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Children's Attitudes towards Peers with Disabilities: Associations with Personal and Parental Factors Soo-Young Hong^{a,*}, Kyong-Ah Kwon^b and Hyun-Joo Jeon^c

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The purpose of this study was to investigate the following: (i) associations among children's prior contact with people with disabilities and the three dimensions of children's attitudes towards people with disabilities: children's understanding of and their feelings about people with disabilities and their behavioral intentions to make inclusion decisions; (ii) the relation between children's behavioral intentions to make inclusion decisions and the demands of activity contexts and the types of disabilities; and (iii) the association between parents' attitudes and children's attitudes. Participants included 94 typically developing four- and five-year-old preschoolers. Children's understanding of disabilities and their prior contact with people with disabilities were found to be positively related to their feelings about people with disabilities; children's understanding of disabilities was a significant moderator of the relation between their behavioral intentions and activity contexts or types of disabilities. The hypothesized association between parents' attitudes and children's attitudes was not significant. Preschoolers may benefit from having more regular contact with people with disabilities to develop positive feelings towards their peers with disabilities, which is also related to their understanding of disabilities. Children's behavioral intentions to make inclusion decisions need to be understood in relation to their understanding of disabilities, the demand of activity contexts, and types of disabilities.

Keywords: Preschoolers, Attitudes towards peers with disabilities, Inclusion, Parents' attitudes

Young children are expected to develop social skills through interactions with peers when they attend preschool programs (Scott-Little, Kagan, & Frelow, 2006). In inclusive classrooms, the odds that children with disabilities will enhance their social skills increase when the children have opportunities to interact with typically developing peers (Guralnick, Neville, Hammond, & Connor, 2007; Kwon, Elicker, & Kontos, 2011). However, children with disabilities do not interact frequently with typically developing children partly because they tend not to initiate social interactions (Odom et al., 2006). This implies that children with disabilities may be less likely to interact with typically developing peers unless those peers actively and positively initiate interactions or unless adults intervene to

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facilitate such interactions. Therefore, typically developing children's attitudes towards children with disabilities may be critical for promoting social interactions between children with and without disabilities in preschool settings.

Children as young as preschool ages, however, often display favoritism towards a group of peers who shares similar characteristics (e.g. gender, ethnicity, and developmental status), displaying a negatively biased view and relative discrimination towards peers with characteristics they perceive as different from their own (Castelli, de Amicis, & Sherman, 2007; Diamond & Tu, 2009; Nabors & Keyes, 1995; Nowicki & Sandieson, 2002). On the other hand, young children's awareness of others or their playmate preferences, which usually begin forming at early ages (e.g. four to five years of age; Guralnick, Gottman, & Hammond, 1996), might be most malleable during this developmental period (i.e. the preschool years). We do have some ideas of what helps, such as children's prior contact with people with disabilities, but there is a lack of knowledge on what factors contribute to typically developing children's attitudes especially in early years, and some existing findings are equivocal. Thus, the current study focused on the exploration of such attitudes and their contributing factors. This effort will help us advance our understanding of the development of young children's attitudes and make implications about effective strategies for early intervention to improve social interactions between children with and without disabilities.

The Multidimensional Nature of Children's Attitudes towards Disabilities

The Theory of Planned Behavior (Ajzen, 1988; Ajzen & Fishbein, 1980; Fishbein & Ajzen, 1975) provides a useful theoretical model with respect to the process of the formation of one's attitudes towards others by describing the relationships between attitudes and actual behavior. According to the Theory of Planned Behavior, attitudes are conceptually multidimensional and typically consist of three dimensions. The cognitive dimension includes people's beliefs and understanding about others as well as their characteristics. The affective dimension includes people's feelings and emotional reactions to others (e.g. fear and anxiety), whereas the behavioral dimension refers to 'a predisposition to act in a certain manner' (i.e. behavioral intentions) towards others (Ajzen, 1988; Eagly & Chaiken, 1993; Triandis, 1971; Yu, Ostrosky, & Fowler, 2012, p. 133). These three dimensions have been thought to be associated with one another and contribute to actual behaviors differently. For example, the affective aspect of attitudes may be associated with behavioral intentions or actual behaviors (Favazza, Phillipsen, & Kumar, 2000; Roberts, 1999) by determining children's playmate choices and how they actually interact with these peers (Okagaki, Diamond, Kontos, & Hestenes, 1998). In the context of inclusive classrooms, in particular, children who have more positive feelings about peers with disabilities may be more willing (i.e. behavioral intentions) or likely (i.e. actual behavior) to play with them than the children who have less positive feelings about peers with disabilities. Some other empirical evidence, however, showed that having positive attitudes towards others did not necessarily lead to behavioral intentions or actual behaviors (e.g. Dyson, 2005). The behavioral dimension of attitudes has been defined and measured in different ways with relatively little data compared to other dimensions of attitudes. A recent review (Yu et al., 2012) categorized children's actual behavior as behavioral attitudes. However, in the current study, the behavioral attitudes focus on children's willingness or intentions to include a peer with a disability, which is somewhat different from how they interact with peers with disabilities in an actual situation but closer to an antecedent of the actual behavior

than the affective dimension. How the current study defines behavioral attitudes is close to the behavioral aspect of the Theory of Planned Behavior that Ajzen (1991) proposed.

In addition, the cognitive aspect of attitudes may also be linked to the behavioral aspect of attitudes (i.e. behavioral intentions; whether children say they would accept or reject a peer with a disability) (Diamond & Hestenes, 1996; Diamond, Hong, & Tu, 2008; Favazza & Odom, 1997; Magiati, Dockrell, & Logotheti, 2002). For example, children's understanding of disabilities appeared to predict their decisions to include or exclude a peer with a physical disability (Diamond et al., 2008; Magiati et al., 2002). Lastly, the cognitive aspect of attitudes may be associated with the affective aspect of attitudes. Even though young children do not have complete understanding of what a disability means, several studies suggest that young children have a basic level of understanding of disabilities and are able to distinguish at least some types of disabilities and learn positive attitudes (e.g. physical and sensory disabilities; Diamond et al., 2008; Magiati et al., 2002; Nabors & Keyes, 1997). Even a basic level of understanding of disabilities may be related to their feelings about peers with disabilities since having a better understanding of another group of people may promote positive feelings about them (e.g. Katz & Chamiel, 1989; Okagaki et al., 1998) and reduce fears about people with disabilities that might result partly from the lack of knowledge.

Although there are theoretical and empirical links among these three dimensions of attitudes, few investigations examined the three dimensions and their associations altogether especially in early years, when their attitudes towards others begin to emerge and develop. The investigation of typically developing children's cognitive, behavioral, and affective aspects of attitudes towards people with disabilities will be a primary focus of this study while it attempts to validate the theory of planned behaviors (Ajzen, 1988; Ajzen & Fishbein, 1980).

Factors Associated with Children's Attitudes towards People with Disabilities

The Theory of Planned Behavior (Fishbein & Ajzen, 1975) proposed that there were two basic determinants of one's attitudes and especially one's behavioral intentions: personal and social factors. Typically developing children's prior contact and experience with people with disabilities, activity contexts where they need to make decisions to include or exclude peers with disabilities (Diamond & Tu, 2009; Nowicki & Sandieson, 2002), and their parents' attitudes towards people with disabilities (Nikolarazi & de Reybekiel, 2001) have been identified as important determinants of their intergroup attitudes (e.g. Katz & Chamiel, 1989; Vignes et al., 2009). While the first two factors are considered to be personal factors, parents' attitudes towards others were referred to as social factors that reflect how significant others believe people should behave (Rutter & Bunce, 1989).

Children's prior contact with people with disabilities

Research has shown that whether or not the experience is structured, contact with people with disabilities can help children develop positive attitudes towards these individuals (e.g. Diamond, 2001; Esposito & Reed, 1986; Favazza & Odom, 1997). Children who had more frequent contact with people with disabilities tended to have more positive attitudes towards them (e.g. Favazza & Odom, 1997). However, it is not clear how much exposure young children have with people with disabilities in their daily life and how this exposure to or contact with people with disabilities is associated with children's attitudes towards peers with disabilities.

Activity contexts

Not only do typically developing children's understanding of disabilities but also their awareness of the extent to which disability-related limitations influence classroom activity, may be associated with their decisions to include peers with disabilities in their play (e.g. Diamond & Tu, 2009; Nowicki & Sandieson, 2002). For example, several researchers have examined how the physical demand of the different activity contexts (e.g. outdoor play, drawing) affected preschool children's decisions to include the peer with a disability in activities (Diamond & Hestenes, 1996; Diamond & Tu, 2009; Diamond et al., 2008; Nabors & Keyes, 1997). Results from these studies revealed that children were more likely to include the child with a disability when the disability did not interfere or only minimally interfered with the activity (e.g. putting puzzle pieces together) than when the disability tended to interfere with the proposed activity (e.g. kicking a ball).

Parents' attitudes towards people with disabilities and inclusion

A recent theory about the development of intergroup attitudes considers parents as the most important socialization agent for children in early years (e.g. Bigler & Liben, 2007; Dunn, 1993). As a primary socialization agent, parents may directly influence children's attitudes through modelling, explicit teaching, or discussions about relationships with or attitudes towards other people, or they may indirectly influence children's attitudes by providing opportunities to interact with peers who have certain characteristics (Dunn, 1993). Whether consciously or not, parents demonstrate their own values and beliefs about other people in their daily interactions with their children and other people, which may influence children's attitudes towards others.

A few studies have attempted to examine the associations between parents' attitudes and children's attitudes towards people with disabilities. For example, Peck, Carlson, and Helmstetter (1992) have found that children of parents who believed in positive aspects of inclusion were more accepting of human differences, more aware of others' needs, and showed more comfort around people with disabilities. Similarly, Okagaki et al. (1998) found that the children of parents who reported that they would use more modelling as their preferred strategy to help their child interact with children with disabilities were observed to interact more with peers with disabilities in their preschool classrooms. However, these two studies have limitations as Peck et al. (1992) did not collect data directly from children, and Okagaki et al. (1998) examined the associations between parents' beliefs about interacting with children with disabilities and children's actual interaction with peers with disabilities but did not directly investigate the link between parents' and children's attitudes towards people with disabilities.

On the other hand, Rosenbaum, Armstrong, and King (1988) reviewed studies and reported that there were inconsistent findings with respect to connections between parents' attitudes and children's attitudes towards people with disabilities as a function of children's characteristics, such as age and gender. For example, children's attitudes seemed independent of parents' attitudes in early years, but as the children reached school age and adolescent years, their attitudes became more similar to the attitudes that their parents held (Roberts & Lindsell, 1997; Rosenbaum et al., 1988). Katz and Chamiel (1989) also indicated that there was an interaction effect between child age and parental attitudes towards disabilities on children's attitudes towards people with disabilities. However, the result was opposite to that of Roberts and Lindsell (1997) and Rosenbaum

et al. (1988) in that Katz and Chamiel (1989) found five- and six-year-old children's attitudes towards disabilities were associated with parental attitudes towards disabilities. Given the inconsistent evidence and limited recent investigation regarding this issue, further investigation of the link between parents' attitudes and young children's attitudes towards people with disabilities would be beneficial. In addition, the aforementioned studies conducted in the late 1980s or early 1990s might not accurately reflect the possible changes in attitudes towards people with disabilities due to the recent changes in policy (e.g. The Individuals with Disabilities Education Act) authorized in 1990 and amended in 2004 to promote full integration of children with disabilities in educational settings.

Taken together, it is our intention to validate the theoretical model of planned behavior (Ajzen, 1988) by including three dimensions of attitudes. We also aim to fill the gap in the literature on children's attitudes towards peers with disabilities and multiple factors associated with the attitudes, including individual, activity-contextual, and parents' attitudes, while focusing mainly on preschool years during which children's attitudes towards others begin to emerge. In particular, the investigation of the association between parents' attitudes and children's attitudes towards people with disabilities in early years has been rarely conducted using data from both children and parents as a source of information. We attempt to address the gap by using a method with direct sources, such as an interview with children and a survey of parents about their attitudes towards people with disabilities.

Current Study

The present study investigated the following: (i) associations among three dimensions of children's attitudes towards people with disabilities: cognitive, affective, and behavioral aspects of attitudes in relation to their prior experience with people with disabilities; (ii) the relation between children's behavioral aspect of attitudes towards a peer with a disability and the demands of various activity contexts in relation to the type of disability after controlling for their cognitive and affective aspects of attitudes towards people with disabilities; and (iii) how parents' attitudes towards people with disabilities and inclusion play a role in the three dimensions of attitudes. We hypothesized that there would be positive associations among three dimensions of attitudes towards people with disabilities and that individual and parental factors would be significantly related to the three dimensions of attitudes.

METHOD

Participants

Ninety-four typically developing preschoolers aged four and five years (48 girls; mean age = 54.63 months; SD = 7.35) were recruited from early care and education programs in two Southeastern cities and one Midwestern city. About 23% ($n = 22$) of the children were recruited from inclusive classrooms where there was at least one child with an identified disability, and the rest of the children were recruited from classrooms that did not contain a child with a disability. The children's parents (i.e. mostly mothers: $n = 85$) also participated in this study. Parents' age ranged from 22 to 60 years ($M = 36.17$ years; $SD = 6.51$), and about 90% of the parents had a bachelor's or higher degree. The majority of the

sample was middle-class European American (75.5%). Study participants' characteristics are shown in Table 1.

Design and Procedure

A letter of invitation was sent to directors of early care and education programs. Once the director agreed to participate, researchers visited the program to deliver recruitment packets to teachers so they could distribute them to parents of children without disabilities. The recruitment packets approved by university-based institutional review boards (IRB) at three institutions were sent home, and they included a copy of the parent consent form and a parent questionnaire that included questions regarding demographic information, their attitudes (mostly mothers' attitudes; $n = 85$) towards people with disabilities and inclusion, and their child's exposure to people with disabilities.

Five graduate research assistants received a two-hour training regarding how to ask questions to children, use props, and record (i.e. handwrite) their responses. These research assistants practiced the interview with a couple of children under the supervision of one of the three authors before the actual interview. Once researchers (i.e. authors and five trained graduate assistants) obtained completed questionnaires and signed consent forms from the parents, they visited the classroom and interviewed the children in a separate room or in a quiet corner of the classroom. Researchers asked each child for a verbal assent before asking any questions, and all children whose parents signed up for the study participated in the interview process. Although the children or teachers in most settings did not have existing relationships with the interviewers, there was no child who refused to participate or wanted to stop during the interview. Semistructured interviews that lasted approximately 20–25 minutes were conducted with individual children. The verbatim of children's responses during the interviews were recorded without audio- or videotaping.

The interview consisted of two parts: (i) the first set of the questions asked about children's general understanding of, feelings about, and prior contact with people with disabilities; and (ii) the second part included four hypothetical scenarios that prompted children to make decisions about including a hypothetical child with a motor disability (i.e. a child who cannot walk) and a hypothetical child with a visual impairment (i.e. a child who cannot see) in an activity (see Appendix for examples). Children's responses to the hypothetical scenarios were used as an indicator of their behavioral intentions, which may or may not be different from their actual behavior. Props such as drawings and paper dolls were used to elicit children's responses.

Measures

Child interview protocol

To gather information about children's attitudes towards peers with disabilities, we conducted a one-on-one interview with each child whose parent provided consent. As shown in Table 2, we coded individual items included in the interview protocol into quantitative scores and created three constructs (i.e. children's understanding of disabilities, children's feelings about people with disabilities, and children's behavioral intentions about including peers with disabilities in play). Table 2 includes the actual variables that we created using the data, specific interview items, given codes, description of the codes, and examples of children's response to each item.

Table 1. Participants' demographic characteristics

	Total (N = 94)			Alabama (n = 29)		Georgia (n = 45)		Nebraska (n = 20)	
	n	%	Missing n(%)	n	%	n	%	n	%
Child									
Boy	46	51.1	0	18	47.6	10	26.1	10	47.6
Age ^a M (SD)	54.63	(7.35)	1 (1.1)	53.59	(7.94)	54.66	(7.02)	56.10	(7.28)
Ethnicity			15(16.0)						
European American	68	67.0		27	93.1	22	48.9	14	70.0
African American	9	9.6		1	3.4	7	15.6	1	5.0
Latino	5	5.3		1	3.4	3	6.7	1	5.0
Asian America	10	10.6		0	0	7	15.6	3	15.0
Others	6	6.4		0	0	5	11.1	1	5.0
Parent									
Relationship to child			3 (3.3)						
Mother	85	90.5		26	90	41	91	18	90
Father	6	6.4		2	6.9	2	4.4	2	10.0
Age M (SD)	36.17	(6.51)	1 (1.1)	34.10	(5.24)	37.98	(7.67)	35.20	(4.07)
Ethnicity			2 (2.1)						
European American	72	76.6		28	96.6	28	62.2	16	80.0
African American	8	8.5		1	3.4	6	13.3	1	5.0
Latino	4	4.3		0	0	3	6.7	1	5.0
Asian America	8	8.5		0	0	6	13.3	2	10.0
Others	1	1.1		0	0	1	2.2	0	0
Education			4 (4.3)						
Some college/associate	8	5.5		2	6.9	5	11.1	1	5.0
Bachelor's	28	29.8		10	34.5	12	26.7	6	30.0
Master's	37	39.4		13	44.8	15	33.3	9	45.0
Doctorate	17	18.1		2	6.9	11	24.4	4	20.0
Household annual income			2 (2.1)						
Under \$20,000	4	4.3		0	0	3	6.7	1	5.0
\$20,000-\$40,000	9	9.6		0	0	4	8.9	5	25.0
\$40,000-\$60,000	11	11.7		6	20.7	2	4.4	3	15.0
\$60,000-\$80,000	14	14.9		9	31.0	2	4.4	3	15.0
\$80,000-\$100,000	13	13.8		5	17.2	5	11.1	3	15.0
Over \$100,000	41	43.6		9	31.0	28	62.2	4	20.0
Employment status			1 (1.1)						
Unemployed	11	11.7		3	10.3	2	4.4	6	30.0
Part-time	16	17.0		4	13.8	8	17.8	4	20.0
Full-time	65	69.1		21	72.4	34	75.6	10	50.0
Retired	1	1.1		1	3.4	0	0	0	0
Program	13		0	4		7		2	

Note. ^aChild age was calculated in months.

The first question that asked children to define the word, a 'disability,' elicited their basic understanding of the concept. Whether or not the child had a correct understanding of a disability, the researcher provided explanation about disability with concrete examples before asking further questions to make sure that the children understood what she meant by disabilities (i.e. 'We say people have a disability when they cannot walk, or when they cannot see things'). A child interview protocol modified from the Primary Student Survey of Handicapped Persons (PSSHIP; Esposito & Peach, 1983) was used in the present study. This measure was originally developed to assess preschoolers to seven-year-old children so did not require reading or writing skills. The interview protocol consisted of 11 questions. Out of those 11 items, four items asked about children's general understanding of and perceptions about disabilities. Two items asked about children's feelings about people

Table 2. Children's attitudes variables and Codes for qualitative responses: children's understanding, feelings, and behavioral intentions

Composite variables Children's understanding of disabilities (0 to 16)	Interview/questionnaire items	Code	Label/description	Notes/Examples
Children's understanding of disabilities (0 to 16)	A. Tell me everything you know about a person who has a disability (1 item; 0 to 2)	0	I don't know; no response; misunderstanding	Does it mean playing golf? My daddy knows the circus. I have book about someone who fell off the tree.
		1	Some misunderstanding but acceptable	My dad and sister also wear glasses. She can't walk, she can't see.
		2	Basic level of understanding	I know it cannot heal sometimes. (Disabilities are contagious)
	B. Children's misunderstanding about disabilities (2 items; 0 to 2)	0	Misunderstanding	(Disabilities are not contagious)
	B-1. Children's justifications about their responses (2 items; 0 to 2)	1	Understanding	I won't be able to see or walk if I play with child who cannot see or walk;
		0	I don't know; irrelevant responses; misunderstanding	She is nice girl
		1	Basic level of understanding	I will still be able to walk. Children who cannot see are just born like that.
	C. Are people with disabilities a lot like you or a lot different from you? (1 item; 0 or 1)	0	A lot different from me	
		1	A lot like me	
	C-1. Why? (1 item; 0 or 1)	0	I don't know; no response; irrelevant responses; or irrelevant physical characteristics	Because one time got flu, we had the same soup, and catch cold.
		1	Relevant physical characteristics; or Beyond physical characteristics	My hair is dark and have ponytail. Be cause their face and their eyes look different. They are blind or in wheelchair. Because don't have disabilities. Kind of different but the same person. Because they can do everything.

D. Children's justifications about their inclusion decisions (8 items; 0 to 8)	0	Misunderstanding	I think he (child in wheelchair) kick ball.
E. How did you feel when you met a person with a disability? (1 item; 0 or 1)	1	Understanding	He (child who cannot see) doesn't know where he is going.
F. Are you afraid of people with disabilities? (1 item; 0 or 1)	0	Irrelevant responses	The zebra has water.
F-1. Why? (1 item; 0 to 2)	1	Empathy-driven responses	I feel a little sad.
Children's feelings about people with disabilities (0 to 4)	0	Yes	I am brave.
	1	No	I am not afraid of anything.
	0	I don't know; no responses; irrelevant responses	Because I don't want them to feel hurt.
	1	Empathy-driven responses or just a lack of experience	Because have never seen them before.
	2	People with disabilities are not someone who are scary	They are not monsters or tornadoes.
	0	Yes	They are just persons.
G. Have you teased a person with disabilities? (1 item; 0 or 1)	1	No	
H. Vignettes with matching drawings	0	No, she or he cannot play.	
	1	Yes, she or he can play.	

Note. ^aJustifications for their responses to the vignettes were coded as children's understanding of disabilities (see item D).

(8 items; 0 to 8) (see)^a

with disabilities and justifications for their response. Four items asked about their prior contact with people with disabilities. One item asked whether or not children have teased a child with a disability in the past, which was included as a component of their behavioral intentions. We did not use one remaining item in this analysis (i.e. Have you seen children tease a child with disabilities?) because this question was not relevant to the constructs that we included in our research questions. We changed the original wording so that it reflects more current terminology and also helps preschool-aged children understand and respond to the questions easily. For example, we revised 'handicapped persons' to 'people with disabilities.' In addition, we added a more story-like component to the question asking about children's understanding regarding whether disabilities are contagious or not (i.e. similar method used by Harter & Pike, 1984).

In addition, the researchers used two pairs of four hypothetical scenarios with play situation drawings and paper dolls to ask children if they would choose to include a child with a disability in their activity: one pair with a hypothetical child with a motor disability and the other pair with a hypothetical child with a visual impairment. A paper doll was used to represent each hypothetical child with a disability. More specifically, one paper doll was in a wheelchair, and the other was holding a cane with her/his eyes closed. It has been known that even young children express awareness about sensory and motor disabilities, understanding that some people cannot see, hear, or walk (Conant & Budoff, 1983). These types of disabilities are more obvious than cognitive and learning disabilities, and this is the main reason that previous studies have focused on physical disabilities (e.g. Diamond et al., 2008), especially when young children were the target sample.

Four activity contexts were included in this part of the interview. Two of the activity contexts included in the vignettes were activities in which the hypothetical child with a disability might have difficulties participating (e.g. kicking a ball for a child in a wheelchair and putting puzzle pieces together for a child with a visual impairment). The other two activity contexts included in the vignettes were activities in which the hypothetical child with a disability would not have difficulties participating (e.g. putting puzzle pieces together for a child in a wheelchair and singing a song with peers for a child with a visual impairment). We included these two types of activity contexts to see if they would make a difference in children's intentions to include or exclude the child with a disability. Trained research assistants and the authors described the situation to the participating child and asked whether or not they would include the hypothetical child with a disability in their play (1 = Yes; 0 = No; four vignettes X two types of disabilities) and justifications for their decisions. Children's responses were recorded in verbatim. This measure was used to assess children's behavioral intentions towards peers with disabilities, and children's justifications were used to assess children's understanding of disabilities. Example questions are included in the Appendix.

Parents' attitudes towards people with disabilities

The Scale of Attitudes toward Disabled Persons (SADP; Antonak, 1982) was used to measure parents' attitudes towards persons with disabilities. In this study, the SADP was modified to reflect more recent terminology (e.g. 'handicapped,' and 'mainstreaming' were replaced by 'children with disabilities' and 'inclusion' accordingly) and deleted five items that might elicit uncomfortable feelings from participants (e.g. 'People who are disabled should be prevented from having children'). This 19-item scale instrument asked the participants to express their agreement with each statement on a six-point continuum ranging

from *strongly disagree* (3) to *strongly agree* (+3). After negative items were reverse-coded, the score was recoded and averaged so they ranged from 1 to 6, where 6 represented the most positive attitudes towards people with disabilities. Previous studies found a strong correlation between SADP and the Opinions Relative to Mainstreaming Scale (ORMS) (e.g. Beattie, Anderson, & Antonak, 1997), and the strong correlation remained strong even after deleting five items in this study, which adds validity to the revised measure (Jeon & Peterson, 2003). Overall, parents had positive attitudes towards people with disabilities, but the distribution was not skewed (i.e. skewness statistic = .82) and did not violate the normality assumption (i.e. significance level of the Shapiro-Wilk normality test was greater than .05). According to previous studies (e.g. Beattie et al., 1997; Jeon & Peterson, 2003), the SADP has satisfactory psychometric characteristics, and their internal consistency coefficients ranged from .76 to .88. With the current sample, Cronbach's alpha coefficient of the SADP was .84.

Parents' attitudes towards inclusion

The Opinions Relative to Mainstreaming Scale (ORMS; Larrivee & Cook, 1979) was used to measure parents' attitudes towards inclusion. This scale was a six-point Likert-type instrument that asked about parents' attitudes towards inclusion (3 = *strongly disagree*; +3 = *strongly agree*) and contained 30 items. In this study, the ORMS was modified to reflect more recent terminology to measure attitudes regarding inclusion of children with disabilities into general education classrooms (e.g. 'regular classroom,' 'handicapped,' and 'mainstreaming' were replaced by 'general education classroom,' 'children with disabilities,' and 'inclusion' accordingly). After negative items were reverse-coded, the score was recoded and averaged so they ranged from 1 to 6, where 6 represented the most positive attitudes towards inclusion. According to previous studies (e.g. Beattie et al., 1997; Jeon & Peterson, 2003), the ORM has satisfactory psychometric characteristics and their internal consistency coefficients ranged from .87 to .92. With the current sample, Cronbach's alpha coefficient of the ORM was .94.

Demographic information

Parents were also asked to complete a questionnaire regarding their demographic characteristics (e.g. child's age, gender, ethnicity, parents' age and gender, parents' experience with people with disabilities, and parents' education level).

Constructed Variables for Analyses

The first and the second authors carefully reviewed interview questions and children's responses and grouped the items into four categories that represent aspects of children's attitudes (e.g. understanding, feelings, and behavioral intentions) and children's prior contact and experience with people with disabilities. We also coded children's qualitative responses (e.g. why they want to include or do not want to include the hypothetical child in their play) to the interview questions inductively. We reviewed all the children's responses recorded in verbatim by research assistants and developed a coding system that represents the data well. Then, we coded the responses independently and compared and discussed the codes. The inter-coder percent agreement ranged from 89 to 100%, overall. Once disagreements occurred, if any, we discussed them thoroughly until agreeing upon the final

codes for those specific responses. The detailed description of the following composite variables with examples is presented in Table 2. A researcher who is familiar with this area of research verified the grouping of the items.

Cognitive dimension: Children's understanding of disabilities

Children's understanding of disabilities was calculated by adding the scores of three items selected from PSSHP child interview measure (Esposito & Peach, 1983) (i.e. scores of children's knowledge about disabilities, scores on two items regarding children's misunderstandings about the concept of disabilities, and scores on their perceptions about people with disabilities) (see Items A, B, and C in Table 2), children's justification of their answers (Items B-1 and C-1), and children's justifications of their inclusion decisions for the hypothetical scenarios (Item D) (*possible range* = 0 to 16). Children's qualitative responses to the questions regarding their understanding of disabilities were coded by the first and the second authors and added to the overall score. Children's knowledge about disabilities was coded as 0 (*I don't know/no response/misunderstanding*), 1 (*some misunderstanding but acceptable*), or 2 (*basic understanding*). Children's misunderstanding about disabilities was reverse-coded as 0 (*I don't know/no response/misunderstanding/irrelevant response*) or 1 (*basic level of understanding*). Their responses about the similarities and differences between themselves and people with disabilities were coded as 0 (*I don't know/no response/irrelevant physical characteristics*) or 1 (*relevant physical characteristics or explanation beyond physical characteristics*). Their justifications to the hypothetical scenarios were coded as 0 (*misunderstanding*) or 1 (*understanding*). The total score was used in the analysis. The average inter-coder agreement was 97% (SD = 3.01; *range* = 96–100%).

Affective dimension: Children's feelings about people with disabilities

Children's general feelings about people with disabilities were calculated by summing scores of items asking how children feel about people with disabilities (*possible range* = 0 to 4) selected also from PSSHP (Items E and F in Table 2). Children's qualitative responses to the questions regarding their feelings about people with disabilities (Item F-1) were coded by the first and second authors and added to the overall score. Children's responses to the question about their feeling afraid were coded as 0 (*I don't know/no response/no further explanation/irrelevant responses/negative response*), 1 (*empathy-driven responses or just a lack of experience*), or 2 (*understanding that people with disabilities are not scary*). Their responses to the question about their general feelings with a person with a disability was coding as 0 (*no response/irrelevant responses/negative response*) or 1 (*empathy-driven responses/positive response*). The total score was used in the analysis. The average inter-coder agreement was 94% (SD = 4.51; *range* = 89–100%).

Behavioral dimension: Children's intentions to include a peer with a disability

The total score of children's behavioral intentions to include a peer with a disability in play was calculated by summing up their responses to the four hypothetical vignettes (Item H in Table 2; *possible range* = 0 to 8) and their response to one question from PSSHP about their experience of teasing someone with a disability (Item G). Therefore, the total possible score for the behavioral dimension was 9 (M = 6.22; SD = 2.75; *range* = 0 to 9). This total score was used in the analysis to answer the first and third research questions. For the

second research question about the association between children's behavioral intentions and activity contexts and types of disabilities, we did not use the children's behavioral intention composite variable (possible range = 0 to 9) but instead used children's response to each hypothetical vignette reflecting their behavioral intentions to include a child with a disability in a play context as a repeated measures outcome variable (possible range = 0 to 2).

Children's prior contact with people with disabilities

The total score of children's prior contact with people with disabilities was created by summing all possible instances where children may have encountered people with disabilities in their everyday lives (e.g. 'Have you met a person with a disability?' and 'Do you have a family member with a disability?'). These questions were asked to both children and their parents, so the data were corroborated from two sources. When the two sources provided conflicting information, we selected parents' responses over children's. More specifically, children were asked in their interview whether they had a friend, neighbor, or family member with a disability while parents were asked to report relationships with the person with a disability in broader contexts including family, work, neighborhood, and so on. When a child responded 'no' to all the categories but if his or her parent indicated that they had a family member or neighbor with a disability, we used the parent's report (i.e. 4 out of 94 cases). The average was 2.05 (SD = 1.32; range = 0 to 6), which indicates that these children have contact with about two people with disabilities on a regular basis.

RESULTS

The descriptive statistics of main variables are presented in Table 3. Overall, the average score of children's understanding of people with disabilities was 5.51 (SD = 1.73; possible range = 0 to 16). When prompted with the question, 'Tell me everything about people with disabilities,' about 13% of the children (12 out of 94 children) had a basic level of understanding about disabilities. The average score of children's feelings about people with disabilities was 1.52 (SD = 1.13; possible range = 0 to 4), and on average, participating children had had contact with about two people with disabilities on a regular basis (M = 2.05; SD = 1.32; possible range = 0 to 7). The average children's behavioral intentions to include peers with disabilities was 6.22 (SD = 2.75; possible range = 0 to 9), representing the fact that children reported that they would accept peers with disabilities in their play about six out of nine times. Overall, parents of the participating children had fairly positive attitudes towards people with disabilities and inclusion (M = 5.02 out of 6, SD = .58; M = 4.7 out of 6, SD = .71, respectively).

Associations among Dimensions of Children's Attitudes towards People with Disabilities

We examined whether or not there were associations among the three dimensions of children's attitudes towards people with disabilities: children's understanding of disabilities, their feelings about people with disabilities, and their behavioral intentions to include peers with disabilities (see Table 4). Their prior contact with people with disabilities was also examined in relation to the three dimensions. Bivariate correlation analyses revealed that children's understanding of people with disabilities was positively related to their feeling about people with disabilities [$r(94) = .35, p < .001$] (see Table 4). In addition, children's feeling about people with disabilities was positively associated with their prior

Table 3. Descriptive statistics for main variables

Variable	Total (N = 94)			Alabama (n = 29)			Georgia (n = 45)			Nebraska (n = 20)		
	M	SD	Max	M	SD	Max	M	SD	Max	M	SD	Max
Child												
Understanding	5.51	3.18	13.00	4.31	3.35	13.00	6.31	3.27	13.00	5.45	2.14	10.00
Feelings	1.52	1.13	4.00	1.45	0.87	4.00	1.62	1.34	4.00	1.40	0.99	3.00
Behavioral intentions	6.22	2.75	9.00	6.04	3.14	9.00	6.69	2.52	9.00	5.40	2.54	9.00
Prior Contact	2.05	1.32	6.00	2.24	1.15	5.00	1.67	1.17	6.00	2.65	1.63	6.00
Parent attitudes towards												
People with disabilities	5.02	0.58	6.00	4.80	0.58	5.73	5.23	0.46	6.00	4.88	0.68	5.84
Inclusion	4.70	0.71	5.93	4.51	0.73	5.70	4.83	0.73	5.93	4.69	0.60	5.53

Note. No significant gender or ethnic difference was found.

contact with people having disabilities [$r(94) = .30, p = .003$]. Child's age was positively related to the understanding of people with disabilities ($r = .22, p = .37$). We did not find any difference in any other dimensions of children's attitudes towards people with disabilities by child gender or ethnicity.

Multiple regression analyses were used to examine the association between the dimensions of children's attitudes towards people with disabilities (understanding of disabilities, feelings about people with disabilities, and behavioral intentions to include peers with disabilities) and their prior contact with people with disabilities, after controlling for children's age and gender and the interaction between age and gender. We found that the interactions between children's characteristics and prior contact did not predict any of children's attitudes towards people with disabilities, and we did not include these interactions in our final regression model in order to achieve a parsimonious model. Results of the final regression model indicate that children's age and prior contact with people with disabilities were positively related to their feelings about people with disabilities (see Table 5). Children's understanding of disabilities and behavioral intentions to include peers with disabilities were not predicted by child age, gender, and the interaction between age and gender.

Associations of Acceptance of Peers with Disabilities with Activity Context and Type of Disability

Children's behavioral intentions to include peers with disabilities were measured by asking the child whether he/she includes hypothetical children with two different types of disability in two different activity contexts. A 2 (a peer who cannot walk vs. a peer who cannot see) \times 2 (contexts where disability interferes vs. contexts where disability does not interfere) repeated measures analysis of covariance (ANCOVA) was used to examine whether children's behavioral intentions to include peers with disabilities was associated with the activity context. The possible range of the dependent variable was 0 to 2 for this particular analysis in order to take into account the repeated nature of the data. The activity context and type of disability were within-subject factors. Children's prior contact with, understanding of, and feelings about people with disabilities, as well as the child's age and gender were between-subject variables. In the repeated measures ANCOVA, univariate assumptions were made because sphericity tests are not necessary when within-subject factors are only two-level variables. Results revealed that two interactions of the activity context ($F = 9.22, p = .003, \eta_p^2 = .100$) and type of disability ($F = 8.77, p = .004, \eta_p^2 = .096$)

Table 4. Correlations among main variables

	1.	2.	3.	4.	5.	6.	7.
1. C Age							
2. C Understanding	.22*						
3. C Feelings	.12	.35***					
4. C Behavioral intentions	.20+	-.16	.10				
5. C Prior contact	—	.05	.30**	.01			
6. P ATPD	-.10	.13	.13	.05	-.04		
7. P ATI	-.11	.04	-.05	.04	.07	.67***	

Note. + $p < .10$; * $p < .05$; ** $p < .01$; *** $p < .001$; C = child; P = parent; ATPD = attitudes towards people with disabilities; ATI = attitudes towards inclusion

Table 5. Regression analysis for children's understanding of disabilities, feelings about people with disabilities, and behavioral intentions to include peers with disabilities

Predictor	Understanding		Feelings		Behavioral intentions	
	B	SE	B	SE	B	SE
Child age (months)	0.13+	0.07	0.06*	0.02	0.08	0.06
Child gender	1.72	5.4	3.13+	1.75	1.56	4.48
Child prior contact	0.10	0.25	0.23*	0.09	0.01	0.22
Age X gender	-0.05	0.09	-0.06+	0.09	-0.01	0.08
R ² /F(df)	.08	1.77 (4,88)	.15	3.88 (4,88)**	.06	1.49 (4,88)

Note. + $p < .10$; * $p < .05$; ** $p < .01$

with children's understanding of people with disabilities were significant predictors of their behavioral intentions to include children with disabilities. Table 6 displays the estimates of the predicting variables by the type of disability and context. Children who had higher level understanding of people with disabilities were less likely to make inclusion decisions in an activity where disabilities interfered than in an activity where disabilities did not interfere. Children who had higher level understanding of people with disabilities were less likely to express intentions to include a child with a visual impairment in an activity than a child with a motor disability. None of the other predicting variables (child age, gender, children's prior experience with people with disabilities, and feelings about people with disabilities) were related to children's behavioral intentions to include peers with disabilities.

Children's Attitudes towards People with Disabilities Predicted by Parental Factors

We investigated the role that parental factors (e.g. parents' attitudes towards people with disabilities and inclusion, and parents' education level) played in predicting children's understanding of, feelings about people with disabilities, and behavioral intentions to include peers with disabilities using multiple regression analyses. None of the parental factors were related to any dimensions of children's attitudes towards people with disabilities. However, several statistically significant associations were found among the parental factors. Parents' attitudes towards inclusion were positively associated with their attitudes towards people with disabilities [$r(94) = .71, p < .001$] and their education level [$r(94) = .25, p = .02$].

Table 6. Repeated ANCOVA for children's behavioral intentions to make inclusion decisions with child age, gender, prior contact, and understanding of and feelings about people with disabilities

Variable	Motor disability						Visual Impairment					
	Interfering activity			Non-interfering activity			Interfering activity			Non-interfering activity		
	B	SE	η_p^2	B	SE	η_p^2	B	SE	η_p^2	B	SE	η_p^2
Intercept	.46	.74	.005	.46	.62	.006	1.00	.71	.023	1.41*	.68	.049
Age	.02	.01	.025	.02	.01	.030	.01	.01	.015	.00	.01	.002
Gender ^a	-.10	.18	.003	-.16	.15	.013	-.27	.18	.027	-.28+	.17	.033
Prior contact	.00	.07	.000	-.04	.06	.005	.02	.07	.001	-.05	.06	.006
Understanding	-.07*	.03	.055	.01	.03	.004	-.09*	.03	.110	-.06*	.03	.057
Feelings	.07	.09	.007	.11	.07	.026	.07	.08	.010	.16+	.08	.045

Note. + $p < .10$; * $p < .05$; η_p^2 = Partial eta squared effect size; ^aReference group is composed of boys.

DISCUSSION

The current study makes several unique contributions to the literature of young children's attitudes towards people with disabilities and early childhood inclusion: (i) We examined multiple dimensions of preschool children's attitudes towards people with disabilities in relation to their prior contact with people with disabilities as well as parental factors; and (ii) responses were obtained from multiple and direct sources of information. Overall, the participating children had less than a basic level of understanding of disabilities unlike previous studies suggested (e.g. Conant & Budoff, 1983; Diamond et al., 2008). The discrepancy may have resulted from differences in a way that children's understanding of disabilities was measured (Goodman, 1990). More specifically, the current study used more open-ended questions than other studies as well as simple, closed-ended questions to elicit more in-depth responses with richer information. Although responses to open-ended questions may be affected by children's verbal and cognitive abilities, we might have had a wider range of responses than previous studies.

Consistent with previous literature (e.g. Favazza & Odom, 1997; Magiati et al., 2002), children's understanding of disabilities seems restricted to features that are associated with adaptive equipment such as wheelchairs and visual aids. It may be that disabilities are not as obvious or observable as gender or race in surroundings. On the other hand, it may reflect the children's limited cognitive skills and preoperational thinking that are frequently illogical, perception-based, and easily distracted by salient features of objects and people's appearance (Piaget, 1970). Children provided more empathy-driven responses to the questions asking about their feelings about people with disabilities, which is somewhat inconsistent with previous research that showed the attitudes children form in early years were typically not favorable towards people they perceived as different from themselves (Favazza & Odom, 1997; Sale & Carey, 1995).

The Multidimensional Nature of Children's Attitudes towards People with Disabilities

Our hypotheses about the associations among the three dimensions of children's attitudes towards people with disabilities was partially supported as there was a significant association between children's understanding of disabilities and their feelings about people with disabilities. This result can be interpreted in two ways: (i) the better children understand disabilities, the more likely they are to have positive feelings about people with disabilities; or (ii) as children have more positive feelings about people with disabilities, they are more likely to get to learn about disabilities. This finding is somewhat consistent with prior literature that suggested that the understanding of another group of people might promote positive feelings about the group (e.g. Katz & Chamiel, 1989; Okagaki et al., 1998). However, children's behavioral intentions to include peers with disabilities in their play were related neither to their understanding of disabilities nor to their feelings about people with disabilities. Our speculations include that the three dimensions of attitudes may not have yet been fully integrated but begin emerging at these young ages (Guralnick et al., 1996).

Prior Contact with People with Disabilities

The significant association between children's feelings about people with disabilities and their prior contact with people with disabilities is related to findings of previous studies

that showed a significant relation between frequent contact with people with disabilities (or contact with more peers with disabilities in different contexts) and children's positive attitudes towards them (e.g. Diamond, 2001; Favazza & Odom, 1997; Vignes et al., 2009). This association stayed significant, even after controlling for children's age and gender. In the current study, prior contact was measured by gathering the information about the number of people with whom children have prior contact on a somewhat regular basis. Therefore, what this result suggests would be that the more intensive and regular contact children have with people with disabilities, the more positively children may feel about people with disabilities.

Inconsistent with previous studies, we found no association between children's prior contact with people with disabilities and their understanding of people with disabilities or their behavioral intentions to include peers with disabilities after controlling for the child's gender and age. It seems that having contact with more people with disabilities does not automatically lead to better understanding of them or build more positive behavioral attitudes towards people with disabilities in young children although it was linked to more positive feelings about people with disabilities.

Activity Contexts and Types of Disabilities

We hypothesized that typically developing preschool children's behavioral intentions to make inclusion decisions in hypothetical situations would be associated with the demand of the activity context (i.e. whether or not the disability interferes with the activity) as well as the types of disabilities. According to our findings, understanding of disabilities prevented children from making inclusion decisions when the disability interfered with the presented activity. Unlike the findings from previous studies (e.g. Diamond & Hong, 2010; Diamond & Tu, 2009; Nabors & Keyes, 1997; Nowicki & Sandieson, 2002) where the demand of activity was a significant main effect of children's inclusion decisions, the activity context itself did not predict children's intentions to include or exclude a peer with disabilities. It was the level of children's understanding of disabilities that had a moderating effect. From previous studies, we knew that the demand of activity contexts mattered in children's inclusion decisions; however, to understand the demand of activity contexts, children should be able to use their understanding of disabilities (e.g. what a child in a wheelchair can and cannot do in certain activity context) and their understanding of the contexts at the same time. This study provides the more complicated nature of children's behavioral intentions to include a peer with a disability. Very similarly, children's understanding of disabilities played a moderating role in the association between the types of disabilities and their behavioral intentions to include or exclude a peer with disabilities – Children were more likely to make inclusion decisions for a hypothetical peer in a wheelchair than the one who is blind when they had a higher level understanding of disabilities, which may reflect children's implicit understanding that children with a visual impairment may have more difficulties participating in classroom activities than a child with a motor disability. This is also somewhat consistent with the findings of a recent study that showed that children's perception about disabilities and the capability of a peer with a disability might influence their inclusion decisions especially when an activity seemed to require certain levels of specific skills (e.g. Diamond & Hong, 2010). Children may have thought that a hypothetical peer with a visual impairment might not have skills needed to participate in many of the activities presented in the vignettes.

Parents' Attitudes towards People with Disabilities and Inclusion

Overall, parents' attitudes towards people with disabilities and inclusion were very positive, although the data were not extremely skewed. As many rating scales asking about individuals' attitudes, items included in these two measures may have been answered in socially desirable ways. Although we hypothesized that children's feelings about people with disabilities and their behavioral intentions to make inclusion decisions would be related to how their parents perceive people with disabilities (e.g. Castelli et al., 2007), we did not find a significant relation. This nonsignificant association might be partly due to the fact that the different measures and concepts of attitudes were used for children and parents. For example, while we considered three dimensions of attitudes for children using a variety of interview questions, parents self-reported their general attitudes towards people with disabilities and inclusion. Data on parents' behavioral attitudes (i.e. what they say about how they would interact with people with disabilities) were missing in the overall picture of our study.

Our speculations also include that, as Castelli et al. (2007) found, it may be useful to make the distinction between parents' explicit and implicit attitudes. In their study, parents' attitudes that were implicitly expressed to children were not significantly related to their children's attitudes towards people of other races, whereas parents' attitudes explicitly expressed were meaningfully associated with their children's attitudes. Parents might not directly and explicitly discuss this topic or not know how to discuss it with their preschool children, which may also contribute to children's low levels of understanding of people with disabilities. Children may be influenced by parental attitudes towards people with disabilities only when the attitudes are explicitly expressed and modelled or when the children are told about the topic by their parents. This seems to be related to the findings of previous research, which show child age moderates the associations between parents and children's attitudes towards disabilities (e.g. Rosenbaum et al., 1988), that is, as children get older, their attitudes become more similar to those of their parents (Roberts & Lindsell, 1997).

Limitations and Future Directions

This study has several limitations that ought to guide future research. First, the current study adds more to the literature by investigating three dimensions of attitudes in relation to children's personal and parental factors. However, it is limited in that it is still an analog study and does not directly measure neither children's nor parents' actual behavior. For example, although children's behavioral intentions to make inclusion decisions (behavioral attitudes) may relate to their actual behavior towards peers with disabilities, we did not examine this relation. What children reported that they would do in hypothetical situations may provide an entirely different picture from what they actually do in early childhood inclusive classrooms. Therefore, future studies will need to focus on how young children actually act when they have opportunities to interact with peers with disabilities as well as on how adults react to the opportunities where they can support social interactions with children having disabilities. A detailed observation of typically developing children's behavior accompanied by interviews about their attitudes would help us better understand the nature and the context of social interactions in inclusive classrooms in addition to associations between their understanding of, attitudes towards, and actual interactions with peers with disabilities.

Second, both children and their parents reported the children's prior contact with people with disabilities. However, the nature (i.e. quality) and frequency (i.e. quantity) of the contact were not reported. Since our results showed that the number of people with disabilities within the scope of the child's life was significantly related to the child's understanding of people with disabilities, we are curious about what it really was that helped children build the level of understanding. In future studies, investigating both the quality and quantity of the relationships with people with disabilities may tell us a more accurate story than just the number of possible instances where children may encounter people with disabilities.

Third, regarding questions asked about children's feelings about people with disabilities, it is possible that one of the questions may have provided implicit expectations to children. For example, asking children if they are afraid of people with disabilities may have presented a scenario, which might not have previously occurred to them. The PSSHP measure was developed in 1983, and that was the time when inclusion was rare. Also, children were much less likely to encounter a child with a disability then (i.e. in person, on television, or in books). Even after reframing many of the questions, there may still be these subtle negative connotations that might have been imposed on children. Although we included another question that asked about children's general feelings about people with disabilities, future research endeavor would be needed to develop more valid and multifaceted measure to assess children's general feelings about people with disabilities.

Finally, the scope of the current study is limited to one parent's attitudes as a contextual correlate of children's attitudes towards disabilities. Collecting information from other significant adults (e.g. teachers and fathers) and including additional mediating factors, such as media and cultural and religious beliefs (e.g. Roberts & Lindsell, 1997), would enable us to give a more complete understanding of children's attitudes towards people with disabilities. Triandis, Adamopoulos, and Brinberg (1984) suggest that attitudes are influenced by direct experiences, indirect experiences, and significant others, and there are studies that show indirect experiences are successful in improving children's attitudes.

Implications for Practice

Results of the current study provide some implications for early childhood education and interventions. Even young children have limited but some rudimentary level of understanding of disabilities, and their understanding becomes more concrete as they get older. As children have more intense and regular contact with people with disabilities, they may feel more positive about people with disabilities. In other words, young children may benefit from having more frequent contact with people with disabilities and more opportunities to learn about them in order to develop positive attitudes towards their peers with disabilities. Given the data that show the lack of understanding that preschool children have of people with disabilities and previous research that indicates attitudes of young children can be improved through more social contact with people with disabilities (e.g. Favazza & Odom, 1997), these could be an area for early childhood interventions and a component of professional development.

It also seems to be important for children to understand disabilities within specific activity contexts. Different activities require different skills and knowledge, and when children understand that a child in a wheelchair can still roll a ball (although she or he cannot kick a ball), that understanding may enable children to be more creative about learning together with their peers with disabilities.

Finally, even though we did not collect data on how children learned about disabilities, there is evidence that children acquire knowledge of disabilities from various sources that make independent contributions to children's understanding about disabilities (Vignes et al., 2009). While older children who may be more active information seekers appeared to use media and books as a main source of information (Vignes et al., 2009), younger children may depend more on adults to obtain information. Although we did not find a significant association between parents' attitudes and children's attitudes towards disabilities, this finding would not necessarily imply that parents do not play an important role in children's attitudes towards peers with disabilities. The role of adults – especially parents – may still be important in early years when children's attitudes towards others emerge and are malleable to change. By initiating discussions about people with different ability levels in an explicit way, adults may be able to enhance even young children's understanding, acceptance of, and feelings about peers with disabilities and eventually promote children's social skills. They also can provide children with useful information about people with disabilities (e.g. characteristics and capabilities of children with disabilities) in order to help children gain positive feelings about people with disabilities. When children have positive feelings about people with disabilities, they may become more curious about people with disabilities. Given the findings of this study and previous literature that show children's emerging understanding of people with disabilities and the malleability of their attitudes in early years, we suggest that it is never too early to discuss and teach about people with disabilities at home and in the classroom.

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APPENDIX

SAMPLE QUESTIONS OF HYPOTHETICAL VIGNETTES

1. Kicking a ball with peers

A child in a wheelchair:

Look at this picture. Let's pretend that you are playing with other children on the playground. You are kicking a ball with other children. Here is [hypothetical child's name]. S/he is in a wheelchair because s/he cannot walk. He wants to play with you. S/he said, 'Can I play with you?' What would you say to [hypothetical child's name]? Why?

A child who cannot see:

Look at this picture. Let's pretend that you are playing with other children on the playground. You are kicking a ball with other children. Here is [hypothetical child's name]. S/he uses this cane because s/he cannot see. S/he wants to play with you. S/he said, 'Can I play with you?' What would you say to [hypothetical child's name]? Why?

2. Singing with peers

A child in a wheelchair:

Look at this picture. Let's pretend that you are playing with other children. You are singing and listening to the music with other children. Here is [hypothetical child's name]. S/he is in a wheelchair because he cannot walk. S/he wants to play with you. S/he said, 'Can I play with you?' What would you say to [hypothetical child's name]? Why?

A child who cannot see:

Here is [hypothetical child's name]. Look at this picture. Let's pretend that you are playing with other children. You are singing and listening to the music with other children. Here is [hypothetical child's name]. S/he uses this cane because s/he cannot see. S/he wants to play with you. S/he said, 'Can I play with you?' What would you say to [hypothetical child's name]? Why?