

Building Knowledge and Positive Attitudes as a Basis for Social Acceptance for Children with Cochlear Implants

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This brief examines the effectiveness of a peer education intervention to build typical peers' knowledge and positive attitudes to support the social acceptance of children with cochlear implants (CIs). Social acceptance is the extent to which a child can successfully initiate and maintain reciprocal relationships with his or her peers. Low social acceptance is often characterized by feelings of not fitting in or being left out (Punch & Hyde, 2011). If experienced early in life, low social acceptance often relates to lasting poor self-esteem and social isolation (Nicholas & Geers, 2003; "Peer acceptance," 2012; Stinson & Whitmire, 2000).

Children with differences, broadly defined, are at greater risk for low social acceptance than typical children ("Peer acceptance," 2012; Whitney, Smith, & Thompson, 1994). CIs are a highly visible difference because they are medical devices worn on the head and ear that create a representation of sound for a person who is profoundly deaf or hard of hearing. In addition to this difference in appearance, children with CIs may have speech and language challenges that impede conversation with their peers, especially in group settings (Punch & Hyde, 2011; Rimmel & Peters, 2009; Schorr, Roth, & Fox, 2009). In short, children with CIs are at risk of low social acceptance because of the visible appearance of a CI and associated communication delays, which may differentiate them from their peers.

Peer education builds social acceptance of children with differences by increasing peers' accurate knowledge, positive attitudes, and intentions to act in socially inclusive ways. To do so, peer education interventions generally provide age-appropriate information about the cause and

effect of a child's difference and concrete strategies for peers to interact effectively with the child. The approach of building social acceptance by changing knowledge, attitudes, and intentions has demonstrated effectiveness for children with a variety of physical, mental, and medical differences, such as cancer (Goodell, 1984), Tourette Syndrome (Holtz & Tessman, 2007), autism (Campbell, Ferguson, Herzinger, Jackson, & Marino, 2004), and physical disabilities (Fredrickson & Turner, 2003).

The Cochlear Implant School Toolkit

The peer education intervention is one component of a National Institutes of Health-funded "CI School Toolkit." Taken in total, the Toolkit has three components for three audiences: 1) Print guide and website that aims to train parents of a child with a CI in strategies to prepare the child and personnel at his or her school for meaningful inclusion in a supportive classroom; 2) Print guide and website that provide teachers of a child with a CI with information on CIs and classroom management and teaching strategies to support the child; 3) Peer education intervention that includes a DVD and lesson plan with information to build more knowledge, positive attitudes, and intentions to act in socially inclusive ways in the typical classmates of a child with a CI.

Entitled *Making Sense of Our Senses*, the peer education intervention consists of an 8-minute DVD and structured classroom lesson implemented by the classroom teacher that defines and describes a CI and hearing loss and encourages typical peers to act in socially

inclusive ways, such as sitting next to the child with a CI on the bus, partnering with a child with a CI on a school project, and playing with a child with a CI at recess. To our knowledge, this peer education intervention and its evaluation are the first of their kind specific to CIs, and are timely as increasing numbers of children with CIs attend mainstream schools in typical classrooms (NIDCD, 2011).

The Toolkit components can be used individually or in combination. Thus, we executed a four-study evaluation. The first three studies explored the effectiveness of each component independently. The fourth study examined the effect of the Toolkit components when used together. This brief presents the results of the study on the independent effect of the peer education intervention.

Research questions and methodology

The primary research question is the extent to which exposure to the *Making Sense of Our Senses* peer education intervention (the intervention) increases accurate knowledge, positive attitudes, and intentions to act in socially inclusive ways among typical peers, defined as children who are not disabled. We used a two-group, pretest/post-test quasi-experimental design to explore the research questions. We recruited four public schools, with two “naïve” second grade classes each, within a 50-mile radius of Atlanta, Georgia, to participate in the study. This strategy yielded eight total classrooms. In this case, a naïve classroom is one without a child with a CI. We selected naïve classrooms to limit preconceptions, because ongoing exposure to people with disabilities relates to more positive attitudes. We implemented the intervention in second grade classrooms for two reasons. First, younger children have attitudes that are more easily influenced than older children (Ladd, Price, & Hart, 1990) and, without intervention, attitudes toward differences tend to become more negative as children age (Wetstein-Kroft & Vargo, 1984). What is more, second grade may represent a critical period for peer education interventions. By third grade, low social acceptance becomes a powerful predictor of adult mental health issues, so intervening with peers before this occurs is critical (Cowen et. al., 1973).

We randomly assigned schools to the control or the experimental groups. Both classes at a school were assigned to the same group. Of the two schools in the experimental group, one was 83 percent white with a 24 percent free or reduced school lunch rate and one was 58 percent white with a 70 percent free or reduced school lunch rate. Of the two schools in the control group, one was 62 percent white with a 56 percent free or reduced school lunch rate and one was 73

percent white with a 79 percent free or reduced lunch rate. All schools were located in rural areas.

Participants in the study included typical peers with parent consent. We exposed participants in the experimental group to the intervention and participants in the control group to an educational, science-based DVD from the National Science Foundation (NSF) with no content about CIs or social acceptance. In total, 131 second graders participated in the evaluation with 61 participants in the experimental group and 70 participants in the control group.

A KDHRC researcher administered the surveys by reading the questions aloud to participants. All participants took a pretest survey that contained eight knowledge questions, four Likert-scale attitude questions, and four Likert-scale intention questions about CIs and children with CIs. The post-test survey, which participants completed after exposure to either the intervention or the NSF DVD, contained the same knowledge, attitude, and intention questions, but participants in the experimental group also received questions about their perceptions of the intervention. After data collection, we manually coded and entered the data into an Excel file. We then cleaned the survey data and analyzed them using univariate, bivariate, and logistical regression procedures in STATA.

There are important limitations to this methodology. The small sample size and homogeneity of participants limits the generalizability of the data, meaning the results cannot be applied confidently to all second graders nationally. Despite this limitation, the data from the sample provide valuable insight into a peer education intervention to increase positive knowledge, attitudes, and intentions to act in socially inclusive ways among typical peers as a basis for social acceptance of a child with a CI in a typical classroom.

Key results

Participants who were exposed to the intervention gained more knowledge about CIs than participants who were not exposed to the intervention.

Indeed, the experimental group had statistically significant improved knowledge scores at post-test compared to the control group on a range of topics. More specifically, between pretest and post-test, participants exposed to the intervention had statistically significantly greater gains in knowledge about CIs’ functionality, including how a CI picks up sound from outside the ear and sends it to the brain, and in concrete social strategies to use with child with a CI, such as how to get the attention of a child with a CI in class, and how close to stand next to a child with a CI when talking to him or her.

Participants who were exposed to the intervention were significantly more likely to report wanting to be friends with a child with a CI.

In general, all participants' attitudes were highly positive at pretest. Nonetheless, the participants in the experimental group were significantly more likely than control group participants to report that they want to be friends with a child with a CI after exposure to the intervention. But perhaps due to the strongly positive attitudes at pretest, other increases in attitudes were not statistically significant.

Exposure to the intervention had no statistically significant affect on participants' intentions to act in socially inclusive ways towards children with CIs.

As with attitudes, the participants' reported intentions to include children with CIs in their social activities were uniformly high at pretest. We observed no impact of the intervention on reported intentions to act in socially inclusive ways towards children with CIs.

Discussion

The evaluation results suggest that the intervention effectively increases typical peers' knowledge about how CIs function, as well as specific practical strategies that peers can use to meaningfully include a child with a CI in their social interactions. The intervention also slightly boosted particular positive attitudes about children with CIs, but had no effect on intentions to act in socially inclusive ways.

Typical peers entered our study with little knowledge about CIs but highly positive attitudes and intentions towards children with differences. This finding is congruent with the literature, which suggests that young children, in general, are highly accepting of differences, but may lack accurate knowledge about specific disorders and diseases (Siperstein, Norins, & Mohler, 2007). After exposure to the intervention, knowledge increased significantly. But with little room to move, only one attitude measure changed significantly, and intentions showed no significant changes.

Nonetheless, we consider the intervention effective, as our results suggest that it builds on children's accepting and inclusive nature by undergirding it with accurate knowledge. The intervention's accurate, age-appropriate information on hearing loss, how a CI works, and the concrete strategies they can use to effectively include the child with a CI in social situations can inform typical peers' behavior in ways that will be maximally supportive for the child with a CI. In this way, the intervention can help typical children interact with children with CIs in more socially inclusive ways that support their particular communication needs.

As the number of children with CIs who are educated in typical classrooms increases, they may face obstacles to social acceptance due to the highly visible nature of a CI and the communication challenges it presents. By effectively building typical peers' knowledge to augment their extant positive attitudes and intentions, the use of the *Making Sense of Our Senses* peer education intervention by teachers may result in more supportive social interactions between typical peers and children with CIs.

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