitation about their performance, and this may negatively impact how their children view their own abilities.

There is discrepancy between parental self-efficacy and self-efficacy of parents' own ability. In a study by Decker (2012), a total of 146 parents, whose children were 6 to 11 years, answered a questionnaire. The questionnaire was developed to assess parental self-efficacy regarding healthy diet and physical activity. The result of the study suggested that parents' self-efficacy of their own ability to be physically active was not strongly associated with their parental self-efficacy about their ability to get their children to be physically active. The author also suggested that the result was due to many parents sacrificing their time in order to ensure that their children are active in sports or activity classes. Moreover, Jago et al. (2013) implemented a survey to 252 parents of 3- to 5-year-old preschool-aged children in order to examine parental self-efficacy for screen viewing and promoting physical activity. The result suggested that although parents had high levels of parental self-efficacy to promote physical activity for their preschooler, their own perceived self-efficacy to be active could be low.

Parenting Practices

Parenting practices are defined as parents' direct involvement or behavior that help children to achieve their socialization goals (Darling & Steinberg, 1993). It is also can be defined as specific behaviors and factors related to behavior management and social cognitions (Rebholz et al., 2014). Parenting practices can either encourage or discourage children's activity level (O'Connor et al., 2013).

Role modeling (e.g. demonstrating physical activity), active support (e.g. providing transportation to sport facilities or sports event, enrolling in physical activity class), and direct involvement (e.g. participating in physical activity together) can be parts of parenting practices that encourage children's physical activity (Edwardson & Gorely, 2010a; Rhodes et al., 2013). O'Connor et al. (2013) conducted a qualitative study with 74 parents of 3- to 5-years-old Hispanic children. The study suggested that active engagement might be an important parenting practice for their 3-to 5-years-old children's physical activity. Spera (2005) reviewed empirical studies regarding parenting practices and argued that parenting practices can facilitate children's adolescent achievement. However, letting their children watch TV or play video games, insulting their children, not taking children to physical activity facilities, or preventing children from being active can be discouraging parenting practices (O'Connor et al., 2013).

Measurement Tools

Parental Self-Efficacy

Bandura (2006) suggests that on the formal scale, participants judge their ability to meet the challenges or to surmount the various impediments. Moreover, sufficient gradations of difficulty should be built into the efficacy items to avoid ceiling effects. On the scale of self-efficacy, people are asked to judge their operative capabilities as of now, not their potential capabilities or their expected future capabilities. Using measures with acceptable levels of validity and reliability reduces measurement error and strengthens the conclusions that can be drawn (McMinn et al., 2009).

There is negative opinion about parents reporting their children's behavior. In a study by Rebholz et al. (2014), 10- to 12-years-old children and their parents reported differently regarding parenting behavior. The authors suggested that it might be due to different perspectives on their relationship and behaviors. Moreover, parents are more likely to give a socially desirable answer. However, parental self-reports have found links between parental self-efficacy and parenting behavior although the correlations were smaller than observation or report by an additional informant (Jones & Prinz, 2005). Identifying the relationship of parental self-efficacy can lead to improvement of parenting and quality of life (Coleman & Karraker, 1997).

Parental self-efficacy instruments allow genuine assessment of the extent to which parents perceive themselves more enabled to be effective parents (Kendall & Bloomfield 2005). Some studies that developed parental self-efficacy scales included physical development as one part of a parental self-efficacy scale. Those questionnaires measuring parental self-efficacy mainly focused on the dietary domain rather than physical activity (Bohman et al., 2014; Decker, 2012; Gerards et al., 2013).

The two measurement tools were developed to measure parental self-efficacy of diet and physical activity behaviors. One tool measured both parental self-efficacy about diet and physical activity (Bohman et al., 2014). The questionnaire consisted of 14 items regarding dietary behaviors and physical activity behaviors. Validity and reliability evidence were established when the tool was given to 162 mothers of 6-year-old children. The measurement tool established validity evidence by using exploratory factor analysis (EFA). The EFA showed that the correlations between factors ranged from $r = .52$ to $r = .57$. The Cronbach's alpha for internal consistency reliability of the measurement tool was $\alpha = .88$. The main limitation of the

tool was moderate value of EFA, and the items were not developed but selected from a larger pool.

Another tool also focused on the same domain (Decker, 2012). The second tool was disseminated as a web-based survey. Participants were 146 U.S. parents of 6- to 11-years-old children. EFA showed that all item's correlations were $r \geq .30$. It indicated that the tool had validity evidence. The Cronbach's alpha coefficient was $\alpha = .94$. It showed reliability evidence. The online recruiting was a main limitation of the tool, and it resulted in lack of diversity of the sample.

Currently, there is one parental self-efficacy measurement tool that specifically measures parental confidence in preschoolers' physical activity and motor development. Coleman (2010) developed an instrument, called the Preschool Parent Confidence Questionnaire (PPCQ), that measures parental self-efficacy in the physical activity. The PPCQ was developed to measure self-efficacy of parents related to promoting and fostering the development and growth of healthy physical activity habits and/or behaviors of their preschool-aged children (Coleman, 2010). The PPCQ was administered to 151 parents of preschool-aged children enrolled in the Head Start program to establish evidence of reliability and validity. The PPCQ originally consisted of 18 items. An EFA was used to examine validity evidence and showed that 17 items were contained into three factors. One item was eliminated due to the impossible outcome that the item was loaded to factor 1 with higher than 1.0. The scoring scale of items was an 11-point scale from point 0 (not confident at all) to 10 (totally confident).

The first factor was parental self-efficacy regarding structured opportunities/time and/or structured physical activities/games for preschool-aged children. It contained 11 items. The second factor was parental self-efficacy regarding unstructured physical activities/games for

preschool-aged children. This factor included three items. The third factor contained three items about parental self-efficacy in utilizing toys/objects to keep preschool-aged children active. A total of 17 items loaded greater than .30 in at least one factor.

Cronbach's alpha was conducted to test internal consistency reliability. The full 17 items demonstrated .92. Each of three factors showed good internal consistency reliability, greater than .70. The first factor showed .90 of Cronbach's alpha, the second factor scored .80, and the third factor was .78.

There are a few limitations in the study by Coleman (2010). The number of participants was relatively small ($N = 151$), and the participants were limited to the Illinois region. Nearly 70% of participants were Hispanic or Latino, and over half of the participants' first language was Spanish. Jones and Prinz (2005) mentioned that parental self-efficacy is related to environmental circumstance, socioeconomic status, and ethnicity. Coleman and Karraker (1997) suggested that the role of parental self-efficacy may differ across various socioeconomic status and ethnic groups. Moreover, Coleman and Karraker (1997) also suggested that parents with demanding children have lower self-efficacy when compared to parents of non-problem children. Therefore, it is important to use the PPCQ for participants with various ethnicities, economic statuses, and living environments in order to determine parental self-efficacy on their children's physical activity and motor development.

Parenting Practices

Many measurement tools examining parenting practices have been developed and used in various domains. In the physical development, parenting practices measurement tools have been used to evaluate or compare parenting practices for their children's physical activity levels.

There are two measurement tools that have been utilized to assess parenting practices regarding physical activity. Vaughn et al. (2013) developed a questionnaire, called the Parenting SOS, to assess parenting practices in the domain of physical activity that affect preschoolers' physical activity and inactivity. The authors identified existing instruments and selected appropriate items for parenting practices regarding their children's physical activity and screen time. Moreover, they added more items that were felt to be missing. A total of 147 items were selected or newly added. The items were categorized as three parts: 47 items for the home's physical environments, 41 items about controlling practices, and 45 items regarding supportive practices. Construct validity evidence and internal consistency of the instrument were established for examining parental practice of 324 parents who had 2- to 5-year-old children. Cronbach's alpha for all factors ranged between 0.54 to 0.88. A correlation coefficient among factors showed that many of the factors are significantly correlated with one another. Of the 105 correlations among factors, 65 were statistically significant ($p < 0.05$), 6 were greater than or equal to 0.40, and 11 were between 0.30 and 0.39.

The other questionnaire, entitled the ENERGY, was used in eight European countries (Belgium, Greece, Hungary, the Netherlands, Norway, Slovenia, Spain, and Switzerland). Rebholz et al. (2014) administered questionnaires to both parents and their children regarding parenting practices of dietary, physical activity, and sedentary behaviors. The questionnaire was developed by using items from validated European and country-specific questionnaires. Moreover, the developer also added new items. The questionnaire consisted of items related to parenting practices targeting both child and parent. The items were divided into soft drink consumption, fruit juice intake, having breakfast, physical activity/sport and watching TV. According to Singh et al. (2012), the study used intraclass correlation coefficient (ICC) to

measure both test-retest reliability and construct validity of the ENERGY. The questionnaire had test-retest reliability evidence with good to excellent ($r = .60 - .97$), except one item ($r = .55$) of 121 items. Construct validity evidence was good to excellent ($r > .60$) for 92 out of 121 items when the questionnaire was given to 316 parents of 10- to 12-year-old children in six European countries including Belgium, Greece, Hungary, the Netherlands, Norway, and Spain.

Summary

It is important to pursue being physically active and establish physical activity habits early in life period in order to have lifelong health benefits. Preschoolers with and without disabilities should engage in physical activity for at least 60 minutes on a daily basis according to NASPE guidelines. To meet the guideline, parents should encourage their preschoolers to engage in physical activity more.

Parental self-efficacy regarding their preschoolers' physical activity and motor development can be related to parenting practices that can encourage or discourage their preschoolers to be active and participate in physical activity. However, there has been limited study to examine parental self-efficacy and parenting practices with young children (2 to 7 years of age) with and without disabilities. Parents are the first and the most important influence to encourage physical development for their children with and without disabilities. Parental self-efficacy and parenting practices can significantly affect young children's physical development levels. Therefore, it is important to examine and compare the level of parental self-efficacy and parenting practices of parents who have young children with and without disabilities.

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