Abstract: Purpose: The purpose of this article was to examine the experiences of siblings of children with speech impairment, an underresearched area of family-centered practice.Method: Using naturalistic inquiry, we interviewed 6 siblings and 15 significant others. Interview transcripts were analyzed for meaning statements, and meaning statements were coded and organized thematically.Results: Four major themes emerged as significant in these children's experiences. The first theme described the typically positive relationship when siblings were together. The second theme related to the siblings' relationship in the context of outsiders, when the sibling of the child with speech impairment frequently undertook the roles of protector and interpreter. Exemplifying this, 1 mother described her daughter as the cavalry on the hill. In the third theme, the impact on self, siblings expressed jealousy and resentment as well as worry and concern toward the child with speech impairment. In the fourth theme, the impact on parent'child relationships, siblings expressed an awareness that they experienced less parental attention, had concerns regarding the impact of the circumstances on their parents, and took on a parent-like role toward the child with impairment, and for some, toward their parents.Conclusion: As part of family-centered practice, speech-language pathologists need to be aware of the important roles that siblings play and should routinely include siblings in assessment and intervention.

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Siblings of Children with Speech Impairments: Cavalry on the Hill

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Abstract

Purpose: To examine the experiences of siblings of children with speech impairment; an under-researched area of family-centered practice.

Method: Using naturalistic inquiry six siblings and fifteen significant others were interviewed. Interview transcripts were analysed for meaning statements. Meaning statements were coded and organised thematically.

Results: Four major themes emerged as significant in these children's experiences. The first theme described the typically positive relationship when siblings were together. The second theme related to their relationship in the context of outsiders, when siblings frequently undertook the roles of protector and interpreter. Exemplifying this one mother described her daughter as the *cavalry on the hill.* In the third theme: the impact on self, siblings expressed jealousy and resentment, worry and concern, towards the child with the speech impairment. In the fourth theme: the impact on parent-child relationships, siblings expressed an awareness that they experienced less parental attention, had concerns regarding the impact of the circumstances on their parents, and took on a parent-like role towards their siblings, and for some towards their parents.

Conclusions: As part of family-centered practice, SLPs need to be aware of the important roles siblings play and should routinely include siblings in assessment and intervention.

Key words: siblings, qualitative research, interpreting, parent, communication disorder

Introduction

Family-centered practices are being promoted within speech-language pathology practice (Crais, Poston Roy & Free, 2006; Watts Pappas, McLeod, & McAllister, 2006) as well as in other areas of health (e.g., Hanna & Rodger, 2002; O'Neil, & Palisano, 2000; Paliadelis, Cruickshank, Wainohu, Winskill, & Stevens, 2005) and education (e.g., McKeand, 2003). One of the key concepts of family-centered practice is the acceptance of the family as the client, rather than just the child. In family-centred practice individuality and diversity of families is recognised, so services are adapted to take into account each family's different beliefs, culture and the environment (Law et al., 2003). Additionally, family-centered practice acknowledges the interrelated nature of family relationships. Consequently, intervention focuses not only on the child but the child's whole family (Dunst, 2002). To date, the major focus of family-centered practice has been towards the parents and the child with the impairment. Other family members, notably siblings, have received much less attention.

The relationship that siblings share is significant to the development of children, providing children with the opportunity to build the foundations of important social and emotional skills such as sharing and conflict resolution (Dunn, 1988; Powell & Gallagher, 1993; Santrock, 2001). Although siblings generally share similar genes, they rarely possess the same aptitude or ability level (Strohm, 2002). When a child in a family has a disability, these differences between siblings may be heightened and an atypical sibling relationship may develop (Gibbs, 1993). Powell and Gallagher (1993, p. 3) assert:

There is something unique, something special, about growing up in a family in which a brother or a sister has a disability. Sibling relationships, normally critical to a child's

overall development, take on special significance when one of the siblings has a disability.

When a child has a sibling with a disability they may exhibit feelings that are alike to parental feelings yet, as children, they may be given little opportunity to have their concerns heard (Powell & Gallagher, 1993; Strohm, 2002). Siblings of children with disabilities may have guilt, emotional distress, and anxiety (Featherstone, 1980; McHugh, 2003; Naylor & Prescott, 2004; Nixon & Cummings, 1999; Strohm, 2002). They have been reported to withdraw from peers and extracurricular activities (Naylor & Prescott, 2004; Nixon & Cummings, 1999; Strohm, 2002), and be under pressure to achieve academically in order to 'make up' for their sibling's disability (Crnic & Leconte, 1986; Gibbs, 1993; McHugh, 2003; Naylor & Prescott, 2004; Powell & Gallagher, 1993; Strohm, 2002). It has been proposed that children may internalize feelings such as guilt and grief associated with their sibling's disability (Strohm, 2002) and suppress their own needs (Naylor & Prescott, 2004; Siegel & Silverstein, 1994). In contrast, siblings may also externalize behaviors such as overachievement (Russell, Russell & Russell, 2003) and negatively reacting to conflict (Phillips, 1999). (For a review of siblings of children with disabilities see Barr, McLeod & Daniel, 2006).

There is a lifelong impact of being the sibling of a child with a disability or chronic illness (Parker & Stimpson, 2002). This impact begins in childhood where children often choose their friends on the basis of those who accept their sibling (Crnic & Leconte, 1986) and moves into adulthood where partners may be selected on the same basis (McHugh, 2003; Parker & Stimpson, 2002). Moreover, it has been suggested that siblings of children

with disabilities tend to undertake careers in helping professions such as nursing, counselling and special education (Featherstone, 1980; Marks, Matson & Barraza, 2005; McHugh, 2003).

Ecological models of child development (e.g., Bronfenbrenner, 1994) indicate the impact of the whole family on the development of the child: it is likely that disabilities and intervention will have an impact on the client's family, including their siblings. Siblings of children with disabilities may encounter less parental attention than the child with a disability (Gibbs, 1993; Naylor, & Prescott, 2004; Powell & Gallagher, 1993; Strohm, 2002). The amount of attention that parents divide between their children with disabilities and their non-disabled siblings may be seen as disproportionate by siblings who feel as though they are left out or unloved (McHugh, 2003; Strohm, 2002). Greenspan (2001) also discusses the incidence of siblings of children with learning disabilities using attention-seeking behaviors, such as being dominant in social situations, to counteract their perceived lack of attention. According to Greenspan (2001), such attention-seeking behaviors may be a child's way of exemplifying their unfulfilled need for nurturance.

Most research into the effects of children's disabilities on siblings has focused on children with severe disabilities that affect a number of different domains including motoric, cognitive and communicative domains. Much of this research has examined sibling experiences of those with developmental and physical disabilities such as Down Syndrome, Asperger's Syndrome, and the Autism spectrum. Some comparative research into the effect of these different disabilities on siblings suggests that disability type affects the sibling relationship differently, whereas other research has found similar impacts on these relationships. Pilowsky, Yirmiya, Doppelt, Gross-Tsur and Shalev (2004) explored the social

and emotional adjustment of the siblings of children with Autism. When the adjustment of these siblings was compared to the social and emotional adjustment of the siblings of children with developmental language disorders and developmental delay it was found that the majority of siblings, regardless of the type of disability encountered, were well adjusted. In contrast, Fisman, Wolf, Ellinson and Freeman (2000) suggested that the siblings of children with Pervasive Developmental Disorders (such as Asperger's Syndrome and Autism) were more likely to be reported by teachers and parents as exhibiting more internalizing and externalizing behavior problems than the siblings of children with Down Syndrome.

One unexplored area in the literature is that of siblings of children with a disability in a single domain, such as a speech impairment of unknown origin. The high prevalence of children with speech impairment (Law, Boyle, Harris, Harkness, & Nye, 2000; McKinnon, McLeod & Reilly, 2007; McLeod & McKinnon, 2007), and the educational, occupational and social aspects of having a speech impairment (Felsenfeld, Broen & McGue, 1994; Lewis & Freebairn, 1992, as well as knowledge of the effects on siblings of having a brother or sister with a disability indicate a need for research on the effects of speech impairment on siblings and sibling relationships.

Current research with siblings of children with disabilities is limited to, and largely based on third party reports from adults such as teachers and parents (Moore, Howard, & McLaughlin, 2002; Naylor & Prescott, 2004). This research is further limited by its focus on adult siblings and their memories of their childhoods in relation to their sibling's disability (e.g., McHugh, 2003; Strohm, 2002) and a focus on their negative impacts of these experiences (Hodapp, Glidden & Kaiser, 2005).

Most studies have relied on quantitative methods of data collection (e.g., Fisman et al., 2000; Nixon & Cummings, 1999; Phillips, 1999; Pilowsky et al., 2004; Wolf, Fisman, Ellinson & Freeman, 1998), with few having employed qualitative methodologies (McHugh, 2003; Strohm, 2002). Qualitative research methodologies offer insights into the worlds of people, and glimpses of their lives as lived (van Manen, 2000; Crotty, 1998). These inquiries rely on observation or interview data to explore participant's experiences of phenomena in their worlds. Qualitative methodologies are considered effective in examining research areas about which little is known (Gay & Airasian, 2003), and offer us a richer picture of the complex social world (Crotty, 1998) and the realities of those we may be seeking to work with in our professions (van Manen, 2000). In speech-language pathology services, such knowledge can allow greater insights into the interrelationships between clients and their families, and into the needs of family members in relation to the child's speech impairment, and thus enhance family-centered practice. In qualitative research, the notion of context forms a key feature (Patton, 2002). Thus, qualitative research concentrates on the study of social life in natural settings (Punch, 1998). Naturalistic inquiry (Lincoln & Guba, 1985; Erlandson, 1993) is a qualitative research design concerned with the study of phenomenon in natural settings and the exploration of the perceptions of participants within these settings. Naturalistic inquiry is thus a suitable methodology for understanding the experiences of siblings of children with a disability, in this case, speech impairment.

The aims of this investigation were:

1. To explore the experiences of siblings of a children with speech impairments.
2. To develop an understanding of the impact on siblings of living with a child a with speech impairment.

3. To explore the understandings of family, friends, caregivers and educators regarding the significant experiences of siblings of children with speech impairments.

Method

Participants

Six siblings of children with a speech impairment served as the focus and primary source of data for the present investigation: Ursula, Kelsey, Oscar, Oliver, Vincent, and Eric (see Table 1). In addition, data were gathered from their siblings with a speech impairment, parents, and significant adult others such as grandparents, teachers and family friends. All of the children with speech impairment were boys. The siblings of these children ranged in age from five to fourteen years, four were male and two were female. Five of the siblings were older than the child with the speech impairment, with the sixth sibling being her brother's twin sister. Each of the participants who informed this investigation was given pseudonyms to protect their identity. Each of the siblings had brothers with a speech impairment of unknown origin; reflecting the prevalence of speech impairment in boys (Campbell et al., 2003). Their brothers had speech impairments of varying degrees, ranging from difficulty saying a few sounds to severely unintelligible speech and one child also had a language impairment. They had no cognitive or hearing difficulties. In order to assist readers, within this paper the children with the speech impairment are differentiated from the other participants by an asterisk.

Data Collection

The data for the current investigation emerged from a larger investigation considering the impact of having a speech impairment on a child's life (McLeod & Daniel,

2005). This larger project included a number of aspects of the lives of children with speech impairment, and involved interviews with participants from a range of categories, including teachers and family members as well as the children with the speech impairment and their siblings. Data on siblings' experiences was gathered for analysis as one part of this larger project, and formed the subset for analysis in this study. The McLeod and Daniel data set included interview transcripts from six boys with speech impairments and significant people in their lives (e.g., siblings, parents, grandparents, teachers, and friends). In the present study, semi-structured interviews were conducted using questions outlined in the *Speech Participation and Activity of Children* (SPAA-C) (McLeod, 2004). The SPAA-C contains a list of questions that were designed to assist SLPs to explore children's activity and participation in society (concepts defined by the World Health Organization, 2001). Semi-structured interviews are interviews that are based on a specific set of questions which are used to compare and contrast information between participants (Fraenkel & Wallen, 2006). Thirty-two semi-structured interviews were completed in total with interviews predominantly conducted in the homes and schools of the participants. The duration of each interview varied from ten minutes to one hour. The variation in the length of interviews was the result of the number of participants being interviewed at one time (e.g., sometimes both parents were interviewed together) and the age of the participants (interviews with children where shorter than the interviews conducted with adults).

All interviews were tape recorded and then transcribed by the first author. Once complete, the transcripts were sent to the participants for review. Participants were given the opportunity to make modifications to their transcript (i.e. additions and deletions) as they felt necessary to ensure they reflected their thoughts and experiences accurately, a

process used to ensure the validity of data gathered when using qualitative methods. Where child participants (including siblings) had been interviewed it was advised that they review the transcript with their parent/caregiver. Most participants did not request changes, a few requested minor wording changes for a small number of questions.

Interviewing children required additional consideration of ethical and methodological procedures. Child participants included the siblings, their brothers with speech impairment, and their friends (see Table 1). Written informed consent was gained from the parents/guardians of all child participants. At the time of the interview child participants were informed about the nature of the research and asked to give their assent to participate (Hurley & Underwood, 2002), both verbally and by signing a form that was explained to them. When interviewing children, a parent/caregiver was within close proximity. Additionally, the interviewers ensured that all questions were asked in a positive manner (see McLeod, 2004) to ensure that the relationship between the interviewee and the child with the speech impairment was not negatively impacted. It was believed that directly asking children about speech impairment may have altered the children's relationships with and perceptions of one another. Siblings and friends were given the opportunity to discuss speech difficulties at many points during the interview via open-ended questions such as "Tell me about your brother", "Is there anything your brother has trouble with?", "Is there anything else that's important for us to know about your brother".

Data Analysis

All 32 transcripts from McLeod and Daniel's data set were reviewed for this study, and 15 contained information pertaining to the experiences of siblings (see Table 1). Once selected, the relevant transcripts were analysed using the technique of identifying 'meaning

statements' by the researcher. Meaning statements are defined as "significant statements...that have particular relevance to the phenomenon being studied" (Johnson & Christensen, 2004, p. 367) and are identified in a process of ongoing review of the transcripts individually and as a body of data.

Data analysis commenced by identifying meaning statements from each sibling which were colour coded (i.e. a different colour for each of the siblings), and a reference was given to identify the position of each meaning statement in the transcript. Meaning statements from the additional interviewees relating to these children where then identified and coded with reference to the participant category and the position of the data in their transcript. This coding allowed the data to be read in relation to its larger context to ensure the meaning identified was consistent with the participant's comments, thus addressing issues of misunderstanding and over-interpretation. Returning to the context from which statements are drawn provides a process of ensuring the 'truthfulness' of the researcher's interpretation to the data (Patton, 2002). These additional meaning statements provided information regarding something that the sibling had said (triangulation) or information that the sibling themselves had not provided.

The second step in analysing the data involved organising the coded meaning statements into various themes using the process of manual thematic analysis (Guba, 1978; Patton, 2002). This involved a process of thoughtful analysis (van Manen, 2000), where similarities, differences and contradictions are identified, and common themes identified. Whilst conducting the thematic analysis, the complete transcripts were regularly checked to ensure that the intended meanings of these statements were maintained. To be included, however, meaning statements did not always require several references from differing

sources. Single statements from participants referred to as 'key informants' (Patton, 2002) were also included. Key informants are "…people whose insights can prove particularly useful in helping an observer understand what is happening and why" (Patton, 2002, p. 321). Key informants can offer specific data, *significant statements* that are highly pertinent to the phenomenon, but which others may not have experienced in their particular circumstances, or refer to in their interview. These statements can also offer greater understanding of the experiences expressed by other participants, who may have not spoken as clearly of these views. Such statements can also inform future directions for investigation.

Four main themes emerged (see Table 2). Once themes were established, themes were reviewed using a three step framework provided by Guba (1978). First the categories had to be consistent and provide the whole picture of the data and thus the participants' experiences. Second the data set had to be reasonably inclusive of the data and information, that is the data had to be covered by the category set. Third the categories had to make sense to another judge. Checking the analysis against the data and between the three researchers provided a process of implementing this framework for this research.

Trustworthiness and creditability.

In qualitative research, reliability and validity are reconceptualised as "trustworthiness" (Lincoln & Guba, 1985, pp.76-77) and "creditability" (Patton, 2002, p. 552). Trustworthiness is established by criteria which focus the researcher's attention on rigorous application of the selected methods and processes of ensuring the creditability of the findings against the data and with participants and researchers (Denzin & Lincoln, 2005; Patton 2002). Creditability is established in a number of ways, including the *credibility* of

findings with the data or the participants a process referred to as triangulation (Denzin & Lincoln 2005; Guba & Lincoln, 1989) where there is a "convergence among sources of information," (Cresswell, 1994, p. 158). Truthfulness in qualitative research may also established through the use of multiple methods of data gathering from a single source, and through the establishing by the researcher, or participants, of the 'faithfulness' of the findings to the data, and the participants experiences. In the present study, credibility was established through the use of a range of data sources, allowing comparison between multiple accounts of sibling experiences (Bryman, 2004), and through a process of confirmation of findings in relation to the data and the analyses of the three authors.

Results and Discussion

The presentation of the findings aimed to provide a rich picture of the participants' experiences, thus both interpretation and quotations from the participants are provided to illustrate the findings of the research project. This presentation of description along with quotation encourages the reader to "…enter into the situation and thoughts of the people represented" (Patton, 2002, p. 503). The intention in reporting in this way is to enable those both with and without experience of the phenomenon to gain an insight into the participants' experiences, and to support understanding of the conclusions of the study.

The interviews in this study depicted a range of significant experiences encountered by the siblings of children with speech impairments, and are discussed under four main themes: the sibling relationship; impact on relationship with others, impact on self; and impact on the parent-child relationship (see Table 2). Within the presentation of the themes, the age of the sibling will be discussed as a factor in the sibling relationship.

Developmental psychologists, such as Piaget (1954), Erikson (1950), Kholberg (1969) and others suggest that our understanding of the world differs as we progress through childhood. This development of understanding was evident in experiences of the siblings.

Theme 1: Impact on the Sibling Relationship

    Personal relationship.

    Lobato (1990) proposes that one possibility for sibling relationships being instrumental in the development of social skills in children lies within the notion of siblings having and exerting a relative amount of power within the relationship, and being equal participants within the relationship. Given the impact of other disabilities on sibling relationships discussed earlier, it might be assumed that the relationship between a child with a speech impairment and their sibling/s may result in different experiences. However, the experiences of the participants in this investigation indicated that when alone together, there was little disturbance to the sibling relationship. When initially asked to tell the interviewer about their brothers, many siblings spoke about the time spent with the child with the speech impairment and the activities that they enjoyed doing together, whilst others spoke about positive attributes of their brother's personality. Kelsey, Vincent and Oscar who were aged between five and nine described the games and activities that they liked doing with their brothers whilst the older siblings, Ursula, Eric and Oliver, who were between the ages of 11 and 14, described attributes of their brothers' personalities that they liked.

Kelsey   He [brother*] [pause] plays with me.

Ursula   Like, like he's [brother*] cool. He's a cool kid. Like he's fun to hang out and stuff

            when he's not being naughty. Like, me and him have fun together.

Eric   And I also like him [brother*] because he is really, really kind.

In Oscar's case, it became evident that he had a very strong and reciprocal

relationship with his brother with a speech impairment. When his brother was asked what his

favorite thing to do was he responded:

Brother*   Goin' out playin' with Oscar.

Interviewer Going out playing with Oscar? Like what type of things?

Brother*   Like playin' in the pool…And we [long pause] sometimes play together at school

            …and…sometimes we go and go to the park.

Many parents and significant others also spoke about the relationship between the

sibling and the child with the speech impairment, indicating that the sibling and the child with

the speech impairment had a strong relationship and enjoyed being together. For instance

Olivia, a close family friend and work colleague of Eric's mother, indicated her perception of

the relationship that Eric shared with his brother with a speech impairment, stating:

Olivia   …usually they [Eric and his brother*] get on like a house on fire. He might have,

            you know, a wrestle with him sort of thing, he might come up and yeah. Eric

            [pause] Eric will play.

<u>Understanding of speech impairment.</u>

When describing the child with the speech impairment, only one of the siblings (Oliver) mentioned the speech impairment. However, in the later stages of the interview, siblings were asked if there was anything that their brother had trouble with, potentially prompting them to mention and discuss the speech impairment. Responses to this question were varied with older siblings indicating greater awareness of their brothers' speech and its implications. One participant, Oliver, was able to name his brother's speech impairment. Oscar, Eric and Vincent were able to explain characteristics of the child's communication skills and one participant (Kelsey) did not mention the speech impairment at all. To illustrate, quotes from Eric and Oliver are provided to indicate the range of responses given by siblings. It is also relevant to note that these siblings were of a similar age (11 and 12 respectively); however, there is a difference in the depth of their understanding of their brothers' speech impairments.

<u>Interviewer</u> OK, is there anything your brother* has trouble with?

<u>Eric</u>   Hmm, speech.

<u>Oliver</u>   Well, the little one, has dys [pause] praxia?

<u>Interviewer</u> Yeah.

<u>Oliver</u>   Dyspraxia, and he just finds it a little bit troubling to talk a lot and sometimes he gets words mixed up.

It is possible that Eric and Oliver, whilst close in age, had differences in their amount of knowledge regarding speech impairment. Featherstone (1980) suggests differences in

children's knowledge and understanding of their sibling's impairment, such as displayed by Eric and Oliver, may be attributed to the amount of discussion and explanation given by their parents. Strohm (2002) proposes that child siblings also have difficulty asking questions about their sibling's disability, possibly leading to the sibling reaching confused notions of disability.

When eight-year-old Vincent was asked if there was anything his brother had difficulty with, he responded by saying "spelling" and then "sometimes with his speech." However, further comments indicated Vincent was aware of his brother's speech impairment, as he made comparisons between the abilities of his brother with a speech impairment (6) and his youngest brother (3).

Vincent   He [three-year-old brother] can spell a bit too.

Interviewer Really? Even though he's three?

Vincent   His [three-year-old brother] speech is very good. He knows a lot of words.

Five-year-old Kelsey did not mention in her interview that her brother had any sort of difficulty or problem in any area; rather, she was more concerned with explaining the games that they enjoy playing together. However, Kelsey's mother indicated that Kelsey had some awareness of her brother's speech impairment:

Mother   Yeah. And she's [Kelsey] even said to me at times … she can get into arguments with him and she's trying to explain and he just doesn't get it…And she gets quite frustrated and she will say, she will come to me and sometimes say "What's the matter with [brother*]? Why can't he understand what I'm saying?"

Many of the siblings within this investigation had some form of understanding about their brother's speech impairment, with these understandings appearing to be dependent upon age. In relation to Kelsey's mother's comment, McHugh (2003, p. 18) suggests that "children younger than 8 years especially need information about their siblings with a disability because they interpret everything personally." Younger siblings, such as Kelsey and Vincent appeared to have a limited understanding of the speech impairment in comparison to Oliver who was able to use the label that had been given to his brother's speech impairment and simplistically describe what this label meant. As Lobato (1990) suggests:

> [Children between the ages of 3 and 8]…focus on children's actions, appearances and their own gut emotional reactions. This is not to suggest that [these children] are unaware of or insensitive to their brothers' or sisters' problems. It simply indicates that the intensity and range of emotions that siblings feel towards one another during their early childhoods is not yet measurably or consistently affected by the child's illness or disability. (pp. 18-19)

Theme 2: Impact on Relationships with Outsiders

Many siblings felt the need to protect the child from others who may or may not understand their sibling's speech impairment. It also appeared that when the sibling acted as the child's 'protector' the child with the speech impairment became reliant on the sibling and a co-dependence of reliance and protection occurred. It appeared that changes in the experiences described by the siblings were influenced by changes in context. When the sibling and the child moved out of their private relationship and others become involved, the sibling was more aware of the speech impairment and altered their role in order to

accommodate the needs of the child.

Protector.

Many siblings and others spoke of the ways in which siblings protected the child with

the speech impairment. Protection included guarding the child from bullying and undesirable

friends. Two participants described watching over siblings to ensure that they were not

bullied by other children. For example:

Ursula   Yeah like it's just I get really upset about it …Like one of my really good friends,

her little brothers, like, they didn't know that I was his [brother*'s] sister but

they used to, you know, pay him out and stuff and bully him. And … I had a go at

'em one day and they don't do it any more. They're friends with him and stuff.

Mother   He, Oliver is a bit of a…the lovey-dovey child of the family … even if he's

playing with his own friends, I can… imagine him keeping an eye [on him], you

know, even if they were right over the other side of the [playground], just, you

know, half an eye on them. And I can imagine him doing that.

Oliver's mother indicated the ways in which Oliver protects his brother with a speech

impairment from others by watching over him, especially at school. Similarly, Ursula

mentioned how she had to protect her brother from other children, although Ursula was also

able to describe the personal impact (i.e. feeling upset) of seeing other children tease her

brother. In relation to the literature that surrounds the topic of siblings, it has been suggested

that siblings between the ages of eight and twelve are highly conscious of the ways in which

others react and act towards the child with a disability (McHugh, 2003). Comments from

peers have been suggested to have a greater effect on siblings than on the child themselves as they provide evidence of the rejection of the child that the sibling feels a close connection to (Siegel & Silverstein, 1994).

Interpreter.

A form of protection that was verbalised by many of the participants and significant others in their lives was that of the sibling talking for the child with the speech impairment, or wanting to be available to do so in times of need. Many of the siblings either described, or were described by others, as playing an integral role in interpreting the needs and wants of the child with the speech impairment.

Interviewer   But what, what about if other people don't understand?

Oscar   Well I just tell them what he [brother*] said.

Interviewer   And what do you do if you don't understand what [brother*]'s saying?

Brother*'s friend I just ask Kelsey.

Interviewer   You ask Kelsey and she helps?

Kelsey   'Cause I know what he says.

Both Kelsey and Oscar indicated an understanding of the important role that they play in interpreting their brothers' needs to others who may not understand. It may be that the awareness of the special role that both Kelsey and Oscar play in the lives of their brothers is due to their desire to protect them from others. Greenspan (2001) asserts some

siblings of children with disabilities may become overly protective of the disabled child, possibly leading the sibling to worry about the child's welfare. Furthermore, the protective strategy of interpreting for others may be a response to the worry and guilt that Kelsey and Oscar feel in regard to their limited understanding of speech impairment (Featherstone, 1980; Moore et al., 2002; Siegel & Silverstein, 1994).

Olivia, a close friend of Eric's family, commented that Eric also played a large role in interpreting for his brother, although she believed that this was not a direct response to Eric's brother's speech impairment, rather it was 'second-nature' for Eric:

Olivia   There's a lot of times when I've, when I'm over there, you know, I can pick up a lot of what he's [Eric's brother*] saying. Like I said, if I know what's gone on for the day or where he's been or something like that, I can understand what he's saying. But sometimes, you know, a word will come out and I'll say "Oh! What was that?" sort of thing and Eric, automatically, he'll [Eric] be watching the TV or something and say "Oh, blah, blah, blah." He'll [Eric] answer for him [brother*] sort of thing… Yeah, he's, he's [Eric] basically grown up with it. He [Eric] probably doesn't see.

In the interviews that were conducted with two of the children with speech impairments their siblings, Oscar and Eric, overtly displayed the way in which they protected their brothers by either speaking for them, or in Oscar's case, whispering answers.

Interviewer …So what are you good at?

Brother*   At [pause] mm [pause] sport.

Interviewer Yep.

Brother*   Runnin'

Oscar   (whispering) Riding.

Brother*   Riding motorbikes.

Interviewer Riding motor, motorbikes....

Oscar   (whispering) Writing.

Brother*   Writin'.

Interviewer Oh! Is your brother giving you the words, all the hints? (laughs). You've already

            told me what you think he's good at, it's his turn! (laughs).

Oscar   Yeah, I know.

Interviewer And when do you like to talk to people?

Eric   When he's not sad.

Brother*   Yes (laughs).

Interviewer When you're not sad? What sort of things make you sad?

Eric   Being teased.

Brother*   Being teased (laughs).

In answering for or providing their brothers with answers to the interviewer's
questions both Eric and Oscar indicated their awareness that the interviewer, who was a
stranger to both of their families, may have had difficulty understanding what the child with
the speech impairment was saying. Moreover, whilst Oscar and Eric were the only siblings to
demonstrate this form of protection in the interview situation, both Kelsey's teacher and
mother described incidences of Kelsey performing a similar role.

Teacher   Lots of times when I question him [Kelsey's brother*] about something he will

          look to Kelsey firstly, if she's nearby…to get a clue as to what I'm wanting him to

          do. They often whisper answers to him.

Mother   …because he [Kelsey's brother*] had his sister, I think, as such a close friend, and

          they are very close. She's sorta like the cavalry on the hill I say (laughs). She

          comes and rescues him a lot and will explain things and he relies on her heavily.

It is interesting to note that the act of interpreting for the child with a disability is not mentioned in the literature that surrounds the siblings of children with other disabilities. It may be that the role of interpreter is unique to the relationship between a sibling and a child with a speech impairment.

Theme 3: Impact on Self

The third theme is the impact of having a brother with a speech impairment on these siblings themselves. In contrast to the experiences of playing and having fun with the child with the speech impairment, some siblings and the others within their lives spoke of changes that the sibling experienced personally as the result of being the sibling of a child with a speech impairment. Many siblings indicated that they felt jealousy and resentment and worried about the child with the speech impairment.

Jealousy and resentment.

It has been suggested that the siblings of children with disabilities may feel jealousy and resentment towards the child with a disability due to the amount of time parents spend

with the child in relation to the time spent with the sibling (Russell et al., 2003). For the siblings of this investigation, feelings of resentment and jealousy were highlighted as impacts two siblings, Eric and Ursula.

Father   Because Eric is very jealous of [his brother*].

Interviewer Yeah, OK…So what makes him jealous of [his brother*]?

Father   He seems to think [his brother*] gets more attention than he does.

Grandmother Because [Ursula's brother*] will have some terrible tantrums at different times and because [mother] gets so frustrated with [brother*] she'll take it out on Ursula. And you know, Ursula gets quite upset about it. She loves [her brother*] but, in some ways, she resents him too. You know, because it does affect all of them.

Both Ursula and Eric were described as possessing feelings of jealousy and resentment towards their brothers; however, these were the only two siblings within this investigation to be described in this way. Russell et al. (2003) suggest that siblings of children with disabilities may experience resentment and jealousy towards the child with a disability in response to the disproportionate amount of parent attention that is divided between the children with and without disabilities. It is also interesting to note that Eric and Ursula were two of the older siblings interviewed for this investigation. They verbalised their resentment of the child with the speech impairment, suggesting that resentment may be linked to age.

Interviewer And tell me about his personality.

Eric   Hmm, he's a real pain in the rear! (laughing)

Interviewer Oh dear! (laughs)

Eric   He's a real pain in the rear if you're his brother.

Interviewer Ah, yeah. OK.

Eric   Uh ha.

Interviewer But if you weren't his brother, how 'bout that?

Eric   He'd be quite nice.

Ursula   Nah, I hate it sometimes like, I don't like him sometimes because he, he gets all

            the attention… I just despise him sometimes because he gets all of the

            attention.

Furthermore, Eric's resentment of his brother was also shown in his explanation of the

situation that occurred when his brother started school:

Eric   When [brother*] started school I couldn't scrape him off…I couldn't.

Interviewer So why? What happened?

Eric   He would follow me around everywhere, everywhere, everywhere I tell you!

Interviewer So what happened after that?

Eric   After a while he slowly and slowly made friends. I started off actually making

            him friends, like I got him, took him up to his class, found a kid inside his class

            that was outside the door and I asked him if he'd play with my little brother…So

            he'd get off me back and stop asking me.

Although Eric expressed resentment at not being able to "scrape him off," he also showed the way in which he handled the situation by finding other children for his brother to play with. Eric's parents also indicated other roles which Eric undertook during his brother's transition to school:

Mother   Yeah, I'm afraid Eric did take on a lot [at school] if anything went [wrong] and got him [brother*] upset in class or something, they used to go and get Eric out of his class to try and sort it out.

Though acknowledging the important role that Eric played in his brother's transition to school, Eric's parents did not ascribe the same level of personal impact to this role. For example:

Interviewer Mm. And how did Eric react to that role?

Mother   Oh, he loved it actually (laughs).

Father   Yeah. Initially he loved it.

Mother   I think he was in his element.

Father   Yeah.

Mother   He got a bit tired of it after a while.

Father   Yeah.

Mother   Which you do.

Interviewer Yeah.

Father   About half way through second term he got a bit tired of it.

Eric's resentment of the integral role that he played in his brother's transition to school may have been heightened by a limited understanding that his parents showed in relation to the impact of Eric's role as protector and interpreter. As Strohm (2004) proposes, parents of children with disabilities frequently find it difficult to *hear* the concerns of siblings, decreasing the sibling's ability to express their needs and leading to the suppression of negative emotion (Strohm, 2002).

    <u>Worry and concern.</u>

    In contrast to feelings of jealousy and resentment, the data indicated that many of the siblings also worried about the child with the speech impairment. Worry is also a theme within the literature regarding siblings with disabilities (e.g., Featherstone, 1980; Greenspan, 2001; McHugh, 2003; Moore et al., 2002). In relation to the siblings of this investigation, the following examples were given:

<u>Mother</u>   She [Kelsey] does find him [her brother*] a worry in a way I think. She, she said something to me one day that she worries about [her brother*] all the time.

<u>Grandmother</u> Yeah.

<u>Ursula</u>   No, but like, I know, like I cry about it sometimes like because I know that it [brother*'s speech] has to be fixed.

Kelsey's mother and grandmother and Ursula demonstrate the ways in which both sisters worry about their brothers, although in different ways. Kelsey's mother states that Kelsey worries about her brother "…all the time". Kelsey did not formally say that she worries about

her brother, her comments below indicate that Kelsey checks that her brother is OK in order to deal with the concern that she feels toward him:

Mother Do they play with [brother*] at lunch time? At morning tea?

Kelsey Mm. I don't know. He plays by himself.

Mother Does he?

Kelsey He likes it. Sometimes I say "Can I play?" and he says "No," so I find my other friends.

Thus, when comparing the quotes from Ursula and Kelsey regarding their concern for their brothers, it becomes evident that there is a difference in the intensity of the worries that are experienced by both of these siblings. Ursula indicates that she is upset by her brother's speech impairment and understands that it "has to be fixed" whereas Kelsey's worry appears to be less intense. As Strohm (2002, p. 55) asserts "…siblings often worry about the safety of a brother or sister with special needs, and feel powerless to help them." In relation to Kelsey and Ursula it is possible that age plays an important role in the intensity of the worry that siblings feel and that older siblings feel less capable of altering the situation, thus intensifying the worry that they experience.

Theme 4: Impact on the Parent-Child Relationship

The fourth theme describes the change in the relationship between parent and child. It appeared that the experience of being a sibling of a child with a speech impairment also led to changes in the relationship that siblings had with their parents. Siblings and others also spoke of the siblings having concerns for their parents, taking on a parent-like role towards the child with the speech impairment and receiving less parental attention.

<u>Concerns regarding parents.</u>

Fourteen-year-old Ursula spoke about how her brother's speech impairment impacted upon her mother and the concern that she felt for her.

<u>Ursula</u>   I know that it [brother*'s speech impairment] stresses Mom out a lot … because [brother]'s Dad doesn't help out with money a whole lot so you know? You know, it stresses Mom as well 'cause she doesn't want him to be like this when he gets older and neither do I.

Ursula's comments demonstrate her understandings of the impact of her brother's speech impairment on their mother. McHugh (2003, p. 6) proposes, "…for a sibling, there is nothing more painful than watching your mother's heart break because one of her children is wounded." Ursula seems to be attuned to the stress and worry that her mother feels in regard to her brother's speech impairment and his future prospects as well as the financial burden that her single mother faces due to the cost of speech-language pathology.

<u>Parent-like role.</u>

Another change in the parent-child relationship that was evident in the data was that of some of the sibling taking on a parent-like protective role towards the child with the speech impairment. This seemed to be especially evident in the school context. For example, Kelsey's mother and grandmother illustrate the ways in which she tends to mother her brother by watching over him.

<u>Grandmother</u> The couple of times I've been to school, you know, when I've been there with them I've noticed that Kelsey still looks over for him.

Mother   She does.

Grandmother She still looks out and makes sure he's got his lunch.

Mother   Yeah.

Grandmother And puts it in front of him or makes sure he puts it back in that little thing
            outside down near the steps.

Mother   They don't do that any more.

Grandmother They don't do that any more? She used to just make sure that he's put it back
            in there. But she, she was letting him do it himself which was good. But she's
            sorta watching over him.

        When siblings take on a parent-like role toward their sibling with a disability they are

at risk of parentification. Parentification can be defined as a role reversal where a child

sacrifices their own needs in order to accommodate the emotional or functional/logistic needs

of an overtaxed parent (Chase, 1999; Lamorey, 1999). This parentification involves children

taking on responsibilities normally taken by adults, particularly parents, in relation to the care

of their disabled siblings (Siegel & Silverstein, 1994). Fourteen-year-old Ursula seemed to

mother her brother, but also seemed to *become* the parent by giving her mother instructions

on how best to ensure that her brother is understood by strangers:

Ursula   Yeah but I like get worried when Mom sends him into a shop and stuff to like
            buy something and like the people, who, you know, are in the shop might not
            understand him and he'll just, you know? And it's hard for other people. I always
            like say to Mom, like, Mom, you know, "You've gotta go with him."

In protecting their brother's interests, watching over them and in Ursula's case intervening in her mother's parenting of her brother, both children took on parent like roles. Five-year-old Kelsey seemed to take a more reactive approach to her brother's needs, responding to immediate demands or threats in the situation such as making sure that he had his lunch and, as was mentioned by her teacher, whispering answers to him in class. In contrast, however, Ursula tended to be more proactive, analysing the situations her brother was to become involved, pre-empting potential as well as addressing actual immediate threats in order to ensure that he would be 'safe' and that someone familiar would be available to interpret if he encountered difficulty.

It is also interesting to note that the only comments within the dataset regarding siblings taking on a parent-like role made reference solely to sisters. This reflects the research regarding siblings of children with disabilities which suggests that females are more likely to adopt a caretaking and parent-like role towards their siblings with disabilities (Damiani, 1999; Schilling, Schinke, & Kirkham, 1988; Siegel & Silverstein, 1994). It has also been suggested that older female siblings of children with disabilities are more likely to become parentified than other siblings within the family (Siegel & Silverstein, 1994). Ursula's descriptions were indicative of the emotionally and functionally supportive role that she played towards her brother and her mother. This role included Ursula interpreting her brother's needs to others when her mother was not available to do so and having a mature understanding of the financial and emotional burden that her mother experienced as a result of her brother's impairment. Ursula's intervention where she perceives her mother has not fully accounted for the needs and potential problems for her brother are also indicative of this parentification process.

<u>Less parental attention.</u>

It was apparent in this research that some of the siblings received less parental

attention due to their parents' focus on the needs of the child with the speech impairment. Eric's family's friend Olivia, commented on the amount of attention that Eric received from his parents compared to his brother; however, she saw this as being the result of Eric being the oldest child in the family and not due to his brother's speech impairment. Olivia commented:

Interviewer	So he's [brother*] getting more attention from both?

Olivia	Yeah, way more attention from both.

Within families of children with disabilities it has been suggested that it is often the mother who is unaware of the fact that she spends more time with the child with a disability (McHugh, 2003). In Eric's case it was observed by a family friend that he was receiving less attention from both of his parents as a result of the time his parents spent with his brother. It has also been proposed that a lack of attention from parents can lead siblings to feel isolated within their families (McHugh, 2003; Strohm, 2004), and to suffer from adjustment problems (Nixon & Cummings, 1999). It has also be asserted that whilst children may not enjoy the disproportionate amounts of time that their parents divide between siblings within a family, generally children understand the reasons for these differences (Kowal & Kramer, 1997). In this study, however, Ursula was the only sibling within this investigation who verbalised for herself that she received less attention from her mother due to her brother's needs.

Ursula	Mom's always, you know, going to things for his speech and stuff.

Ursula's mother also spoke of how she planned to move interstate with Ursula's brother to enable him to attend a special school for children with speech impairment. She briefly outlined her awareness of the impact that this would have upon Ursula:

Mother   And that's why, to me, the only solution in our life is [name of fee-paying school

that caters for children with speech impairment]…No other, there's no other

option for me…Which is hard because Ursula will still have to go to high school

at [name of home town] and we'll only be coming home of a weekend.

Clinical Implications

Speech-language pathologists perform an important role in the development of effective communication skills in children with speech impairments. This role has been expanded to consider the needs of the whole family through family-centered practice. One implication of this investigation revolves around SLPs routinely acknowledging the important role that siblings play in the lives of children with speech impairments. As this investigation has shown, siblings of children with speech impairments play an integral role in their siblings' lives, particularly in relation to interpreting the needs of the child with the speech impairment in situations where parents may not be available, such as at school. By being aware of this role, speech-language pathologists can include siblings in the provided programs, facilitating their family-centered practice in intervention services. Trent, Kaiser, and Wolery (2005) for example, found that by training older siblings of children with Down Syndrome in responsive interaction strategies there were modest changes in the communicative abilities of the children with Down Syndrome. Further research in speech-language pathology services may also identify gains for clients as well as for their families through such practices.

SLPs can also assist parents to be aware of the experiences of siblings of children with speech impairments, such as jealousy, resentment, worry, less parental attention and the protective strategies that siblings employ to accommodate the needs of the child with the speech impairment. Parents can be encouraged to ensure that the siblings of their children with speech impairment are given the opportunity to discuss their feelings and concerns about their brother or sister in order to identify and address the particular needs of these children. Furthermore, parents can become aware of the added responsibility that the siblings of children with speech impairment may face and ensure that this responsibility is age-appropriate, and address any difficulties that may arise from these additional roles of siblings in their particular circumstances.

One practical implication of this research is that it provides impetus for the consideration of sibling support groups to be accessible to the siblings of children with speech impairments. Research surrounding sibling support groups (e.g., Naylor & Prescott, 2004; Phillips, 1999) indicate the benefits of siblings being able to interact with other children in similar situations. These benefits include decreases in stress, anxiety and depression, improved self-esteem (Phillips, 1999) and improved coping strategies (Naylor & Prescott, 2004). Currently there are limited support services and groups for siblings of children with disabilities and there are no organisations with the primary focus of the needs of siblings of children with communication impairments.

<u>Limitations</u>

It is acknowledged that the present investigation is bound by limitations. These limitations include that the purpose of the interviews conducted by McLeod and Daniel (2005) were not to explore the experiences of the siblings of children with communication impairments, though sibling experiences were repeatedly mentioned. When the interviewers realised that the lives of siblings were also affected by the communication

impairment subsequent interviews elaborated upon the questions outlined in the SPAA-C (McLeod, 2004). Elaboration of these questions allowed data regarding the experiences of siblings to be gathered, thus allowing the importance of this relationship to be investigated further. This limitation may also be seen as a strength. Whilst it was not the initial intention of McLeod and Daniel (2005) to collect data regarding the experiences of siblings, the recurrence of sibling issues and experiences indicated that this topic was of importance to participants.

Furthermore, the number of siblings investigated was small, so the findings are bound to the data, therefore making them ungeneralisable to the wider population. However, research conducted within the naturalistic framework does not intend to make broad generalisations about the research findings, as it is acknowledged that the findings are bound to the data. Rather, it is the intention of the naturalistic investigator to explain the occurrence of a phenomenon within the particular setting of the investigation (Lincoln & Guba, 1985). Future directions warrant research to be conducted on a larger sample size with the specific intention of exploring the experiences of siblings of children with communication impairments.

<u>Summary</u>

This study explored the experiences of siblings of children with speech impairment. To date no other study has explored this group of children. Interviews with siblings and other significant children and adults revealed four themes. Theme 1. These siblings had a positive relationship with one another. Theme 2. With the entry of others, siblings undertook the roles of protector and interpreter. It appeared that these siblings interpreted and spoke for the children with speech impairments as a way of protecting them from being

misunderstood and possibly embarrassed. Theme 3. Siblings described personal challenges, including jealousy and worrying about their sibling with the speech impairment. Theme 4. Finally, there were a number of changes within the relationship between the parent/s and the sibling, with one sibling describing the concern that she held for her mother, and others describing the unequal amount of time that they were able to spend with their parent/s as the result of the needs of the child with the speech impairment. The findings of this research link strongly to the body of literature that surrounds the siblings of children with other disabilities; with the exception of the role of interpreter as being unique to the present study. This research has implications for speech-language pathologists and educators who are engaging in family-centered practice as well as for parents.

Acknowledgments

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Table 1. Description of siblings and transcripts used in the present study

Sibling		Transcripts used	Transcripts not used from the original data set (McLeod & Daniel, 2005)
Ursula	Ursula is fourteen-years-old. She lives with her mother and half brother. Ursula's only sibling, her 8-year-old half brother has severely unintelligible speech.	Ursula Mother Grandmother	Luke's friend Luke's cousin (10 years) Luke's teacher Luke* (8 years)
Kelsey	Kelsey is five-years-old. Her twin brother predominantly has difficulty with receptive and expressive language; however, he also has difficulty producing some speech sounds. Kelsey and her brother are in the same Kindergarten class at school. Kelsey is described by her mother as being her brother's "cavalry on the hill."	Kelsey Parents Grandmother Joshua's friend Teacher	Joshua* (5 years)
Oscar & Oliver	Oscar is nine-years-old, Oliver is twelve-years-old and Victor, their eight-year-old brother has	Oscar	

	childhood apraxia of speech and is moderately unintelligible. Due to their closeness in age, Oscar and his younger brother have been described as having a close, reciprocal relationship. All three boys attend the same school.	Oliver Mother Victor * (8 years)	
Vincent	Vincent is eight-years-old and is the oldest of three children in his family (all boys). His six-year-old brother has a mild speech impairment, moderate expressive language impairment and difficulty producing multisyllabic words.	Vincent	Mother James* (6 years) James' teacher
Eric	Eric is eleven-years-old and has one younger brother who is six. Eric's brother has a moderate speech impairment and a mild expressive language impairment. His receptive language is within normal limits. Eric and his brother attend the same primary school.	Eric Parents Paul* (6 years) Olivia (significant other)	Paul's friend (6 years)

* = child with speech impairment

Table 2. Themes

Theme 1: Impact on the sibling relationship

"When it's just you and me, everything is OK. I know you have a problem but it doesn't matter"

    a) Personal relationship

    b) Understanding speech impairment

Theme 2: Impact on relationships with outsiders/others

"When others are around things change because I have to look after you"

    a) Protector

    b) Interpreter

Theme 3: Impact on self

"Even though I love you, you change how I feel about my world"

    a) Jealousy and resentment

    b) Worry and concern

Theme 4: Impact on the parent-child relationship

"My relationship with Mom and Dad is different because of you. Sometimes I have to be more grown up than I really am"

    a) Concerns regarding parents

b) Parent-like role

c) Less parental attention

A non-systematic review of evidence-based practice within speech pathology in Australia

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Abstract

In this non-systematic review, evidence-based practice (EBP) in Australian speech pathology research and practice is examined. Many Australian researchers are contributing to the **theoretical evidence** through systematic reviews, randomised controlled trials, and other clinical research. Additionally, Australian researchers are integrating international theoretical evidence via speechBITE™ and other initiatives. Australian speech pathologists' **clinical expertise** is supported via Speech Pathology Australia and an example of the implementation of EBP in clinical contexts is the NSW EBP Network. Within Australia, research attention has been directed towards the **client's choice** and the client's voice. This paper acknowledges limitations of implementing EBP in Australia: suggesting that inclusion of the client's voice could be formalised and that additional research needs to be undertaken to address practical differences in service delivery models between Australian and international contexts.

Evidence-based practice (EBP) is increasingly encouraged within the health and medical professions as a method to underpin clinical decision making. Based on the definition of Sackett, Rosenberg, Gray, Hayes, and Richardson (1996), EBP is considered to have three components: theoretical evidence, clinical expertise and client's choice. In this paper, these three components will be considered by drawing on examples of research and practice undertaken within the field of speech pathology in Australia. While the author has aimed to represent a broad overview of EPB in Australia, it is acknowledged that this paper does not present a systematic review.

To contextualise this paper, Australia is a country of over 20 million people and is one of the most multicultural countries in the world (Hugo, 2002). It is primarily populated along the coasts with the largest population centres being Sydney, Brisbane and Melbourne on the east coast, whereas inland Australia is sparsely populated. Distance and remoteness bring challenges to the provision of health care within Australia. Healthcare in Australia is freely available for all through government funding and there is also opportunity for privately funded healthcare. Speech pathology is provided through the health, education and disability sectors by the Australian government as well as through private practices; however, this non-centralised approach coupled with geographical barriers can mean that some people do not have access to the amount of speech pathology services they require (e.g., McLeod & McKinnon, 2007; O'Callaghan, McAllister & Wilson, 2005a). The traditions of speech pathology practice in Australia were originally influenced by Britain; however, over the years the Australian speech pathology profession has been acknowledged for drawing on, synthesising and enhancing perspectives from throughout the world. Currently, there are eight universities that provide professional preparation programs for speech pathologists and Speech Pathology Australia (www.speechpathologyaustralia.org.au) is the peak professional body for speech pathologists.

Theoretical evidence

The first of components of EBP mentioned by Sackett et al. (1996) is theoretical evidence. According to Australia's National Health and Medical Research Council (NHMRC) (2000, p. 7-8) the highest level of evidence for "assessing clinical and public health interventions" is "a systematic review of all relevant randomised controlled trials". The next highest is "evidence obtained from at least one properly designed randomised controlled trial". Key Australian speech pathology researchers have been at the cutting edge in undertaking systematic research regarding interventions for people with communication disorders. For example, an Australian, Angela Morgan has co-authored a Cochrane Systematic Review on the topic of intervention for developmental apraxia of speech (Morgan & Vogel, 2006). The Australian Stuttering Research Centre (ASRC) has conducted randomised controlled trials to demonstrate the effectiveness of the Lidcombe Program for preschool children who stutter (e.g., Jones et al., 2005; Jones et al., in press). Randomised controlled trials also have been conducted in Australia regarding interventions for chronic cough (Vertigan, Theodoros, Gibson, & Winkworth, 2006), the training of communication partners of people with traumatic brain injury (Togher, McDonald, Code, & Grant, 2004) and the training of volunteers to assist people who have aphasia (Worrall & Yiu, 2000). Additionally, there is much research being undertaken within Australia that would be categorised by NHMRC as providing "lower" levels of evidence, yet is important for understanding the effectiveness and efficiency of intervention for people with communication disorders (Code, 2000).

Australian researchers have also been involved in synthesizing available international evidence for speech pathology practice. Notably, a group of Australian speech pathology academics primarily from LaTrobe University have compiled and analysed evidence in their book *Evidence based practice in speech pathology* (Reilly, Douglas & Oates, 2004). This book critiques theoretical evidence for working with clinical populations including people who have aphasia, acquired brain injury, stuttering, voice disorders, dysphagia, developmental language disorders, motor speech disorders, articulation and phonological disorders and those who use augmentative and alternative communication. Recently, Speech Pathology Australia, in association with The University of Sydney

has launched speechBITE™ (http://www.speechbite.com) "[t]o enable speech pathology clinicians and researchers to efficiently access the best available evidence to inform speech pathology practice and research". The free online database catalogues systematic reviews, randomised controlled trials (RCTs), non-randomised controlled trials (non-RCTs), case series and single case experimental designs (SCEDs) that are relevant to speech pathology practice. To enable clinicians to more easily interpret the scientific quality of the research, RCTs, non-RCTs and SCED studies are given a methodological rating and papers are listed according to their methodological quality. speechBITE™ is the most recently launched of four databases which have been developed in Australia to facilitate the use of EBP in clinical decision making. The others include PEDro for physiotherapy (www.pedro.fhs.usyd.edu.au), OT Seeker for occupational therapy (www.otseeker.com) and PsycBITE™ for people working in the field of acquired brain impairment (www.psycbite.com).

One of the difficulties that Australians face with employing theoretical evidence generated in some international speech pathology studies, is that the recommended dosage of intervention is not possible within the Australian health, education and disability sectors; frequently due to limited funding for services. For example, many international studies recommend provision of intervention twice a week to children; a service delivery model that is a rare within Australia. Within the United Kingdom, Glogowska, Roulstone, Enderby, and Peters (2000) demonstrated in a pragmatic randomised controlled trial that if children do not receive a high enough dosage of intervention, then speech pathology outcomes may be negligible. Furthermore, speech pathologists are not employed by the government education system of the largest state within Australia (New South Wales), so evidence-based interventions that have been designed for school settings are rarely able to be implemented.

In addition to the importance of considering the theoretical evidence, there are two other components to EBP as espoused by Sackett et al. (1996, p. 71) "Evidence based medicine is not "cookbook" medicine. Because it requires a bottom up approach that integrates the best external

evidence with individual clinical expertise and patients' choice, it cannot result in slavish, cookbook approaches to individual patient care. External clinical evidence can inform, but can never replace, individual clinical expertise…"

Clinical expertise

Speech pathology graduates from Australian universities are conversant with evidence-based practice guidelines. Each of these university courses are accredited by Speech Pathology Australia and each graduate has met Competency-Based Occupational Standards (CBOS) (Speech Pathology Australia, 2001) demonstrating their clinical expertise. For example, in order to plan clinical intervention, entry level speech pathologists must demonstrate that they can "… give a rationale for decisions made with reference to: • the client's communication/swallowing history • the critical appraisal of evidence in current literature and research • clinical reasoning." (Speech Pathology Australia, 2001, p. 9).

Speech Pathology Australia supports the ongoing development of clinical expertise through evidence-based practice in many ways. It publishes both an academic journal (*International Journal of Speech-Language Pathology*, previously called *Advances in Speech-Language Pathology*) and a clinical journal (*ACQuiring Knowledge in Speech, Language and Hearing*) that has a regular column titled "What's the evidence for…?" The association organises an annual scientific conference that is attended by hundreds of speech pathologists (including both national and international delegates). Additionally, it organises regular professional development courses in each state that are presented by key researchers and clinicians. Speech Pathology Australia also provides a professional self regulation (PSR) program to support and recognise continuing professional development of Australian speech pathologists. Those who are involved in the PSR program are able to use the postnominals, CPSP (certified practicing speech pathologist).

Around Australia speech pathologists are encouraged to apply evidence-based practice to their management of people with communication disorders. The NSW Speech Pathology EBP Network (2008) is possibly the most formalized method this takes place. This EBP network was established in 2002 so that speech pathologists could collaboratively examine evidence to enhance their practice and is currently organised around the following clinical groups: augmentative and alternative communication, tracheostomy and critical care, paediatric language, paediatric phonology, paediatric feeding, adult swallowing, adult speech, adult language, cleft palate. Each clinical group has their own terms of reference and presents critically appraised papers and topics (CAPs and CATs) on the website and at their annual conference.

Additionally, a number of Australian researchers are involved in translation of research to clinical practice to support the development of clinical expertise. Onslow, Jones, O'Brian, and Menzies (in press) have recently written a tutorial paper to facilitate consumers' understanding and interpretation of clinical trials of stuttering treatments. A special issue of *Advances in Speech-Language Pathology* (McLeod, 2006) provided readers with ten different perspectives from international experts on intervention approaches for Jarrod, a seven-year-old with unintelligible speech. The special issue was accompanied by online video files to enable clinicians to develop their clinical expertise by reflecting on their clinical decision making for Jarrod.

Shelton (1993, p. 175) indicated that "Clinicians need to make skillful use of a tremendous store of information…" Australian researchers have conducted research into speech pathologists' professional practice. For example, McLeod and Baker (2004) examined Australian speech pathologists' clinical practice for children with speech impairment and Watts Pappas, McLeod, McAllister and McKinnon (2008) studied Australian speech pathologists' practices for working with families.

Client's choice

Many Australian researchers have a commitment to exploration of the client's choice and the client perspective. For example, Australian speech pathology researchers have talked with people who have aphasia (Cruice, Worrall & Hickson, 2006), adolescents who stutter (Herane, Packman, Onslow & Quine, in press), stakeholders involved with people who had a traumatic brain injury (Larkins, Worrall & Hickson, 2004), parents of children who have undergone newborn infant hearing screening (Mazlan, Hickson, & Driscoll, 2006) and siblings of children with speech impairment (Barr, McLeod & Daniel, 2008). Australian research has also considered clients' opinions on the barriers of accessing speech pathology services when they are in rural and remote locations (O'Callaghan et al., 2005b). Kovarsky (2008, p. 47) indicated that "The current version of EBP needs to be reformulated to include subjective voices from the life-worlds of clients as a form of evidence." Although not considered on the NHMRC levels of evidence, exploration and consideration of the client's voice is important within the Australian research context.

Summary

Many Australian speech pathologists have incorporated EBP within their clinical decision-making, strongly supported by Speech Pathology Australia. Along with many others throughout the world, Australian researchers have embraced and contributed to understanding the three discreet and interconnected aspects of EBP: theoretical evidence, clinical expertise and client's choice. In this paper it is suggested that formalised EBP categories could expand to further acknowledge client's voices. Ray Kent, in his role as Vice President for Research and Technology of the American Speech-Language-Hearing Association (ASHA) described the application of EBP to the speech pathology and audiology professions in the USA as follows "Evidence-based practice (EBP) is a challenging but attainable goal for audiology and speech-language pathology. Our professions have made rapid progress in developing the foundations for EBP. To be sure, a great deal of work remains to be done, but we have learned from the experiences of other professions and have built our own systems to support EBP" (Kent, 2006, p. 268). His words can be echoed in the Australian context.

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