Brief Report: Preschoolers' Social Preferences for Interacting with Peers with Physical Differences

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Investigated preschoolers' playmate preferences for line drawings of a physically normal child, one with a facial scar, one wearing a leg brace, and one sitting in a wheelchair for several contexts: classroom, eating, reading, television, and playground. Differences in preferences for age, gender, ethnic group, and context were investigated. No gender differences were found. African American children were more accepting of a child seated in a wheelchair than Caucasian children. Very young children had limited understanding of the impairments. Also, the children were less likely to express preferences for the children with orthopedic impairments for the playground context. Interventions involving typically developing children and peers with impairments in play that does not require motor activity may enhance the acceptance of children with orthopedic impairments.

KEY WORDS: preschoolers' social preferences toward impairments; orthopedic impairments; young children's attitudes toward disability.

Preschool-age children are aware of similarities and differences between themselves and other children who are physically different (Diamond, 1994; Sigel-

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Young children typically have reported lower preferences for interacting with adults and other children with visible physical disabilities (Cohen, Nabors, & Pierce, 1994; Jones & Sisk, 1970; Sigelman et al., 1986). Social preferences are a component of attitudes, which are composed of several channels including cognitive, affective, and behavioral responses toward others (Triandis, 1971). For this study, our main purpose was to examine young children's cognitive understanding of and affective responses toward peers who had physical impairments. Thus, we examined children's social preferences for line drawings of a peer seated in a wheelchair, wearing a leg brace, with a facial scar, and a physically normal child for several hypothetical contexts: classroom, eating, reading, television, and playground. Hypothetical situations, like these, are one method for assessing young children's attitudes (Mize & Ladd, 1988; Weidman & Strayhorn, 1992).

Preschool-age children's awareness of functional limitations may influence their preferences for interacting with individuals with physical impairments in situations requiring motor activity (Cohen et al., 1994; Nabors & Morgan, 1993; Popp, Fu, & Warrell, 1981). Cohen et al. (1994) assessed preschool-age children's social preferences toward a physically normal adult, one with an arm sling, and one seated in a wheelchair across two contexts. They found that preschoolers reported liking to play sports with the physically normal adult more than the other two. They did not report clear preferences for reading, an activity with low physical activity requirements. Similarly, Popp et al. (1981) reported that the preschool-age children in their study preferred to play with a physically normal child rather than a child in a wheelchair for several activities: throwing a ball, hopping, playing, riding a tricycle, reading a story, or having a cookie together. They reported that the children's preferences were not as strong for whom they would like to have a cookie with or read a story with than for the activities requiring higher levels of physical involvement. Information is available on younger children's cognitive, affective, and behavioral reactions to adults (Cohen et al., 1994; Nabors & Morgan, 1993) and other children (Perlman & Routh, 1980) who are seated in wheelchairs. Less is known about young children's social preferences for peers with other types of impairments across different contexts.

We assessed preschoolers' social preferences toward peers with different physical impairments presented through line drawings. Children, who were physically normal, ranked their social preferences among line drawings of a child wearing a leg brace, a child seated in a wheelchair, a child with a facial scar, and a physically normal child. The latter two line drawings represented children without physical limitations. The former ones depicted a high and low level of orthopedic impairment. Children ranked their preferences for whom they would like to play with during specific activities (i.e., play with in the classroom or on
They also ranked their general preference for whom they liked the best among the four line drawings. Findings from previous research provided direction for our research questions (Cohen et al., 1994; Sigelman et al., 1986; Popp et al., 1981). Questions of interest were (a) Do preschool-age children report preferring to play with a physically normal child rather than the ones with physical impairments, irrespective of gender, age, or ethnic group?; (b) Are there gender, age, or ethnic group differences in playmate preferences for children with different types of physical impairments?; and (c) Do the children's responses vary across contexts and does degree of impairment influence these responses? Specifically, do children show a greater preference for peers presented without motor impairments (i.e., with facial scar or physically normal) than for peers presented with motor impairments (i.e., seated in a wheelchair or with a leg brace) in the playground context, which typically requires motor activity, as compared to other contexts, which do not always require motor activity?

METHOD

Participants

Parental consent and child assent were prerequisites for participating. Participants were 50 boys and 49 girls, between 2 years 11 months and 6 years 5 months ($M = 4$ years 7 months). The ethnic group representation across all classes was about 80% Caucasian and 20% African American children. Eight boys and 9 girls were African American. Three were younger than four, 11 were four, and 3 were five or older. Forty-one boys and 41 girls were Caucasian. Twenty-three were younger than four, 30 were four, and 29 were five or older.

The children were enrolled in 1 of 15 inclusive preschool classrooms. There was an average of 17 children per class and 2 or 3 of these children had disabilities. Children with disabilities were in the same age range as the typically developing children. They had different types of impairments including general developmental delays, Down syndrome, mental retardation, epilepsy, autism, cerebral palsy, speech and language delays as well as visual, motor, and hearing impairments (none had facial scars, used wheelchairs, or wore leg braces). Most of the children with general developmental delays were being evaluated to determine a formal diagnosis before entering kindergarten. Several attempts were made to elicit responses from the children with disabilities; however, only a few partially completed interviews. Those with cognitive or speech and language delays had more difficulty understanding and responding during the interview. The interviewers were two Caucasian females, ages 20 and 30.
Materials

Line Drawings. The children ranked their preferences for line drawings of a physically normal peer, one with a facial scar, one with a leg brace, and one sitting in a wheelchair. Line drawings and the ranking technique were adapted from research conducted by Richardson (1970; Richardson, Goodman, Hastorf, & Dornbusch, 1961). Line drawings were in color; therefore, all males and females had the same color clothes, eyes, and hair. The line drawings were matched for each child’s ethnic group and gender, because research has shown that children indicate preferences for peers of the same ethnic group and gender (Maccoby, 1988; Ramsey & Meyers, 1990).

Context Questions. We used five questions to assess children’s preferences across contexts. The questions were similar to those used in previous research (Cohen et al., 1994; Harper, Wacker, & Seaborg-Cobb, 1986; Popp et al., 1981). Questions began with the phrase, “Who would you like to _____ the most?” and then interviewers added one of five phrases, “play with in your classroom, play with on the playground, read with, invite to your house to watch television with, and eat lunch with at school.”

Procedure

Interviewers spent some time playing with individual children in their classroom to establish rapport. Interviews were conducted in rooms adjacent to the classrooms. Before data collection began each child was told that he or she could stop the interview and return to class at any time. Interviews began with showing the child each of the line drawings. Then, the interviewer placed them in front of the child in a predetermined, random order from the child’s right to left. For each question, she asked the child to indicate which line drawing that he or she would “Like to _____ (context question) the most.” After the child indicated a first choice, the line drawing was removed. The question was repeated two more times, so the child could indicate a second and third choice. This technique was repeated for the four remaining context questions.

Questions were administered in a randomly assigned, counterbalanced order. After the child answered the third question, the interviewer reversed the order of presenting the line drawings, by placing them in the same order from the child’s left to right. Harper et al. (1986) reported that this procedure minimized response bias. After responding to the context questions, each child was asked “Who do you like the best?” The same ranking technique was used to record preferences.

Children also completed a manipulation check to assess their understanding of the three disabilities. The interviewer showed the child the line drawing of the
child sitting in the wheelchair and asked, “What is this child sitting in?” and “Can he or she walk?” Next, while looking at the child with a leg brace each child was asked, “What’s wrong with this child’s leg?” The interviewer also asked children about the facial scar by pointing to the scar and asking, “What is this?”

Data Analysis Plan

We used Friedman’s ($T_2$) tests to assess children’s preferences among the line drawings for each question for three demographic groups: gender, age, and ethnic group. Kendall’s Coefficient of Concordance ($W$) was used to examine agreement in their rankings. Then, we investigated differences in first choice preferences for the demographic groups for each question and examined whether gender, age, and ethnic group influenced rankings using chi-square tests. Next, we examined whether the children’s rank order of the line drawings differed for the context questions using a repeated measures MANOVA. For the manipulation check questions, we used the Cochran-Mantel-Haenszel statistic (CMH) to investigate the children’s understanding of the impairments by gender and ethnic group, while controlling for differences by age group.

RESULTS

Demographic factors did influence the children’s rankings. For instance, boys and girls showed a significant preference for at least one of the line drawings for the like best, playground, reading, and eating questions ($T_2 \backslash W, p \leq .05$). Additionally, both typically reported a first choice preference for the physically normal child and a last choice preference for the child seated in a wheelchair for the playground, television, and eating contexts ($\chi^2, p \leq .05$). Boys and girls ranked the line drawings differently for the like best question ($\chi^2, p \leq .05$). Both boys and girls still ranked the physically normal child as a first choice; however, boys usually ranked the line drawing of the child seated in a wheelchair last, whereas girls ranked the child wearing a leg brace last.

Age differences in rankings were considered for three groups: 5 and older, 4 years, and younger than 4. Children in the two older age groups indicated a preference for at least one of the drawings for three of the context questions and the like best question ($T_2 \backslash W, p \leq .05$). Those who were younger than 4 did not

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3 For the sake of brevity, all findings were not reported. Rankings for the stimulus pictures were from 1 to 4. First choice mean ranks were closer to 1 and last choice mean ranks were closer to 4. All of the standard deviations for the mean ranks within groups were between 0.8 and 1.3. Contact Laura Nabors to request additional information.
report preferences among the line drawings, except for the reading context \((T2\, W, p = .03)\).

Differences in preferences by age group were evident for the context questions. Children 5 years and older ranked the line drawing of the physically normal child first and the one seated in the wheelchair last for all contexts \((\chi^2, p \leq .001)\), except the classroom. Four-year-olds preferred the line drawing of the physically normal child first as someone to eat with \((\chi^2, p \leq .05)\), whereas those younger than 4 preferred the physically normal child as a play partner in the classroom \((\chi^2, p \leq .05)\).

Children in the two older age groups selected the line drawing of the physically normal child first for the like best question \((\chi^2, p \leq .001)\). Children younger than 4 made significantly different rankings than the other two age groups for this question \((\chi^2, p = .002)\); they often selected the child with a facial scar as a first choice.

African American children did not indicate significant preferences or preferred first choices for any question. Caucasian children indicated significant preferences for all questions \((T2\, W, p \leq .01)\). They preferred the line drawing of the physically normal child for all of the questions \((\chi^2, p \leq .001)\), except the classroom context. African American children preferred the child seated in a wheelchair as a first choice for the reading and like best questions, whereas Caucasian children typically chose the physically normal child for these questions \((\chi^2, p \leq .01)\).

**Context Effects**

Children ranked the line drawings in a different order for at least one of the context questions, indicating an interaction between the contexts and the line drawings; Wilks's lambda, \(F(12, 733.16), p = .05\). Follow-up \(F\) tests, allowing for pairwise comparisons of the contexts, revealed that the children's mean rankings of the line drawings for the playground context (high motor involvement) were significantly different from their rankings for the classroom, eating, and television questions (low motor involvement), \(F(3, 280), p \leq .05\). Children's rankings for the playground, as compared to other contexts requiring lower levels of motor activity, indicated stronger preferences for the physically normal child and the one with a facial scar than for the child seated in a wheelchair.

**Spontaneous Comments**

Forty-one percent of the children in the study made spontaneous comments. They usually made one or two comments, but 10% of the children made three or more comments. Typically, individual children limited their comments to one of
the line drawings. Each line drawing elicited an approximately equal number of spontaneous comments. Children younger than 4 years made fewer comments (20%) than those who were 4 years (44%) or 5 years and older (36%). Caucasian children (76%) made more comments than African American children. This was expected, because more Caucasian children were interviewed, especially in the 5 and older age group.

Two raters categorized the children's comments into seven categories. Interrater agreement by category was in the excellent range (.80 and higher; Fleiss, 1981). The seven categories were questions about the origin of an impairment (15%), explanations of why a child was hurt (24%), remarks about how a child with an impairment was different from the physically normal child (5%), remarks about the functional limitations faced by a child who was impaired (24%), comments showing a desire to help one of the children with impairments (10%), comments about the facial scar being ugly (7%), or idiosyncratic comments, usually about personal experiences with someone with a disability (15%).

**Manipulation Check**

Sixty-four percent of the Caucasian children were able to provide the name for a wheelchair, while only 27% of the African American children were able to do so (CMH, \( p = .002 \)). A majority of the children in both ethnic groups, irrespective of age group, were equally likely to report that the child in the wheelchair was unable to walk and identify the leg brace and the facial scar. There were no gender differences for any of the manipulation check questions.

Further, children who were 4 years or older identified the impairments and understood the limitations for the child seated in a wheelchair more often than children younger than four (CMH, \( p = .05 \)). Only 27% of the children younger than four identified the wheelchair by name and 42% thought that the child in the wheelchair could walk. And, 57% of those younger than 4 correctly identified the leg brace and the facial scar. In contrast, a majority of the children 4 years and older could identify the wheelchair, leg brace, and facial scar and understood the functional limitations faced by the child seated in a wheelchair and the one wearing a leg brace (over 75%).

**DISCUSSION**

The present findings indicate that there may be differences in children's preferences for interacting with children who have orthopedic impairments based on their age and ethnic group. Although we expected gender differences, boys and girls tended to report similar preferences for playing with a physically normal child rather than with children with orthopedic impairments (i.e., wear-
ing a leg brace or sitting in a wheelchair) or with a child with a facial disfigure-
ment, irrespective of the context in which the impairments were considered. Our
results extend findings from previous research (Cohen et al., 1994; Nabors &
Morgan, 1993; Popp et al., 1981) by showing that very young children are more
likely to report preferring to play with a physically normal child rather than with
one seated in a wheelchair on the playground, a context typically requiring a high
level of motor activity, than for settings with lower activity requirements (i.e.,
being in the classroom, eating lunch, reading, or watching television together).
Thus, children appear to be influenced by the functional demands of the situation
when reporting their playmate preferences (Strohmer, Grand, & Purcell, 1984).
Therefore, interventions and activities designed to lessen physical activity re-
quirements for preschoolers with physical impairments may increase their accep-
tance by physically normal peers.

Children who were African American tended not to prefer any one line
drawing over another, while those who were Caucasian often ranked the line
drawing of the physically normal child as a first choice across contexts. On
average, the African American children were younger than the Caucasian chil-
dren and this could have accounted for their different views. Moreover, only a
small group of African American children were interviewed. Further research is
needed to examine the social preferences between physically normal peers and
those with impairments for children of color.

Our results suggest that older preschool-age children had a greater under-
standing of orthopedic impairments and their subsequent limitations than young-
er preschoolers. This probably was related to their not selecting a child with such
impairments as a play partner. It may be beneficial for older preschool-age
children to interact with peers who have orthopedic impairments in activities that
do not pose functional limitations, such as playing computer or board games
(Harper et al., 1986). Such interactions may allow for freer interchange and more
positive interactions among children with and without orthopedic impairments.

When making comments, children often described why a child with an
impairment was hurt or discussed the functional limitations he or she might face.
At times they discussed personal experiences about interactions with someone,
usually a peer or family member, with a disability. In general, we found that
many of the children were inquisitive about, held positive attitudes toward, or
expressed an understanding of the functional limitations faced by peers who were
physically different.

One strength of this study was that we used controls to ensure internal
validity (e.g., using same gender and ethnic group line drawings). Some limita-
tions may be placed on generalizability, however, because we did not assess
children's actual interactions with peers who had impairments. Future research
may profit from observing young children's conversations with and behaviors
toward peers with impairments during classroom and playground interactions.
Concordance between self-report and behavioral observations could then be examined to determine the utility of the results of structured interviews in this type of research. This will increase the external validity of research findings and provide information for developing interventions to increase acceptance of peers with impairments by typically developing children. Nevertheless, understanding young children's cognitive and affective reactions remains important, because their social preferences may mediate their behavior during social exchanges with peers who have disabilities.

Results of this study illustrate the need to consider age and ethnic group differences when evaluating young children's attitudes toward peers who have impairments. Furthermore, the results motivate ideas for practical applications and future research. Specifically, the implication that African American children may be more accepting of children with orthopedic impairments needs to be explored. Additionally, findings that very young preschoolers have limited understanding of impairments suggests they may benefit from more education about the strengths of and limitations faced by peers with orthopedic impairments.

Finally, our results demonstrate that preschoolers may be less likely to express social preferences toward children with orthopedic impairments in situations in which their ability to participate is limited (e.g., on the playground). Thus, interventions that involve children in cooperative activity that does not require motor involvement may enhance the acceptance by typically developing peers of preschoolers who are physically limited.

REFERENCES


