Empirical Articles

Social Participation of Children and Adolescents With Cochlear Implants: A Qualitative Analysis of Parent, Teacher, and Child Interviews

Renée Punch[1], Merv Hyde*[,2]

[1]Griffith University
[2]University of the Sunshine Coast

Psychosocial factors, including socioemotional well-being, peer relationships, and social inclusion with hearing and deaf peers, are increasingly becoming a focus of research investigating children with cochlear implants. The study reported here extends the largely quantitative findings of previous research through a qualitative analysis of interviews with parents, teachers, and pediatric cochlear implant users themselves in three eastern states of Australia. We interviewed 24 parents, 15 teachers, and 11 children and adolescents. The findings displayed commonalities across the three groups of participants, indicating positive experiences around the children's psychosocial development with their cochlear implants, but also ongoing difficulties communicating in groups of people and problems related to social skills. Some children had little contact with other deaf children (with or without cochlear implants) despite parents and teachers perceiving such contact beneficial. Children attending schools where there were other deaf children valued friendships with both deaf and hearing peers. Adolescence was a particularly difficult time for some as they struggled with feelings of self-consciousness about their deafness and external cochlear implant equipment and worries around friendships, dating, and their future place in the world. Recommendations for practice and further research are made.

Cochlear implants can give access to audition and, often, levels of spoken language communication not otherwise accessible to children with severe or profound deafness. The outcomes of implants in the areas of audition, speech production and perception, and spoken language development have been widely reported. There have been fewer studies into broader

psychosocial outcomes, particularly those reporting how children with implants are faring over time in the areas of psychological well-being and social inclusion, particularly with hearing peers (Thoutenhoofd et al., 2005). However, in recent years, children's social outcomes have begun to receive more research attention. As pediatric cochlear implantation has been proceeding for over 20 years in many countries, it is becoming more possible to report on longer-term outcomes across a wider range of domains related to children's functioning in everyday life at home, at school, and in the community (Beadle et al., 2005; Geers, Tobey, Moog, & Brenner, 2008). The current paper reports findings about children and young people in the area of their social functioning, socioemotional well-being, and social participation with hearing and deaf peers. We use the term "social participation" to refer to the nature and extent of children's engagement in social activities and interactions with peers appropriate to the child's age and environment (Hyde & Power, 2004; Power & Hyde, 2002).

There are concerns that even those deaf or hard-of-hearing children who, with the help of cochlear implants or hearing aids, develop good spoken language and can successfully conduct conversations in optimal conditions may be at a disadvantage in situations that are difficult for them to hear or speechread. This has been termed "social deafness" in some European contexts (Vonen, 2007). It is not used in any audiological or cultural sense and refers to

*Correspondence should be sent to Mery Hyde, School of Science and Education, University of the Sunshine Coast, Maroochydore 4558 QLD, Australia (e-mail: mhyde@usc.edu.au).

difficulties in social interactions involving groups of people or in noisy environments, in contrast to one-to-one interactions, which are generally easier for people who are deaf or hard of hearing to manage. In children and adolescents, social deafness can impede social interactions such as play and conversations with peers. Potential barriers to easy social interactions with hearing peers include not only deaf and hard-of-hearing children's communication difficulties in challenging listening environments but also a misunderstanding on the part of hearing children of these difficulties, and the sometimes inadequate social skills of children who are deaf or hard of hearing (Martin & Bat-Chava, 2003).

Many studies have investigated the social participation and psychosocial well-being of deaf and hard-of-hearing children and adolescents and their hearing peers (e.g., Byrnes, Sigafoos, Rickards, & Brown, 2002; Kent, 2003; Stinson & Liu, 1999). Studies of children based in resource units or classes for deaf students in mainstream schools have found that the children experienced difficulties with social participation with their hearing peers (Charlson, Strong, & Gold, 1992; Stinson & Liu, 1999; Stinson, Whitmire, & Kluwin, 1996). Studies of children educated in general classes with support from itinerant teachers of the deaf have revealed difficulties with social participation and feelings of loneliness at school (Byrnes & Sigafoos, 2001; Byrnes et al., 2002; Eriks-Brophy et al., 2006; Kent, 2003; Kent & Smith, 2006; Most, 2007; Power & Hyde, 2002, 2005). Research investigating the mental health of deaf and hard-of-hearing students in a variety of educational settings has reported higher rates for social problems among deaf and hard-of-hearing children and adolescents (Fellinger, Holzinger, Beitel, Laucht, & Goldberg, 2009) and for peer relationship problems among deaf and hard-of-hearing teenagers (Remine & Brown, 2010) than published norms for hearing students.

Recently, several studies investigating psychosocial aspects, including social inclusion, social functioning, social well-being, loneliness, and quality of life (QOL), of children with cochlear implants have been reported. Many of these studies' findings have reported largely positive social outcomes. For instance, Nicholas and Geers (2003) investigated the social adjustment of 181 children aged 8 and 9 years using parents' ratings on the Meadow-Kendall Social-Emotional Assessment Inventory for Deaf and Hearing Impaired Students (Meadow-Orlans, 1983) and children's self-ratings on a pictorial assessment scale of self-image modified by the researchers for use with children with cochlear implants. Findings from both parents' and children's ratings indicated that the children had good levels of social-emotional adjustment and competence in most areas of everyday life. Bat-Chava, Martin, and Kosciw (2005) conducted a longitudinal study of 29 primary school children before and after receiving cochlear implants. Parents' responses to questions on a standardized psychological measure indicated that implantation appeared to be effective in improving communication and social skills. However, there was considerable variability in functioning between children, with some of the children functioning well below their age level in communication and socialization, even after years of cochlear implant use.

A Danish study reported high levels of social well-being among children with cochlear implants. The researchers used a parental questionnaire to compare the self-esteem and social well-being of 164 children, aged 2–17 years, with cochlear implants with nation-wide data from the same questionnaire for over 2000 normally hearing children in the same age range. The cochlear implant children scored equal to or better than the normally hearing children on all areas of self-esteem and social well-being, including confidence, independence, sociability, and happiness (Percy-Smith, Caye-Tomasen, Gudman, Jensen, & Thomsen, 2008).

However, Dammeyer (2010) found that deaf children, both with and without cochlear implants, had more psychosocial difficulties, as rated on a standardized measure completed by the children's teachers, than a normative population of hearing children. This group of 334 deaf and hard-of-hearing children aged 6–19 years, 92 of whom had cochlear implants, attended schools for the deaf or classes for deaf students within mainstream schools. The children who had low abilities in communication, whether sign language or oral, had significantly more psychosocial difficulties than those whose communication abilities were high. Cochlear implant use was not significantly related to psychosocial difficulties. The author

concluded that good communication, regardless of the modality, substantially decreases the risk of psychosocial difficulties.

Some researchers have used measures of loneliness with children who use cochlear implants. Schorr (2006) measured levels of loneliness among 37 children aged 5–14 years, nearly all of whom were educated exclusively in general education classes. The study found that these children with cochlear implants did not differ significantly from a matched comparison group of hearing children in their feelings of loneliness at school as measured by self-report on the Loneliness Scale (Asher & Wheeler, 1985). A significant relationship between age at implantation and loneliness was found, with higher age at implantation associated with higher loneliness scores. Speech perception and language skills were not found to be mediating factors in this relationship. The author suggested that an earlier age at implantation might provide children with feelings of "belonging and inclusion in their school settings in a similar manner as the participants with normal hearing" (p. 375). Children who received their cochlear implants at later ages may take longer or find it more difficult to reach a feeling of belonging at school.

Leigh, Maxwell-McCaw, Bat-Chava, and Christansen (2009) also investigated loneliness, along with other psychosocial factors such as self-esteem, social functioning, and satisfaction with life. The researchers compared deaf adolescents with and without cochlear implants, using standardized, published measures completed by parents, teachers, and the adolescents themselves. They found no differences between the two groups on the psychosocial variables and suggested that the use of cochlear implants per se does not significantly affect psychosocial functioning.

Researchers have also used measures of health-related QOL with children who have cochlear implants. QOL is a multidimensional construct embracing physical, mental, and social functioning that has relevance to children's social well-being. Recent studies using QOL instruments have found few differences between children and adolescents with cochlear implants and hearing children on their ratings of QOL. Loy, Warner-Czyz, Tong, Tobey, & Roland (2010) used both parental and child report on a generic QOL instrument to measure QOL among 88 children. They found no significant difference between overall QOL and norms for hearing peers in either their younger (aged 8–11 years) or older (aged 12–16 years) group of children with cochlear implants. However, the older group rated their QOL less positively than normally hearing peers on the *friends* subscale of the instrument. The researchers also found that the younger group rated QOL more positively than the older group and suggested that these differences may be related to the pressures of adolescence to which the older group would be subject. However, Huber (2005), using the same instrument also completed by both parents and children, found significantly less positive QOL ratings in a group of children aged 8–12 years with cochlear implants compared with hearing norms, whereas an older group (aged 13–16 years) was within the norms for hearing peers. A similar study with children aged between 4 and 7 years found no differences between the children with cochlear implants and hearing peers (Warner-Czyz, Loy, Roland, Tong, & Tobey, 2009).

Archbold and colleagues (Archbold, Sach, O'Neill, Lutman, & Gregory, 2006, 2008; O'Neill, Lutman, Archbold, Gregory, & Nikolopoulos, 2004) have developed and validated a questionnaire specifically for use with parents of children with cochlear implants. Using this instrument, they found that parents were largely satisfied with their children's outcomes in well-being and social relations 3 years postimplantation (Archbold et al., 2008). Using the same instrument, researchers reported similar findings from a study of Finnish children (Huttunen et al., 2009).

The studies discussed so far have, in the main, used standardized instruments to measure constructs such as social adjustment, social well-being, and loneliness in children with cochlear implants. Research using qualitative methods is less common, but a small number of qualitative studies have been conducted. Preisler, Tvingstedt, and Ahlstrom (2005) interviewed 11 children with cochlear implants aged 8–10 years attending mainstream schools and schools for deaf and hard-of-hearing children. Findings indicated that the children in mainstream schools reported difficulties hearing and understanding what teachers and other children said in both classroom and playground settings. Most of the children attending schools for the deaf used sign language and felt that they needed sign

to communicate fully with their friends. The same researchers examined the psychosocial experiences of 22 preschool children between 1 and 4 years after implantation through interviews with parents and teachers and observations of the children (Preisler, Tvingstedt, & Ahlstrom, 2002). Eight of the children attended preschools for deaf and hard-of-hearing children using sign, 10 attended preschools for deaf and hard-of-hearing children using mainly speech (with some sign), and 4 were at mainstream preschools. The investigators found adequate communication among children in the signing preschool, difficulty communicating with nonsigning children in the preschool using mainly speech, and limited social interactions between deaf and hearing children in the mainstream preschool. Through interviews with parents, Bat-Chava and Deignan (2001) found that oral communication and relationships with hearing peers had improved following implantation for the majority of the 25 children, aged 5–10 years, in the study. In addition, many parents reported continuing communication difficulties for their children, particularly in group situations and with hearing children who were unfamiliar to them or impatient.

In a qualitative study with adolescent cochlear implant users, Wheeler, Archbold, Gregory, and Skipp (2007) interviewed 29 young people, aged 13–16 years, and reported findings covering a number of areas such as the decision to implant, using the technology, and communication. The young people appreciated their improved interaction with family and friends and reported difficulties hearing speech in noisy environments but said little more about their social relations.

Overall, these research studies have reported many positive findings related to the social functioning and social well-being of children and adolescents with cochlear implants but suggest that difficulties continue to exist in these areas for many children. Although some studies have reported no difference between children with cochlear implants and normative samples of hearing children in social well-being and QOL ratings (Loy et al., 2010; Percy-Smith et al., 2008; Schorr, 2006; Warner-Czyz et al., 2009), others have reported less positive ratings for children or adolescents with cochlear implants (Dammeyer, 2010; Huber, 2005; Loy et al., 2010 [for the adolescent group

in their study]). In addition, qualitative findings have revealed ongoing difficulties in the area of social interactions with hearing peers (Bat-Chava & Deignan, 2001; Preisler et al., 2002, 2005; Wheeler et al., 2007). The studies that compared children with cochlear implants with deaf children who did not use cochlear implants found no significant differences on psychosocial measures between the two groups (Bat-Chava et al., 2005; Dammeyer, 2010; Leigh et al., 2009).

Most of these studies investigating social outcomes for children with cochlear implants have used questionnaires or structured interviews based on standardized measures. The majority of the scales and questionnaires used were generic instruments assessing psychosocial difficulties or health-related QOL. There are limitations in using generic measures that do not include issues specifically related to deafness and the use of cochlear implants (Huber, 2005; Loy et al., 2010). Although the findings of these quantitative studies are valuable, qualitative methods such as in-depth, semi-structured interviews can capture more of the lived experience in real-world environments of children and teenagers with hearing loss (Byrnes et al., 2002; Thoutenhoofd et al., 2005). In addition only a small number of studies, either quantitative or qualitative, have included adolescent cochlear implant users, and the findings of some of these studies suggest that social and peer issues might worsen during adolescence.

In the current study, we used semi-structured interviews with the aim of extending what is known from existing research to provide more depth of understanding about how children and adolescents with cochlear implants are faring socially and emotionally. The children who were discussed in these interviews had been implanted at several implant clinics and attended a variety of educational settings across a range of urban, regional, and rural locations in Australia. They included children and adolescents of varying ages and lengths of time since implantation, thus enabling us to gain a picture of the social functioning and socioemotional well-being of children throughout childhood and adolescence.

We interviewed parents, teachers, and some children and adolescents themselves. Researchers have

suggested the benefits of using multiple sources of data, such as the reports of children, their parents, and their teachers (Bat-Chava et al., 2005; Leigh et al., 2009). Parental report is particularly important in the assessment of the outcomes of implantation in children and can provide critical information about the children's functioning in everyday situations (Knoors, Meuleman, & Klatter-Folmer, 2003). It is also valuable to have teachers' reports of children's psychosocial functioning at school. Although most studies reporting on schooling aspects of children's outcomes with cochlear implants have used fixed-choice survey instruments, the gathering of teachers' views through semi-structured interviews can add detail and depth to the picture of children's social functioning and participation in the school environment. It is also important to gather the perspectives of the young people themselves where possible, and although the major focus of this study was on the perspectives of parents and teachers, we included a number of children and adolescents with cochlear implants in the interview study.

The study reported here is part of a larger study of the communication, social, and educational outcomes of children with cochlear implants in the eastern Australian states of Queensland, New South Wales, and Victoria. Australia has a particularly high rate of general class placement for deaf and hard of hearing children, with an estimated 83% educated in general classroom settings with itinerant teacher support (Hyde & Power, 2003). Most of the remaining children attend schools with "units" or "facilities" for deaf students, where a form of signed communication (either Australian Sign Language [Auslan] or Signed English) may be used. Students in these facilities attend the schools' general classes to varying degrees. A very small number attend schools offering bilingual-bicultural programs involving instruction in Auslan, with English taught as a second language (Hyde, Ohna, & Hjulstadt, 2005/2006; Power, 2009). Official placement data for children with cochlear implants in Australia are not yet available, but a recent study suggests that their educational placement patterns reflect those of deaf and hard-of-hearing students in general, with a majority in general classes with itinerant teacher support (Hyde, Punch, & Komesaroff, 2010).

Table 1 Characteristics of children in parent interviews (N = 29)

	Mean		Range		SD
Age at interview (years)	10.9		1.7–25.0		5.5
Age at implant (years)	4.5		0.4–16.1		4.9
Years with implant	6.5		0.4–14.7		4.3
Educational setting	EI	General	Unit	BL	Work
	7%	59%	24%	7%	3%
Educational level	EI	Primary	High	Work	
	7%	59%	31%	3%	

Note. EI = early intervention centre for deaf children; General = attending general classes in a mainstream school with support from itinerant teacher of the deaf; Unit = attending school with a resource unit or facility for deaf children, in general classes for some of the time; BL = school with a bilingual (Auslan/English) program; Primary = Grades P–6; High = Grades 7–12; Work = in full-time employment.

Methods

The larger study employed a mixed methods approach to data collection and analysis by administering a survey instrument to parents and teachers of children with cochlear implants, followed by in-depth interviews with a subsample of these parents and teachers and a number of children and adolescents with cochlear implants. The study's quantitative findings and other aspects of its qualitative findings have been reported elsewhere (Hyde & Punch, in press; Hyde, Punch, & Grimbeek, in press; Hyde, Punch, & Komesaroff, 2010a, 2010b; Punch & Hyde, 2010a, 2010b).

Participants

We interviewed 25 parents; 24 of these were mothers and 1 was a father. One interviewee was deaf; the others were hearing. Four of the parents had two children with cochlear implants; consequently, the number of children discussed in the interviews was 29 (14 females and 15 males). For 24 of the children (83%), their deafness was congenital. The other five children had lost their hearing due to illness, two at the age of 18 months, two at age 2 years, and one at almost 4 years. Table 1 shows further details about the children's age at data collection, age at implantation, duration of implant use, and educational situation. Although the age range extended to 25 years, the 25-year-old was the only subject in the study who had left

Table 2   Characteristics of children in teacher interviews (N = 15)

	M	Range	SD
Age at interview (years)	8.7	2.3–17.5	4.6
Age at implant (years)	4.1	0.6–11.1	3.1
Years with implant	4.6	0.3–10.3	2.8
Educational setting	EI 20%	General 47%	Unit 33%
Educational level	EI 20%	Primary 60%	High 20%

Table 3   Characteristics of children in child interviews (N = 11)

	M	Range	SD
Age at interview (years)	14.1	10.2–17.3	3.1
Age at implant (years)	3.9	1.2–14.0	3.8
Years with implant	10.1	2.3–15.1	4.4
Educational setting	General 36%	Unit 64%	
Educational level	Primary 36%	High 64%	

school; all the others discussed in the parent interviews were under the age of 18 years.

Of the 15 teacher interviewees, 7 worked as itinerant teachers of the deaf, 5 were based in support classes or deaf facilities in mainstream schools, and 3 were early childhood teachers or early intervention specialists working in early intervention centers for deaf children. Details of the children (9 females and 6 males) on whom the teachers' interviews were based can be seen in Table 2. Data about the precise age at onset of deafness were not available from the teachers but it was apparent from the teacher interviews that deafness was prelingual for all the children discussed.

Eleven children and adolescents (seven males and four females) were interviewed. Deafness was congenital for all except one, whose hearing was lost due to illness at 2 years of age. Table 3 shows further demographic details of the child and adolescent interviewees. Those at mainstream schools with support from itinerant teachers of the deaf all experienced an auditory-oral communication mode at their schools; those attending schools with support units for deaf children also experienced Auslan to varying degrees.

Procedure

Approval for the project was gained from the Human Research Ethics Committees of the universities involved in the study and of Departments of Education, early intervention centers, and hospitals with cochlear implant clinics in Queensland, New South Wales, and Victoria. Cochlear implant clinics, early intervention centers, and state education departments issued invitations to participate in the study and facilitated distribution of copies of the survey to the families and

teachers of all children in their databases who had been implanted under the age of 18 years.

Almost 80% of the 247 parents and 151 teachers who completed the larger study's survey instruments agreed to be contacted for an interview, and so we needed to make a selection of participants to contact and invite to be interviewed. In keeping with the aims and qualitative approach of this phase of the study, sampling was purposeful. Purposeful sampling is designed to select information-rich cases likely to best illuminate the questions being investigated and yield insights and in-depth understanding, rather than empirical generalizations (Patton, 2002). However, we sought to include a range of parents and teachers in terms of location (metropolitan, regional, rural), age of child at data collection, age of child at implantation, and the type of educational setting the child attended, so that there would be structured representation across the range of situations of children. This "maximum variation sampling" makes it likely that common patterns emerging from the data are of particular value in capturing the "central, shared dimensions of a setting or phenomenon" (Patton, p. 235). The child interviewees were those whose parents had agreed for their children to be interviewed, and they formed a heterogeneous group varying in age, location, type of educational setting, and use of oral or signed communication methods.

Interview Procedure With Parents and Teachers

Parent and teacher interviews were conducted over the telephone. Researchers have found telephone interviews to be a legitimate and useful data collection method for qualitative research, producing data that

are comparable in quality to those obtained from face-to-face interviews (Carr & Worth, 2001; Stephens, 2007; Wilson & Roe, 1998). In the current study, a major reason for choosing to interview by telephone was the geographic size of the area in which the study's participants lived, and the long distances between many cities and regional cities in these three states of Australia. The three states cover a size of approximately 1,200,000 square miles. Telephone interviewing made it possible to include parents and teachers in a wide range of locations, including regional centers and rural and remote areas. Telephone interviews can be convenient not only for the researcher but also for the interviewees who can participate in their home or workplace with the least amount of disruption to their day. They can also involve greater feelings of security and anonymity for the participants and perhaps a lower tendency to be influenced by social desirability factors (Carr & Worth, 2001). All the teacher interviews and 19 of the 24 parent interviews were conducted by the first author, who has training in counseling and experience in interviewing for qualitative research; the remaining 5 parent interviews were conducted by a research assistant experienced in interviewing who was also given training specific to this project's interviews.

The interviewer made initial contact with each parent and teacher by telephone or email, depending on the contact details each person had given in their survey response to arrange dates and times for the interviews. Through this contact, dates and times were arranged for the interview to take place. In the case of the deaf parent (who lived approximately 600 miles away from the interviewer), after discussion with her by e-mail about her preferences, the interview was conducted by telephone in the following manner. She was situated in a room at her workplace with a sign language interpreter of her choice. The interpreter, using a hands-free telephone, interpreted the interviewer's questions and remarks to the parent. The parent's responses, spoken by the interpreter, were heard and recorded by the interviewer. This proved to be a satisfactory and productive method of interviewing this highly articulate deaf parent.

Although telephone interviewing can have drawbacks, in particular the lack of visual cues, the parents and teachers interviewed in this study spoke freely and in depth about their experiences with their children or students. Interviews ranged in length from 35 min to 1 hr 45 min for parents and from 30 to 45 min for teachers.

Interview Procedure With Children

As telephone interviewing was likely to be too difficult with interviewees with hearing loss, it was planned to conduct children's interviews face-to-face wherever possible, using sign language interpreters where necessary. Because the interview participants were geographically scattered, we also considered conducting interviews online using an instant messaging service. Many young people are very comfortable with this communication method, which has become popular in recent years and has been embraced by teenage Internet users as a communication and social exchange tool (Lewis & Fabos, 2005). In addition, it has been found that many deaf people embrace new communication technologies sooner than hearing people (Breivik, 2005). After discussions with the parents about the children's preferred interview method, six interviews were conducted face-to-face (one with a sign language interpreter), four were conducted via an instant messaging service, and one was conducted over the telephone by voice alone. The telephone interview was with a teenage boy who, his mother reported, was able to hear well, and was comfortable communicating on the telephone. This interview proceeded well and the boy seemed to understand all questions with minimal difficulty. As well, his speech was such that the interviewer had no trouble understanding him. Interviews with the children and adolescents lasted from 20 min to 1 hr.

Interview Questions

The interviews incorporated an initial list of questions serving as a guideline only, so that unanticipated information can emerge (McCracken, 1988). We asked parents and teachers an open-ended question to start with, modified according to the child's age, but along the lines of "what about the social side of life—how does the child go with friends and playing with other children?" followed, if necessary, with more specific

questions about the child's social interactions and use of communication modes. In the teacher interviews, the questions fell into two categories: first, questions that related to the specific child about whom the teacher had completed the survey and, second, questions relating more generally to the teacher's experience of working with children with cochlear implants. Children and adolescents were asked mostly open-ended questions about their friendships, experiences at school, communication modes, use of telecommunications technology, and feelings about their cochlear implants.

Analysis of Interview Data

Telephone and face-to-face interviews were audio-taped, with the participants' consent, and transcribed in full for analysis; the online interviews generated text that could be directly used in the analysis. The interview data were analyzed according to the constant comparative method (Glaser & Strauss, 1967; Lincoln & Guba, 1985). Analysis involved the coding of data in order to generate categories, with the constant comparison of units of data in order to discover similarities, differences, patterns, and consistencies of meaning that identified themes. As a validity check, 14 (28%) of the interview transcripts were reviewed and coded by an informed academic external to the research team (Creswell & Plano Clark, 2007). The interview data analysis was facilitated by the use of the NVivo 8 computer program. Themes reported in the results are a result of that process and represent commonalities of similar responses among the groups of participants. The direct quotations of participants' words selected are those that best illustrate these themes.

Results

The interview findings identified commonalities of responses across the parent, teacher, and child participants, and all three groups of participants expressed much that was positive about the role of cochlear implants in the children's lives. In addition, the findings indicated that difficulties remained for these children with cochlear implants in the area of social participation and socioemotional well-being. The major themes that emerged from the data analysis concerned social deafness (i.e., the effects of hearing loss in social situations, including the use of the telephone), lack of awareness of nuances in social situations, friendship patterns, and a range of issues that pertained particularly to adolescence.

Social Deafness

Interview participants across the three groups talked about the kinds of issues associated with the construct of social deafness. Most commonly, they reported that the children struggled to hear and follow conversations in groups of peers and said that one-to-one interactions were easier for them.

Parents. Some parents of primary school children said that the playground at school was difficult; one mother reported of her daughter "she actually says, I don't like the playground." Another mother, who had two children with implants, said

> They do well in one-on-one situations. School tends to be noisy and difficult and they tend to almost be loners. They look like they are loners; you might think they don't have a friend, but I think they actually choose to remove themselves from a really noisy situation and go off to the library and do that sort of thing.

Parents spoke about certain play situations that were particularly difficult for the children. One mother said that her two daughters, who had received implants at the ages of 13 months and 19 months, respectively, were "quite social when they were little," and then

> around about nine—it wasn't that they weren't liked, they were, but both my children found it a little bit hard because most girls, particularly, around about nine start to talk a lot more and play less …. So, yeah, I think again it does become a bit harder when girls get into that groupy-girly-talkie bit.

Some parents said that their children were rarely invited to play or to sleepovers at other children's houses and felt that they were left out at times; others described their children as being well liked and

experiencing happy relationships with hearing peers. Parents spoke about positive social experiences for children who tended to be particularly outgoing and friendly, as this mother described:

> [Name of child] is the type of kid that will go in and play with a group of kids—whenever we go to caravan parks and whatnot, you'll always find him playing with someone. They'll ask him what's on his head and he'll tell them, and that's fine, he'll play with them and such. He's a people person. He doesn't tell us that he finds it embarrassing or limiting at the moment, but he's not a teenager yet either.

In addition, some parents said that the cochlear implant played a part in the development of confidence and a more outgoing "personality" in their children. The mother of one small boy, aged 2 years at the time of the interview and with bilateral implants received before 9 months of age, referred to his implants' external equipment as his "ears" and said

> His personality comes out and he's different when he's got his ears on. He's much more confident …. With his ears off, he's timid and shy and won't venture about if he sees other people around. If he's eating a meal or something, and he doesn't have his ears on, he'll just sit there and he's so quiet, and then you put them on and he's happy, and he talks to us and laughs.

A mother of two children with cochlear implants described them as happy and outgoing and said "it's that personality that will get them the distance, makes you say they'll be alright." However, it appeared that even in the most positive cases, children of school age needed friends to be understanding of their hearing limitations. It was common for parents to describe their children's friends in terms of being supportive, helpful, or protective. A parent of a primary school child explained:

> She's got a great support system at school with her friends …. I think because they are in a small school, everybody knows everybody; she has friends here, they are so switched on, if she hasn't

understood what they've said … they will actually repeat it and explain it to her.

The presence of supportive friends continued to be important for older children, as one mother's description of the experiences of her son in high school indicates:

> And he has a really good small group of school friends who are very protective and very supportive and they play soccer together and hang around in the school yard …. He's had a bit of a hard time this year from a few kids because, as he said, he'll listen to a conversation and he'll answer what he thinks they are asking when in fact it's totally unrelated. And they'll say 'what do you think you are talking about?' But there's a couple of kids who are fairly protective and they'll fill him in on what's happening, so he's got a support system around him although he's come under a bit of flack.

The telephone, and in particular the mobile/cell phone, plays a major role in the social lives of many children and most adolescents, being an integral part of their relationships with friends. The findings indicated that many of the children and adolescents, even when they had been using cochlear implants since their first or second year of life, had difficulties using the telephone. Parents reported that their children would use the telephone with people they knew well, but struggled to converse, and lacked confidence, with strangers on the telephone. For older adolescents, this could also apply in employment situations. This parent described her teenage daughter's experiences with her first job:

> She's had a job, she's worked at the local little supermarket down the road, and that was, oh, that was a big test for her really. She was expected to answer the phone there, and you know, she can talk on the phone here at home, but somewhere else—and people who don't know she's deaf won't speak clearly on the phone, and so she was put in situations where she really had to speak up for herself and say "I can't do this", and she wasn't quite mature enough to take that step.

Another mother pointed out the benefits her son gained from current telecommunications technology, "because he's not totally reliant on the phone, because we have SMS and text messages and emails and things now, it's become easier for him."

Teachers. The teachers interviewed had largely positive views of cochlear implants and appreciated the increased hearing, speech development, and social participation opportunities that implantation offered for deaf children. Nevertheless, they considered that psychosocial issues constituted a continuing challenge in the lives of the children. One teacher said "I think the greatest benefit *and* greatest challenge [for children with cochlear implants] is the social integration."

Like parents, teachers described social situations in which their students with cochlear implants struggled. As found in the parent interviews, teachers also indicated that the children's social participation was facilitated by factors such as the child being outgoing and friendly and having supportive friends. The teacher of a 7-year-old girl said:

> I think she's socially very well accepted, and she's got a lovely nature, a very friendly little girl, and I think that's going exceptionally well. Her peers will acknowledge that, you know, they have to think of her in terms of some situation or they know why she sits in the place she does or whatever, but I think there's a lovely acceptance by her peers, and I think by [name of child] too, I think that she just sees herself as one of the children in the class.

Teachers described ways in which they tried to facilitate students' social inclusion at school. These involved educating the children's peers about their hearing loss and cochlear implants, encouraging friendships, and teaching social skills to the deaf children.

Children. In the child interview data, too, there was evidence of difficulties in groups of people and challenging listening environments. A boy, aged 11 years, said:

> [In the playground] it's just [name of friend] and me, basically. I'd like to have more people around, but I just like quiet.

A 17-year-old boy attending a school with a facility for deaf students explained:

Sometimes if the hearing people are in groups, it's a bit difficult. I work best one-to-one with hearing people.

Reflecting the views of parents who spoke about their children having supportive friends, some of the children also talked about friends being supportive and understanding of their hearing difficulties. One girl, aged 10 years, said:

> Most of my school friends have been with me since kinder or prep, so they sort of get the things that are hard for me and help me when they can.

In talking about their telephone use, most of the children said they did speak on the telephone but that it was sometimes difficult. A 16-year-old boy said:

> If I need to take a call I will. It takes time to recognize the voice and understand what they are saying.

A 17-year-old girl said that she used "the loudspeaker on phone. I still have trouble listening on phone." The boy who chose to be interviewed by telephone said he sometimes had trouble hearing on the phone, but generally felt confident using the phone and, indeed, he managed the whole interview well with only occasional requests for the interviewer to repeat what she had said. Adolescents also spoke about their enjoyment of visual communications methods such as emailing and instant messaging on the Internet and text messaging on cell phones.

Thus, findings from the three groups of interview participants indicated that difficulties in groups of people and challenging listening conditions, including on the telephone, were common among the children and adolescents. The child being friendly and confident and having supportive friends were factors that seemed to facilitate the children's social participation and inclusion with their hearing peers.

Awareness of Nuances in Social Interactions

Parents. Some parents had observed that part of their children's social participation difficulties arose from

their lack of awareness of some of the subtleties involved in peer interactions. A mother of a 12-year-old boy coined the term "social withitness" to describe this:

> The biggest thing that he struggles with, I believe, is social withitness, you know, just knowing the right thing to do in all social settings because he doesn't always pick up on everything that's going on …. If somebody tells a joke, a group of kids are standing round and somebody tells a joke and they say it quickly, he might miss half of it, and he won't get it, but he's not stupid so he knows he has to laugh and he might check the joke later.

Similarly, this parent of a 6-year-old girl said:

> She's a very social child, she doesn't have any issues with her implants, and she's very proud of them and all that sort of stuff, but I feel sometimes she doesn't quite understand that whole, um, I guess it's a social awareness of little kids in groups, and understanding; like, she would never understand teasing. There's some subtleties that happen in groups of children, and all through life in groups, and I think it's those subtleties that she misses.

Teachers.   Some of the teachers also spoke about this issue of social awareness, sometimes mentioning a need for social skills to be taught and the role of the teacher of the deaf in facilitating social inclusion at school, as in this example:

> She has to be taught the social skills because she doesn't hear the nuances of behaviour, what's expected, in the intonation but having been taught that, she can fit in and if the people are patient with her, as long as they talk to the right side of her and don't get upset when she ignores them because she hasn't heard them - they are all issues that have to be always smoothed over because the other children aren't confident enough to say, "well are you ignoring me because you can't hear me, or are you just being a snob?" They are not going to say that. They put their own interpretations, so you are forever putting out little fires:

"well she didn't hear you," rather than "I'm not going to be your friend anymore."

Children.   Some of the older adolescents realized that their responses in group conversations were not always appropriate. A 17-year-old girl explained:

> I do sometimes say something that someone else already said which I didn't hear … Some [people] understand. It does bother me but I'm OK when the subject is changed.

Friendship Patterns

When interviewees were asked about the children's friendship patterns and with whom they were friends, a common response was that they had few or no friends who were deaf, either with or without cochlear implants. Sometimes this was because there were no other deaf children of their age group in their school or locality; however, some children were reluctant to mix with others who were deaf.

Parents.   Most of the parents thought it was, or would be, a good thing for their children to have friends who were deaf, and in particular who had cochlear implants, and had tried to encourage such friendships. This mother related:

> A deaf camp used to be offered to them from about Year 4 onwards, and he never wanted to go until he went to one, he must have gone to one in Year 6, I think … and he suddenly realized there were … other kids his age, you know, with the implant, and he met other kids with hearing aids, and I think that was a bit more accepting for him, you know, to realize there were other kids his age out there. It was probably a good thing, and then he wanted to go back to those camps.

One mother of a teenager described how she and a few other parents of children with implants would occasionally organize get-togethers for their children:

> The kids with the implants just—[child's name] just comes away and feels so good, you know, it's

just such a good thing for her to do that and to mix with these kids. Because there's no-one at her school like that and they do feel very isolated sometimes, and it's very difficult when all of her friends who've got implants, none of them live near us, so we just don't see them …. They're all older now, so they can email each other and they talk on the MSN, and that's fantastic, but prior to that she did feel very isolated from her cochlear friends, and that's a big thing for her.

Some of the children did regularly see friends who were deaf, some with and some without cochlear implants, and these tended to be children who used sign and attended schools where there were other deaf children. Although their deaf friends were important to them, these children also wanted to have hearing friends. The mother of a 10-year-old boy explained:

I've always been really worried he wouldn't mix with hearing people and they wouldn't accept him, but given he's in the deaf facility of a hearing school, it hasn't been too bad. His deaf friends are still his security blanket, you could say, but he's very sports-minded and that's his way of being with his hearing friends. As long as he's got a football in his hands or a soccer ball, he's always going to have a hearing person near him or that he's interacting with, so he's had that strategy all along ….. His way into the hearing world is often through sport.

The parent of a girl who chose to have an implant when she was 16 spoke of her daughter's desire to communicate more easily with her hearing friends:

I asked her about the reasons she wanted the cochlear; she said she wanted to be able to understand her friends better. She's got her deaf friends, but a lot of those are in [name of city]; she's got one girl, a signing deaf girl, you know, they've had a very strong friendship, but she also has her hearing friends as well.

Teachers.   Teachers also believed that it was beneficial for children and adolescents to mix with others with cochlear implants and spoke about the difficulties in-

volved, particularly for children living in rural or regional areas where there are unlikely to be other deaf children. As one teacher explained:

His mother constantly says in [name of major city] they had the program [for deaf and hard-of-hearing teenagers] and she's constantly saying is there anything, anything like that we can do for these regional areas? But there's not a lot we can do because there's limited numbers. For them to access a program like that, they would still have to drive an hour and a half to [name of regional city] where's there's other like children.

Children.   Of the children interviewed, those attending schools where there were other deaf children described having friends among both hearing and deaf peers. A 10-year-old girl attending a school with a support unit for deaf children said:

I've got eight hearing friends and they all learned ABC and 1 to 10 in sign language. Sometimes they know a complete word, and they can sign, like that sign means animal, all the different names of animals. Interviewer: And do you have deaf friends as well? Lots. About 50!

A teenager attending a school with a support unit for deaf students explained that she had friends among both deaf and hearing peers, and said "my deaf friends sign, my hearing friends talk to me."

In some cases, children who attended mainstream schools where there were no other deaf children did not identify themselves as deaf in any cultural or group way, and valued what they perceived as the "normality" of being part of the mainstream. A 17-year-old boy, implanted at 22 months and having always been in fully mainstream school settings, had attended "deaf camps" organized regularly by school districts. He said that he had one particular deaf friend from these camps, but

The other deaf kids, they just like mucking around with deaf kids, but I like being with normal people a bit more.

Thus, friendship patterns varied depending largely on whether children were at school with others who were deaf. It appears that although it

could be beneficial for the children to mix with others who were deaf, this was often difficult to achieve, either due to distance factors or because of children's reluctance.

Issues Related to Adolescence

Although the issues reported so far in relation to social deafness, social skills, and friendship patterns applied, in varying ways, to both children and adolescents, it was clear that there was a range of issues specific to adolescents and that the period of adolescence could be particularly challenging for these young people with cochlear implants. For some, the transition to high school was especially difficult because they moved to a school with a support unit for deaf students rather than going to the high school where the majority of their primary school peers were going. Another issue affecting this age group was feeling self-conscious about their deafness, specifically with the appearance of their cochlear implant equipment, using FM systems at school, and the sound of their speech to other people. In addition, the tendency of teenagers to socialize in noisy venues with loud music presented a challenge to these young people.

Parents. The parent interviews were the richest source of data about adolescent issues, with some parents showing an acute awareness of their teenagers' feelings of loneliness and worries about friendships and dating. One mother said

> He's going through all those—what do I look like, what do people see me as, I talk differently, and you know he's been affected by those things, the way girls interact with him ….We've had lots of heart-to-hearts and girls do treat him differently because he has it in. He sampled that. He went to a rock festival in December and he said that no one would talk to him, he took it out and put it in his pocket, and the girls were all over him. He said the only trouble was he couldn't hear what they were saying!

A parent of a young adult spoke of the psychosocial difficulties her son had experienced at high school:

> We were really worried about his mental health at the later end of high school, he seemed to get quite depressed on and off, and we're so pleased to see him come through it and come to terms with it and move on. But it's really hard for young people, they're bombarded with images of perfection all the time; it's hard to come to terms with a disability, I think.

Another parent said of her teenage son:

> He hates being deaf, and we're having a lot of trouble with him at the moment …. He thinks, you know, like, his deafness will impede on him getting a girlfriend, you know, that nobody will want him because of his disability, and you can't get through to him that you can still have, you know, a normal life … he's actually been suffering from depression …. and won't accept his deafness.

Teachers. Teachers were also aware of the difficulties experienced by many adolescents with cochlear implants. According to one teacher:

> When they hit the 13, 14, 15-year-old stage they still want to be like the others. It's quite obvious to them they have an implant. When they're little, they think it's quite good. "This is my ear, I'm taking my ear off" and things like that they say. When they become more self-conscious when they're older, there's a challenge there for being accepted.

Some teachers expressed the view that adolescents with implants experienced similar psychosocial issues to adolescents with less than profound hearing losses who used hearing aids. Discussing high school students whom she supported, one teacher explained:

> I think it's all that mental health stuff that's such a big area for hearing-impaired kids that, you know, do the kids know where they sit, do the feel that they belong in a hearing group or a deaf group, or can they go between one and the other, do they see themselves as being as good as everybody else? All the self-esteem stuff that you talk about with kids – are they happy there? And I think that's a really big issue … for the cochlear implant kids too. Particularly the ones who are achieving because you presume everything's going well.

Teachers were also aware that adolescents faced the difficulty of coping in the particularly noisy environments that are typical of teenagers' social gatherings, as this teacher explained:

> Even for the really successful kids, I still think the hard part is the social connection. And I know with this student here, he's great one-on-one, but as soon as he's in a room with a group of people, at a party, at a barbecue, that's really, really hard, he can't hear what's going on in a group …. Even though the student lip-reads really well, you know, it's that social stuff, you're at a party and the lights aren't real good and there's lots of music in the background, and I think that side for adolescent kids is really, really difficult.

Children.   There was evidence in the interviews with adolescents of self-consciousness about their deafness and their external implant equipment. In the case of one adolescent, this self-consciousness influenced the decision about having a second, bilateral implant. When asked if having a bilateral implant was an option for him, this boy said "yeah, and it would be better but I just wouldn't like it. It looks funny with two."

For one girl, aged 16 years, the good friendships she had enjoyed with hearing friends at primary school led to her choosing to go to a high school with no specific facilities for deaf or hard of hearing students, despite contrary advice from educators. She said

> I was really meant to be going to [name of high school] that had a unit for the deaf, but I really wanted to be at a school with my friends from primary.

It seems that for adolescents in this study, the common challenges of adolescence, such as struggling with feelings of self-consciousness and fitting in with peers, were exacerbated by the pressure of being deaf in a hearing world. Findings from the parent interviews in particular indicated that for some adolescents their teenage years were a difficult time when, it seems, they were re-evaluating their deafness and thinking about its place in their future lives.

Discussion

This qualitative analysis identified commonalities of responses and themes across parent, teacher, and child participants and provided insight into the experiences, perceptions, and opinions of these participants around the topic of social participation and social well-being. The findings showed that children struggled in situations involving groups of people and that keeping up with conversations with their hearing peers was often difficult. Even children with excellent outcomes in spoken language development experienced problems in difficult listening environments such as in groups of people and on the telephone. In addition, the social skills involved in understanding nuances in conversational interactions were lacking in some of the children. These findings are consistent with those of several studies that have reported variability in functioning in social skills and participation and continuing communication difficulties in (non-signing) group situations for children with cochlear implants (Bat-Chava & Deignan, 2001; Bat-Chava et al., 2005; Preisler, 2007; Preisler et al., 2002). They also reflect this article's quantitative findings where only approximately 60% and 40% of children with cochlear implants were reported, by parents and teachers, respectively, to be able to follow a spoken conversation with a group of people (Hyde et al., 2010). The findings suggest that the construct of social deafness (Vonen, 2007) pertains to these young cochlear implant users. They also suggest that it is important for professional staff in implant programs to discuss this with parents, so that they have a realistic understanding of the discordance that can exist between the relative ease of spoken communication in one-to-one situations and the difficulties in groups and noisy social environments for cochlear implant users.

All three groups of interview participants spoke about the importance of supportive hearing friends who could, it seems, ameliorate the social consequences of the children's hearing difficulties. It appears that the importance of this kind of peer support persisted into adolescence. Teachers of the deaf who recognized this importance made attempts to encourage these types of supportive friendships with hearing peers. In the case of children supported by itinerant teachers

of the deaf, it may be necessary for these teachers to maximize their communication and collaboration with the children's general class teachers in order to increase the general teachers' understanding of the children's difficulties and promote strategies that they can use to improve the children's social participation.

The findings indicate that the personal characteristics of some children had a role in the nature of their social participation; that is, children who were confident, outgoing, and friendly seemed to have relatively good peer acceptance and social relationships with hearing peers. This finding is not surprising and is consistent with reports in the literature of a relationship between peer acceptance and positive affect, optimism, and resilience (Oberle, Schonert-Reichl, & Thomson, 2010). Although the precise assessment of the effect of confounding variables is more the function of quantitative than qualitative research, our findings do suggest that traits such as confidence and friendliness can improve social functioning for children with cochlear implants. As well, the findings indicated that the increased access to sound and oral communication provided by their cochlear implants contributed to some children becoming more confident and outgoing in their social interactions. Bat-Chava and Deignan reported similar findings among children with cochlear implants. Although these types of personal characteristics may or may not be related to cochlear implant use and to children's social outcomes, they should be further explored in quantitative studies designed for that purpose.

Communication difficulties in groups of people and when using the telephone, as found in the current study, also have implications for future career and workplace situations, as has been reported in studies of deaf and hard-of-hearing people (Punch, Creed, & Hyde, 2006; Punch, Hyde, & Power, 2007; Schroedel & Geyer, 2001). It is important that young people with cochlear implants receive appropriate career guidance and transition planning assistance in high school in order to be able to manage any barriers they might encounter and so maximize their career opportunities.

Adolescence is typically a time of great importance attached to friendships and dating, conformity to peer groups, and sensitivity about one's appearance. Peer relations become more complex as both best friendships and the formation of a wider circle of friends assume greater value, and the importance of intimacy and openness in friendships increases (Eder & Nenga, 2003). For parents in the current study, worries about their children's social participation and emotional well-being increased as their children approached and reached adolescence and appeared to struggle with issues around being deaf and fitting in with hearing peers. Parents, teachers, and the adolescents themselves reported that some adolescents were self-conscious about aspects of their deafness and the external implant equipment they needed to wear. These findings are consistent with others reported in the literature about the social participation and social self-concept of adolescents who use hearing aids (Kent, 2003; Kent & Smith, 2006; Punch & Hyde, 2005). Studies investigating what has been called the 'hearing aid effect," involving perceptions of stigma associated with wearing hearing aids, have reported that some young adults reject their hearing aids for reasons of cosmetic appearance or peer acceptance (Cameron et al., 2008; Cienkowski & Pimentel, 2001). The current study's findings indicate that these concerns are also felt by young people with cochlear implants. In addition, some parents reported that their teenagers were, or had been, depressed. For these young people, the challenges of adolescence were particularly difficult, and anxieties about their place in the world and how they would be accepted by other people surfaced at this time. These findings are consistent with those of Loy et al. (2010) whose QOL findings suggested that adolescence was a particularly difficult period for pediatric cochlear implant users. Together, these findings suggest the need for a level of preparedness on the part of parents and professionals as children approach adolescence so that any emerging psychosocial or mental health problems can be met with early intervention strategies and support. It is important for school counselors and school psychologists to be aware of these issues and to consider a range of programs for young people with cochlear implants and their peers.

The emphasis on speech development and oral-aural communication during their early years may lead children, particularly as they move into the sensitive adolescent years, to feel that it is important for them to fit in as much as possible to the hearing world and perhaps to discount or devalue deafness and people

who are deaf. The findings from the interview data indicate that some of the children with cochlear implants were reluctant to mix with other deaf children, but parents and teachers generally perceived benefits for children and adolescents from contact with others who are deaf, with or without cochlear implants. It may be beneficial, therefore, for children with cochlear implants to have early exposure to sign language and to deaf adults and children. We have reported our larger study's findings related to issues of identity and the use of sign language among this group of children and adolescents in another paper (Hyde & Punch, in press). Those findings indicated that, although the children and adolescents generally saw themselves as deaf in an audiological but not a cultural sense, some of them wanted to explore Deaf language and culture when they reached adolescence or young adulthood.

The current study's findings showed that often distance meant that it was difficult for children to get together with others who were deaf, even when, as reported in some cases, they felt isolated and wanted to stay in touch with friends they had made when they had travelled to attend implant clinics and early intervention centers. These findings suggest that psychosocial benefits are likely to result from contact and meetings among children and adolescents with cochlear implants and indicate the importance of parents and professionals persisting in efforts to arrange such interactions.

These qualitative findings about children's social participation and well-being experiences have added to the growing body of knowledge reported in the literature about this important area in the lives of deaf children and adolescents with cochlear implants. The inclusion of children with relatively long duration of implant use in the study meant that it was possible to gain insight into the long-term functioning and experiences of young people throughout childhood and adolescence. Generalization is not necessarily an expected outcome of qualitative studies, which are more suited to developing insights and understanding about particular individuals in specific contexts, with information provided about the individuals helping the reader to judge the relevance of the findings to their own circumstances or needs (Brantlinger, Jimenez, Klingner, Pugach, & Richardson, 2005). The study's maximum variation sampling (Patton, 2002) of interview participants

meant that it was possible to gain valuable insights into the commonalities of experiences across a range of children in terms of age, age at implant, location, educational setting, and communication modes.

Although multivariate quantitative analyses can reveal the complexity and interactions among variables, qualitative analyses provide a richness and contextualization that can build a greater understanding of findings from quantitative findings. In this way, quantitative and qualitative analyses may be complementary. The current study's qualitative analysis cannot accurately determine the influence of confounding factors on the children's social participation and well-being; that task is more the role of quantitative research. Quantitative studies have reported on the relative impact of some potentially confounding variables, particularly age of implantation, duration of implant use, and level of speech production and reception, on the social outcomes of children with cochlear implants, with inconsistent findings (e.g., Dammeyer, 2010; Leigh et al., 2009; Nicholas & Geers, 2003; Schorr, 2006). Further research into the relationships between variables of this nature continues to be necessary.

In the current study, the inclusion of three sources of data—reports from parents and teachers and children's self-reports—provided a means of validating one source of information against other sources. We found that the parent data were particularly rich as these parents showed a sensitive awareness of their children's feelings and social and emotional experiences. The teacher findings provided valuable insights about the children's experiences at school, and many of the teachers' observations and perceptions of children with whom they worked were in close concordance with the parents' reports. Even though the small corpus of data that was able to be gathered from interviews with children and adolescents was not a major feature of this study, we thought it important to include it in this report. Gathering data through child self-report is valuable but involves particular challenges. Children and adolescents may lack high levels of self-awareness, the ability to express clearly their perceptions and feelings, or indeed the will to do so—for instance, adolescents generally like to be seen as socially acceptable and accepted among their peers and may prefer not to admit to having few friends or to

experiencing social difficulties. Children and teenagers cannot always be encouraged to provide more than brief responses in an interview situation (Bassett, Beagan, Ristovski-Slijepcevic, & Chapman, 2008; Preisler et al., 2005). Our inclusion of online interviewing via instant messaging had the advantage of using a medium with which the young people were comfortable but involved the challenges of this type of medium for qualitative interviewing, such as the difficulties of developing rapport (Mann & Stewart, 2002). In future research, other interview methods or combinations of methods may be more productive with this population. Group interviews along the lines of focus groups can work well with children and adolescents, bringing advantages such as a reduction in the power imbalance between adult interviewers and child participants and an enhanced naturalness of the interview context (Eder & Fingerson, 2002). The use of methods specifically designed to allow adolescent cochlear implant users to elaborate on their experiences, feelings, and concerns could be particularly helpful. Even preparing deaf children and adolescents as interviewers of their peers may provide insights not readily available when children and adolescents are answering questions posed by adult interviewers. Kellett (2009, 2010) described recent research studies successfully conducted by children and teenagers who had been trained and supported to conduct their own research with their peers.

Conclusion

Overall, the participants in this study displayed a relatively common set of experiences and perceptions regarding the social experiences of deaf children and adolescents who use cochlear implants. The three groups of participants in these interviews expressed appreciation of the cochlear implant and its role in extending opportunities for communication and social interaction between these profoundly deaf children and hearing people. However, nearly all the parents and teachers expressed concerns about the social side of the children's lives, and the reports of all three groups elucidated the types of difficulties and limitations remaining for these young people. Overall, it seems that issues around friendship and "fitting in" with hearing peers were as real for these children with cochlear implants as for other deaf or hard-of-hearing children

without cochlear implants for whom these social problems have been reported in the literature (Antia, Sabers, & Stinson, 2007; Bat-Chava & Deignan, 2001; Most, 2007; Punch & Hyde, 2005).

To some extent, the proficiency that many of the children had in one-to-one spoken communication situations seemed to mask the difficulties that they encountered within group and multiple participant contexts. These difficulties appeared to be sustained across the various ages of the children involved in the study and they resemble the findings of earlier studies of hard-of-hearing students in mainstream schools and in other social contexts. That is, the children with implants functioned socially as hard of hearing, and from an educational standpoint would seem to warrant the same accommodations of class organization, communication, and learning that are extensively reported for these students.

Although the earlier implantation of infants and young children and improved speech processors with better noise filters may ameliorate some of the difficulties observed in this article, there can be no general assumption that implantation of itself will allow the social learning and participation of these children to proceed without considered support. There needs to be an active, structured focus by parents and teachers on children's development in this important area of human functioning, so that the potential of implantation may be more fully realized.

Conflicts of Interest

No conflicts of interest were reported.

References

Antia, S. D., Sabers, D. L., & Stinson, M. S. (2007). Validity and reliability of the Classroom Participation Questionnaire with deaf and hard of hearing students in public schools.

Journal of Deaf Studies and Deaf Education, 12, 158–171. doi: 10.1093/deafed/enl028.

Archbold, S., Sach, T., O'Neill, C., Lutman, M., & Gregory, S. (2006). Deciding to have a cochlear implant and subsequent after-care: Parental perspectives. *Deafness and Education International, 8,* 190–206. doi: 10.1002/dei.201.

Archbold, S., Sach, T., O'Neill, C., Lutman, M., & Gregory, S. (2008). Outcomes from cochlear implantation for child and family: Parental perspectives. *Deafness & Education International, 10,* 120–142. doi: 10.1002/dei.243.

Asher, S. R., & Wheeler, V. A. (1985). Children's loneliness: A comparison of rejected and neglected peer status. *Journal of Consulting and Clinical Psychology, 53,* 500–505. doi: 10.1037/0022-006X.53.4.500.

Bassett, R., Beagan, B., Ristovski-Slijepcevic, S., & Chapman, G. E. (2008). Tough teens: The methodological challenges of interviewing teenagers as research participants. *Journal of Adolescent Research, 23,* 119–131. doi: 10.1177/0743558407 310733.

Bat-Chava, Y., & Deignan, E. (2001). Peer relationships of children with cochlear implants. *Journal of Deaf Studies and Deaf Education, 6,* 186–199. doi: 10.1093/deafed/6.3.186.

Bat-Chava, Y., Martin, D., & Kosciw, J. G. (2005). Longitudinal improvements in communication and socialization of deaf children with cochlear implants and hearing aids: evidence from parental reports. *Journal of Child Psychology and Psychiatry, 46,* 1287–1296. doi: 10.1111/j.1469-7610.2005.01426.x.

Beadle, E. A., McKinley, D. J., Nikolopoulos, T. P., Brough, J., O'Donoghue, G. M., & Archbold, S. M. (2005). Long-term functional outcomes and academic-occupational status in implanted children after 10 to 14 years of cochlear implant use. *Otology and Neurotology, 26,* 1152–1160.

Brantlinger, E., Jimenez, R., Klingner, J., Pugach, M., & Richardson, V. (2005). Qualitative studies in special education. *Exceptional Children, 71,* 195.

Breivik, J. K. (2005). *Deaf identities in the making: Local lives, transnational connections.* Washington, DC: Gaullaudet University Press.

Byrnes, L., & Sigafoos, J. (2001). A "consumer" survey of educational provision for deaf and hard of hearing students. *American Annals of the Deaf, 146,* 409–419.

Byrnes, L. J., Sigafoos, J., Rickards, F. W., & Brown, P. M. (2002). Inclusion of students who are deaf or hard of hearing in government schools in New South Wales, Australia: Development and implementation of a policy. *Journal of Deaf Studies and Deaf Education, 7,* 244–257. doi: 10.1093/deafed/7.3.244.

Cameron, B., Cunningham, E., Lindner, A., Nicol, L., Chenoweth, L., & Driscoll, C. (2008). Hearing aid use and satisfaction in young Australian adults with severe to profound hearing loss. *Australian and New Zealand Journal of Audiology, 30,* 59–72. doi: 10.1375/audi.30.1.59.

Carr, E. C., & Worth, A. (2001). The use of the telephone interview for research. *Nursing Times Research, 6,* 511–524. doi: 10.1177/136140960100600107.

Charlson, E., Strong, M., & Gold, R. (1992). How successful deaf teenagers experience and cope with isolation. *American Annals of the Deaf, 137,* 261–270.

Cienkowski, K. M., & Pimentel, V. (2001). The hearing aid 'effect' revisited in young adults. *British Journal of Audiology, 35,* 289–295.

Creswell, J. W., & Plano Clark, V. L. (2007). *Designing and conducting mixed methods research.* London: Sage.

Dammeyer, J. (2010). Psychosocial development in a Danish population of children with cochlear implants and deaf and hard-of-hearing children. *Journal of Deaf Studies and Deaf Education, 15,* 50–58. doi: 10.1093/deafed/enp024.

Eder, D., & Fingerson, L. (2002). Interviewing children and adolescents. In J. F. Gubrium & J. A. Holstein (Eds.), *Handbook of interview research: Context and method* (pp. 181–201). London: Sage Publications.

Eder, D., & Nenga, S. K. (2003). Socialization in adolescence. In J. Delamater (Ed.), *Handbook of social psychology* (pp. 157–182). New York, NY: Kluwer Academic/Plenum.

Eriks-Brophy, A., Durieux-Smith, A., Olds, J., Fitzpatrick, E., Duquette, C., & Whittingham, J. (2006). Facilitators and barriers to the inclusion of orally educated children and youth with hearing loss in schools: Promoting partnerships to support inclusion. *The Volta Review, 106,* 53–88.

Fellinger, J., Holzinger, D., Beitel, C., Laucht, M., & Goldberg, D. P. (2009). The impact of language skills on mental health in teenagers with hearing impairments. *Acta Psychiatrica Scandinavica, 120,* 153–159. doi: 10.1111/j.1600-0447.2009.01350.x.

Geers, A., Tobey, E., Moog, J., & Brenner, C. (2008). Long-term outcomes of cochlear implantation in the preschool years: From elementary grades to high school. *International Journal of Audiology, 47,* S21–S30. doi:10.1080/14992020802339167.

Glaser, B. G., & Strauss, A. L. (1967). *The discovery of grounded theory: Strategies for qualitative research.* New York: Aldine de Gruyter.

Huber, M. (2005). Health-related quality of life of Austrian children and adolescents with cochlear implants. *International Journal of Pediatric Otorhinolaryngology, 69,* 1089–1101. doi: 10.1016/j.ijporl.2005.02.018.

Huttunen, K., Rimmanen, S., Vikram, N. V., Sorri, M., Archbold, S., & Lutman, M. E. (2009). Parents' views on the quality of life of their children 2-3 years after cochlear implantation. *International Journal of Pediatric Otorhinolaryngology, 73,* 1786–1794. doi: 10.1016/j.ijporl.2009.09.038.

Hyde, M., Ohna, S. E., & Hjulstadt, O. (2005/2006). Education of the deaf in Australia and Norway: A comparative study of the interpretations and applications of inclusion. *American Annals of the Deaf, 150,* 415–426. doi: 10.1353/aad.2006.0004.

Hyde, M., & Power, D. (2003). Characteristics of deaf and hard of hearing students in Australian regular schools: Hearing level comparisons. *Deafness and Education International, 5,* 133–143. doi: 10.1002/dei.152.

Hyde, M., & Punch, R. (in press). The modes of communication used by children with cochlear implants and the role of sign in their lives. *American Annals of the Deaf.*

Hyde, M., Punch, R., & Grimbeek, P. (in press). Factors predicting functional outcomes of cochlear implants in children. *Cochlear Implants International.*

Hyde, M., Punch, R., & Komesaroff, L. (2010a). Coming to a decision about cochlear implantation: Parents making choices for their deaf children. *Journal of Deaf Studies and Deaf Education, 15,* 162–178. doi: 10.1093/deafed/enq004.

Hyde, M., Punch, R., & Komesaroff, L. (2010b). A comparison of the anticipated benefits and received outcomes of pediatric cochlear implantation: Parental perspectives. *American Annals of the Deaf, 155,* 322–338. doi: 10.1353/aad.2010.0020.

Hyde, M., & Power, D. (2004). Inclusion of deaf students: An examination of definitions of inclusion in relation to findings of a recent Australian study of deaf students in regular classes. *Deafness and Education International, 6,* 82–99. doi: 10.1002/dei.169.

Kellett, M. (2009). Children as researchers: What can we learn from them about the impact of poverty on literacy opportunities? *International Journal of Inclusive Education, 14,* 295–408. doi: 10.1080/10236240802106606.

Kellett, M. (2010). WeCan2: Exploring the implications of young people with learning disabilities engaging in their own research. *European Journal of Special Needs Education, 25,* 31–44. doi: 10.1080/08856250903450822.

Kent, B. (2003). Identity issues for hard-of-hearing adolescents aged 11, 13, and 15 in mainstream settings. *Journal of Deaf Studies and Deaf Education, 8,* 315–324. doi: 10.1093/deafed/eng017.

Kent, B., & Smith, S. (2006). They only see it when the sun shines in my ears: Exploring perceptions of adolescent hearing aid users. *Journal of Deaf Studies and Deaf Education, 11,* 461–476. doi: 10.1093/deafed/enj044.

Knoors, H., Meuleman, J., & Klatter-Folmer, J. (2003). Parents' and teachers' evaluations of the communicative abilities of deaf children. *American Annals of the Deaf, 148,* 287–294. doi: 10.1353/aad.2003.0027.

Leigh, I. W., Maxwell-McCaw, D., Bat-Chava, Y., & Christiansen, J. B. (2009). Correlates of psychosocial adjustment in deaf adolescents with and without cochlear implants: A preliminary investigation. *Journal of Deaf Studies and Deaf Education, 14,* 244–259. doi: 10.1093/deafed/enn038.

Lewis, C., & Fabos, B. (2005). Instant messaging, literacies, and social identities. *Reading Research Quarterly, 40,* 470–501. doi: 10.1598/RRQ.40.4.5.

Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic inquiry.* Newbury Park, CA: Sage.

Loy, B., Warner-Czyz, A. D., Tong, L., Tobey, E. A., & Roland, P. S. (2010). The children speak: An examination of the quality of life of pediatric cochlear implant users. *Otolaryngology—Head and Neck Surgery, 142,* 247–253. doi: 10.1016/j.otohns.2009.10.045.

Mann, C., & Stewart, F. (2002). Internet interviewing. In J. F. Gubrium & J. A. Holstein (Eds.), *Handbook of interview research: Context and method* (pp. 603–627). London: Sage Publications.

Martin, D., & Bat-Chava, Y. (2003). Negotiating deaf-hearing friendships: Coping strategies of deaf boys and girls in mainstream schools. *Child: Care, Health and Development, 29,* 511–521. doi: 10.1046/j.1365-2214.2003.00371.x.

McCracken, G. (1988). *The long interview.* Newbury Park, CA: Sage.

Meadow-Orlans, K. P. (1983). *Meadow-Kendall social-emotional assessment inventory for deaf and hearing impaired students.* Washington, DC: Gallaudet University.

Most, T. (2007). Speech intelligibility, loneliness, and sense of coherence among deaf and hard-of-hearing children in individual inclusion and group inclusion. *Journal of Deaf Studies and Deaf Education, 12,* 495–503. doi: 10.1093/deafed/enm015.

Nicholas, J. G., & Geers, A. E. (2003). Personal, social, and family adjustment in school-aged children with a cochlear implant. *Ear and Hearing, 24,* 68S–81S. doi: 10.1097/01.AUD.0000051750.31186.7A.

O'Neill, C., Lutman, M. E., Archbold, S. M., Gregory, S., & Nikolopoulos, T. P. (2004). Parents and their cochlear implanted child: questionnaire development to assess parental views and experiences. *International Journal of Pediatric Otorhinolaryngology, 68,* 149–160. doi: 10.1016/j.ijporl.2003.09.015.

Oberle, E., Schonert-Reichl, K., & Thomson, K. (2010). Understanding the link between social and emotional well-being and peer relations in early adolescence: Gender-specific predictors of peer acceptance. *Journal of Youth and Adolescence, 39,* 1330–1342. doi: 10.1007/s10964-009-9486-9.

Patton, M. (2002). *Qualitative research and evaluation methods* (3rd ed.). Thousand Oaks, CA: Sage.

Percy-Smith, L., Caye-Tomasen, P., Gudman, M., Jensen, J. H., & Thomsen, J. (2008). Self-esteem and social well-being of children with cochlear implant compared to normal-hearing children. *International Journal of Pediatric Otorhinolaryngology, 72,* 1113–1120. doi: 10.1016/j.ijporl.2008.03.028.

Power, D. (2009). Deaf education and the Deaf community in Australia. In D. F. Moores & M. S. Miller (Eds.), *Deaf people around the world: Educational and social perspectives* (pp. 3–16). Washington, DC: Gallaudet University Press.

Power, D., & Hyde, M. (2002). The characteristics and extent of participation of deaf and hard of hearing students in regular classes in Australian schools. *Journal of Deaf Studies and Deaf Education, 7,* 302–311. doi: 10.1093/deafed/7.4.302.

Preisler, G. (2007). The psychosocial development of deaf children with cochlear implants. In L. Komesaroff (Ed.), *Surgical consent: Bioethics and cochlear implantation* (pp. 120–136). Washington, DC: Gaulladet University Press.

Preisler, G., Tvingstedt, A.-L., & Ahlstrom, M. (2002). A psychosocial follow-up study of deaf preschool children using cochlear implants. *Child: Care, Health and Development, 28,* 403–418. doi: 10.1046/j.1365-2214.2002.00291.x.

Preisler, G., Tvingstedt, A.-L., & Ahlstrom, M. (2005). Interviews with deaf children about their experience using cochlear implants. *American Annals of the Deaf, 150,* 260–267. doi: 10.1353/aad.2005.0034.

Punch, R., Creed, P. A., & Hyde, M. (2006). Career barriers perceived by hard of hearing adolescents: A mixed methods analysis. *Journal of Deaf Studies and Deaf Education, 11,* 224–237. doi: 10.1093/deafed/enj023.

Punch, R., & Hyde, M. (2005). The social participation and career decision-making of hard-of-hearing adolescents in regular classes. *Deafness & Education International, 7,* 122–138. doi: 10.1002/dei.1.

Punch, R., & Hyde, M. (2010a). Children with cochlear implants in Australia: Educational settings, supports, and outcomes. *Journal of Deaf Studies and Deaf Education, 15,* 405–421. doi: 10.1093/deafed/enq019.

Punch, R., & Hyde, M. (2010b). Rehabilitation efforts and stress in parents of children with cochlear implants. *Australian and New Zealand Journal of Audiology, 32,* 1–18. doi: 10.1375/audi.32.1.1.

Punch, R., Hyde, M. B., & Power, D. J. (2007). Career and workplace experiences of Australian university graduates who are deaf or hard of hearing. *Journal of Deaf Studies and Deaf Education, 12,* 504–517. doi: 10.1093/deafed/enm011.

Remine, M. D., & Brown, P. M. (2010). Comparison of the prevalence of mental health problems in deaf and hearing children and adolescents in Australia. *Australian and New Zealand Journal of Psychiatry, 44,* 351–357. doi: 10.3109/00048670903489866.

Schorr, E. A. (2006). Early cochlear implant experience and emotional functioning during childhood: Loneliness in middle and late childhood. *The Volta Review, 106,* 365–379.

Schroedel, J. G., & Geyer, P. D. (2001). Enhancing the career advancement of workers with hearing loss: Results from a national follow-up survey. *Journal of Applied Rehabilitation Counseling, 32,* 35–44.

Stephens, N. (2007). Collecting data from elites and ultra elites: Telephone and face-to-face interviews with macroeconomists. *Qualitative Research, 7,* 203–216. doi: 10.1177/1468794107076020.

Stinson, M. S., & Liu, Y. (1999). Participation of deaf and hard-of-hearing students in classes with hearing students. *Journal of Deaf Studies and Deaf Education, 4,* 191–202. doi: 10.1093/deafed/4.3.191.

Stinson, M. S., Whitmire, K., & Kluwin, T. N. (1996). Self-perceptions of social relationships in hearing-impaired adolescents. *Journal of Educational Psychology, 88,* 132–143. doi: 10.1037/0022-0663.88.1.132.

Thoutenhoofd, E. D., Archbold, S. M., Gregory, S., Lutman, M. E., Nikolopoulos, T. P., & Sach, T. H. (2005). *Paediatric cochlear implantation: Evaluating outcomes.* London: Whurr.

Vonen, A. M. (2007). Bilingualism—a future asset in the education of socially deaf children. In M. Hyde & G. Hoie (Eds.), *Constructing educational discourses on deafness* (pp. 108–118). Oslo, Norway: Norwegian Government Printers, Skadalen Resource Centre.

Warner-Czyz, A. D., Loy, B., Roland, P. S., Tong, L., & Tobey, E. A. (2009). Parent versus child assessment of quality of life in children using cochlear implants. *International Journal of Pediatric Otorhinolaryngology, 73,* 1423–1429. doi: 10.1016/j.ijporl.2009.07.009.

Wheeler, A., Archbold, S., Gregory, S., & Skipp, A. (2007). Cochlear implants: The young people's perspective. *Journal of Deaf Studies and Deaf Education, 12,* 303–316. doi: 10.1093/deafed/enm018.

Wilson, K., & Roe, B. (1998). Interviewing older people by telephone following initial contact by postal survey. *Journal of Advanced Nursing, 27,* 575–581. doi: 10.1046/j.1365-2648.1998.00541.x.