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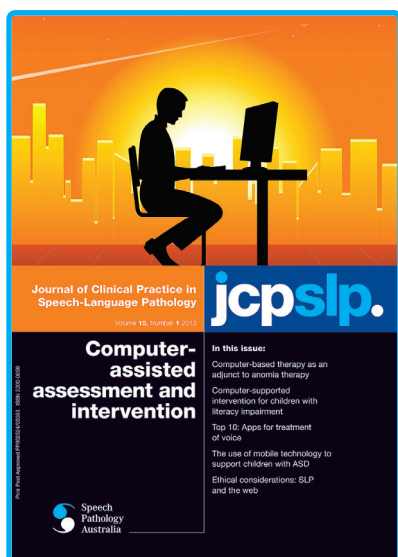
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In this issue:

- Babies with feeding difficulties
- Parent-child interactions
- Stuttering treatment and technology
- Early intervention and AAC
- Evidence-based interventions
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- Use of child health records
- Teaching and applying ethics



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From the editor

David Trembath

November each year is a time for celebration within our profession as a large group of graduating students complete their studies and begin their transition to the workforce. They enter the profession with fresh ideas and the knowledge and skills needed to become pioneers in this rapidly changing profession. As new graduates, their journey will be shaped by the latest research findings and the clinical experiences and insights shared by their experienced colleagues. In this issue, we acknowledge this time of transition with a focus on fresh science and pioneering practice, highlighted in a series of articles authored by newly graduating speech pathologists and higher degree research candidates.



Two articles examine parent-child interactions with a view to promoting positive early language and literacy outcomes. Arndt and Arciuli present the findings of an exploratory study indicating that mothers of children with autism spectrum disorder, and those of children with specific language impairment, appear to tailor their language use to the individual needs of their children during shared reading. Saetre-Turner, Williams, and Quail report the findings of a study comparing the home language environments of children with and without hearing impairment. A further two articles examine the role of technology in the provision of stuttering treatment. Bridgman, Block, and O'Brian share lessons they learned during a telehealth trial of stuttering treatment and Carey, O'Brian, and Onslow discuss the integration of technology within the Camperdown Program.

Focusing on early intervention, Behnami and Clendon tackle common myths and misconceptions regarding augmentative and alternative communication intervention for children with developmental disabilities, and provide a set of evidence-based recommendations. O'Hare and Doell remind readers of the importance of treatment fidelity in the delivery of evidence-based interventions, and argue that both clinicians and organisations have roles to play in supporting this critical aspect of service delivery. Shem, Brebner, and Coles examine the potential for child health records to act as a basis for discussions between early childhood educators and parents regarding children showing signs of communication impairment, thus facilitating early identification and intervention.

Along with articles examining the experience of parents of babies with feeding difficulties, reflections on ethics, an evidence review and regular columns, the articles noted here provide exciting insights into the future of our profession, and clinically relevant evidence to inform current practice. The student-led contributions demonstrate the calibre of colleagues entering our profession and herald the contributions they will make throughout their careers.

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Babies with feeding difficulties

Mothers' perceptions of hospital discharge, transition home, and the role of speech-language pathology

Katie L. Ilich and Deborah Hersh

KEYWORDS
DISCHARGE
PAEDIATRIC FEEDING DIFFICULTY
PARENTAL PERCEPTIONS
SPEECH-LANGUAGE PATHOLOGY
TRANSITION HOME

THIS ARTICLE HAS BEEN PEER-REVIEWED

Little has been published on the experiences of parents of children with feeding and swallowing problems, or on how these parents manage at the time of their children's discharge from hospital. This pilot study provides initial information on the perceptions of mothers of babies (outside the neonatal period but before 12 months old) with feeding difficulties, regarding the role of speech-language pathology (SLP) at discharge from hospital and during the transition home. Four mothers were interviewed at discharge from hospital and two of them were interviewed again once home up to a month later. Participants had a strong desire to go home but felt anxious about managing potentially unpredictable feeding behaviours or changing circumstances. They wanted a clear plan, verbal and written information, involvement in decision-making, and support around the time of discharge and beyond. The research highlights the importance of focusing beyond assessment and intervention for these babies and families to consider how discharge and transition home can be best facilitated and supported.



Katie L. Ilich (top) and Deborah Hersh

Parents who have babies with feeding difficulties experience considerable stress and carer burden (Adams, Gordon & Spangler, 1999; Graungaard & Skov, 2006; Hewetson & Singh, 2009; Stoner et al., 2006). This parental stress is particularly high when these babies require non-oral feeding (Judson, 2004; Spalding & McKeever, 1998; Wilken, 2012) and are hospitalised (Fowler & McHaffie, 2004; Garro, Thurman, Kerwin, & Ducette, 2005). Hewetson and Singh (2009) reported that mothers caring for children with feeding issues found the difference between expectations and reality caused them to question their mothering identity and to experience feelings of failure and inadequacy. The loss of their ideal expectations and bonding opportunities were compounded by feeling physically and emotionally exhausted from coping with the issues surrounding feeding their children.

There are a number of disorders linked to swallowing and feeding difficulties in infants, associated with structural, neurological, cardiorespiratory and inflammatory issues (Miller, 2011). These include, but are not limited to, cleft lip and palate, vocal fold paralysis, cerebral palsy, prematurity, cardiac anomalies, and inflammation of the pharynx and larynx. Between 3% and 10% of all children experience some form of feeding disorder (Manikam & Perman, 2000). In 3% of all cases, hospitalisation is required to treat and manage the condition (Garro et al., 2005; Kerwin, 1999) because of clear links between feeding disorders, safe swallowing, growth and development (Miller, 2011).

Despite recognition of the impact that having a baby or child in hospital with a feeding difficulty can have on parents, there has been relatively little research examining parental experiences at, and around the time of, discharge from hospital with these children. Few studies have considered how parents of hospitalised children in general experience the transition from hospital to home (Murdoch & Franck, 2012; Rehm & Bisgaard, 2008), but more has been written on discharge from the neonatal intensive care unit (NICU; for example, Bissell & Long, 2003; Mancini & While, 2001; Sneath, 2009). Despite awareness that this transition is a time of vulnerability and anxiety for parents, during which they need to demonstrate sufficient understanding and skills in managing their child's condition before returning home, determining parents' readiness for discharge can be complex (Bernstein et al., 2002; Weiss et al., 2008). Feeding issues are often at the forefront of these considerations, particularly if non-oral feeding is required. Hewetson and Singh (2009) suggested that parents often feel uninformed about the reasons for, and management of, tube feeding, and Adams, Gordon, and Spangler (1999) found that parents of tube-fed babies are particularly stressed. In addition, the results of Mathisen, Carey, and O'Brien's (2012) research suggest that parents of newborns with feeding issues may experience difficulty with role negotiation with health professionals while their child is in hospital. Parents also report receiving differing information from health professionals, which can negatively impact on their understanding and levels of stress (Adams, Gordon, & Spangler, 1999; Hoddinott & Pill, 2000).

This paper is particularly concerned with mothers' perceptions at discharge from hospital within the first year, but beyond the neonatal period, and focuses on the role of speech-language pathology (SLP) in that transition. Due to the often complex and multifaceted nature of swallowing and feeding conditions in newborns and infants, a range

of health disciplines are typically involved in the health care team. This team includes SLPs who are experts in feeding and swallowing disorders, and have a role in assessment, treatment, and ongoing support of these children and their families (Bell & Sheckman Alper, 2007; Carr Swift & Scholten, 2009; Cichero & Murdoch, 2006; Mathisen et al., 2012; Miller, 2011). Indeed, the adoption of a family-centred approach to the management and care of babies and children with feeding difficulties is well accepted as good practice in SLP (Mathisen, 2009). However, relatively little research has, as yet, been carried out in relation to the families of this group of children. As Mathisen wrote: “Surprisingly, the particular experiences and concerns of families of infants and children with dysphagia have not been thoroughly investigated or reported” (p. 253). Indeed, even less research is available exploring the experiences of parents of this group of children at discharge from hospital or transition between services. An exception is a qualitative study of the experiences of nine parents of children with feeding difficulties in a neonatal unit (Carr Swift & Scholten, 2009). While the participants in this study talked about a range of issues within the unit, including feeding interventions, bonding between parents and baby, and family strain related to juggling commitments in and out of hospital, a key finding was the strong desire to get home. Discharge decisions were closely related to feeding and gaining weight: “the feeding interaction became focussed on intake, to get the baby home” (p. 253) which led to considerable parental frustration. This research hinted at the centrality of discharge issues for this group of parents but it did not explore the role of SLP.

Conversely, Mathisen and colleagues (2012) presented evidence for SLPs to have a core role in neonatal intensive care units but do not discuss this in relation to discharge issues. In fact, to the authors’ knowledge, no studies have been conducted to examine parental experiences and the role of SLP leading up to, and at the time of, discharge for babies or children with feeding difficulties. This gap exists not because this issue is not important, but perhaps because the SLP role is subsumed into that of the team, or because SLP research generally has tended to focus attention on assessment and intervention and give less recognition to discharge or transition (Hersh, 2010). However, a recent clinical report (VanDahm, 2010) highlighted the roles of both acute and community SLPs in assisting families of these children and specifically noted the importance of the SLP in the transition from hospital to home for these children and families: “SLPs play a critical role in working with these children and their families before and after discharge from acute care as they support the

family’s adjustment, implement recommendations, and monitor the child’s progress” (p. 13). Therefore, this small study aimed to gain an initial understanding of parental (specifically mothers’) experiences of discharge from hospital, transition from hospital to home with a baby with feeding issues, and the role of SLP in that discharge and transition.

Method

This research study used thematic analysis, which allowed a detailed exploration of individuals’ first-hand experiences (Creswell, 2007; Liamputtong, 2009). In-depth, semi-structured interviews (Corbin & Morse, 2003) were used with three of the participants and two email-based interviews with a fourth participant. The interviews explored how mothers experienced the time leading up to their children’s hospital discharge, the transition home, and the role of SLP.

Participants

Four mothers of babies with feeding issues were recruited at a children’s hospital in Western Australia. Three were biological mothers and one was a foster mother. These participants were identified by their SLPs, and were then invited to participate in the study. To be eligible to participate, the baby had to (a) be under one year of age, but beyond the neonatal period; (b) have feeding issues, and (c) be admitted as an inpatient. However, it was not a requirement that the feeding issues were the cause of the hospitalisation. Participants were offered the opportunity for an interview within a few days before discharge and another up to a month post discharge. However, two mothers (Mel and Renee) elected for a single interview at discharge, citing time constraints, and another (Charlotte) decided to be interviewed via email over two occasions. The research study received approval from both the Edith Cowan University Human Research Ethics Committee and the Princess Margaret Hospital. The details of the participants are provided in Table 1. All names used are pseudonyms.

Conduct of the research

During the data collection period of three months, six points of contact were made with the four participants – four interviews were completed face-to-face, and two by email. The topic guide for the first interview covered feelings around discharge readiness, anticipation of going home, and involvement of SLP including its influence on management of the child’s feeding. The second interview involved revisiting the same issues but from a post-discharge perspective.

Table 1. A summary of participants’ social and medical circumstances

Mother	Marital status	Baby’s gender & age at interview	Baby’s siblings	Baby’s medical issue	Hospital stay length	Primary feeding method
Tia (28 years)	Married	M 10 months	1 (twin)	Tetralogy of fallot and cardiac surgery	2 months (in and out)	Transition from nasogastric tube to bottle
Mel (29 years)	Married (foster mother)	M 7 months	3 (foster children)	Foetal alcohol syndrome	1 week	Bottle-feeding
Renee (26 years)	Married	F 10 months	No other children	Cardiomyopathy	1 month	Bottle-feeding
Charlotte (27 years)	Married	M 5 months	2	Prematurity, atrial septal defect	2 weeks	Nasogastric tube

Themes	Sub-themes	Explanations and quotations
Experiences of discharge and transition home	Maternal emotions	<p>Stress</p> <p>Stress related to uncertainty, ongoing feelings of frustration and concern, regret, failure, feeling judged by others and being disappointed by erratic progress or events not going to plan: <i>And then when a couple of nurses got involved and they turned around and they said "Oh, we've never had a problem feeding him. He's a good feeder." It kind of puts all the emotions back in, 'cause you're, like, "Well, what am I doing wrong?"; 'cause I wouldn't be wasting all this time all week in hospital if he was a good feeder... (Mel)</i> <i>Frustrated in some ways as we have the same issues as always and no solutions (Charlotte)</i> <i>Disappointment is always around the corner... you gotta take everything day by day (Tia)</i></p>
		<p>Desire for normality</p> <p>This sub-theme was particularly linked to nasogastric feeding and the strong significance of moving to oral feeding. <i>We want to be normal. That's what we want. We want normal... not have to worry about how much milk he's had during the day and count it all and keep track of everything. (Tia)</i> <i>I just wanted the nasogastric tube out. That's all I wanted. (Tia)</i> <i>I hate the tube... it is another thing to worry about, he pulls it out all the time and people stare at him when we go out. (Charlotte)</i></p>
		<p>Confidence</p> <p>Confidence was often linked to the issue of going home – a place where mothers assumed they would be more confident and in control. However, despite this link, participants reported feeling underprepared and uninformed about how they would cope at home if something unanticipated occurred. <i>I was very confident at the time [of discharge] but as we settled back in at home many more questions arose. (Charlotte)</i> <i>We've been through it, we can do it again (Tia)</i> <i>We have had a long, hard, fight but it's been worth it (Tia)</i></p>
	Life at home	<p>Expectations for life at home</p> <p>Participants acknowledged nervousness around being away from the supports of the team on the ward but still desperately wanted to be back at home in their own surroundings and routines. <i>Every time we go home it's a good feeling, because we've got another baby at home. It's horrible being here, and the [other] baby's at home. (Tia – mother of twins)</i> <i>I can, like, control everything, her foods, her feeding, even with her drugs I have no problem to give them on time. I've got a book on her, with, like, everything written down. (Renee)</i></p>
		<p>Impact for family members</p> <p>While all four participants lived at home with their husbands, they still felt stressed by their responsibilities to their other children. They would also seek support from extended family. <i>I taught her [my sister] how to do the nasogastric feeding... it's good to have someone that can do that. (Tia)</i></p>
	The role of speech-language pathology	<p>Parental involvement</p> <p>Participants wanted to be involved in decision making and in intervention particularly to gain the skills needed once home. They wanted time to absorb information, not to feel rushed and to have their own expertise with their baby valued. They appreciated that the SLPs encouraged them to give their opinions and express their concerns. <i>If I wanted something, or if I had an idea, you know, that wasn't going to work, but I wanted to try it, they would go with it... they don't look at you like you're an idiot and that you don't know what you're doing. (Tia)</i></p>
		<p>Planning</p> <p>Participants reported that an important role for SLP, within the team, was to provide a realistic and informative plan of their child's likely feeding goals and of how the SLP would be involved after discharge. <i>On discharge I expected more of a plan... no reason for my son's issues have been given and no plan to wean him from the NG has been given. (Charlotte)</i> <i>I am still a little unsure what role SLP will have for us in the future... I'm not sure exactly what they want to do (Renee)</i> <i>Two or three days before he got discharged, I learnt how to do the nasogastric tubing. So, it was kind of, very rushed. (Tia)</i></p>
		<p>Communication</p> <p>Clear communication was important: introductions, knowing who the SLP was within the team and what the role entailed, receiving written information rather than just verbal, having time to digest the information, and for access to SLPs before and after discharge. <i>They write it down for you, as well, so you know you can take it home with you and it's not just all in your head, and kind of jumbled. (Tia)</i> <i>A printout of information about the role of each member of the feeding team and some information on what they would do in the future would have been useful. (Charlotte)</i></p>
		<p>Support</p> <p>One of the most important roles for SLP was for reassurance and emotional support. Participants reported that this gave them hope, helping them better cope with their child's feeding difficulties. <i>They've been there to help me through it all... they've seen the way he drinks when he's having a bad day... it's not just me who thinks there's something wrong with him, like, they've actually witnessed what I've been talking about. (Mel)</i> <i>I think the support is the biggest thing... they said "don't worry, you know, you've done it before, you can do it again". (Tia)</i></p>

Figure 1. Themes and sub-themes regarding experiences

Analysis

Interviews were audio recorded and transcribed verbatim by the first author and the emailed exchanges were also collected. Thematic analysis sorted recurring issues and patterns into themes and subthemes. The first author recorded feelings to maintain reflexivity, consciously acknowledging personal biases (Angen, 2000; Liamputtong, 2009; Ryan, Coughlan, & Cronin, 2009). The credibility and rigour of this study was addressed through the implementation of member checking, offered to all participants, although only one participant chose to complete member checking (Curtin & Fossey, 2007). To achieve consistency and neutrality, an audit trail was kept which involved the researcher keeping thorough notes of data, interpretation and changes to research plans, audio recordings, and interview transcripts. Rationales for decisions made during the study were documented to ensure the confirmability of results and the overall credibility of the research (Lincoln & Guba, 1985). Both authors reviewed transcripts and coding, with particular attention to triangulation across conditions and time (Denzin & Lincoln, 2005).

Results

Through the six points of contact made with participants, three main themes emerged around the issues of transition and discharge home. These were maternal emotions, home and family life, and the role of SLP. These three themes and their subthemes are shown in Figure 1.

In relation to maternal emotions, there were feelings of stress and anxiety associated with hospital discharge. Confidence or erosion of confidence was a recurring subtheme closely associated with anxiety about managing the baby's broader health issues, provision of information, and coping with unpredictable feeding. For those who saw positive changes and progress with feeding, going home was affirming and enhanced a sense of pride, self-worth, and achievement as well as an increased sense of control over the environment. The mother with a tube-fed baby at the time of discharge presented as more stressed and uncertain at home than the mothers of orally fed babies.

Life at home was also a key theme involving, for example, responsibilities to other children, the aim for a normal routine, and having other family members to call on. Participants felt empowered by being able to educate family members regarding issues such as tube feeding. Once home, questions arose, particularly around the baby's development, timelines for achieving goals, and how SLP might help with these issues. In relation to the third theme of the SLP role, the four mothers in this study appreciated SLPs' depth of knowledge on practical issues, for example, about choices around of bottles or teats, what kind of foods to try, or how to encourage their child to try something new. They often had queries or needed help to make sense of information that they had already been given. They wanted to discuss issues during regular visits on the ward and they appreciated getting to know the SLP and seeing the SLP get to know their child. However, initially, mothers were not always aware of the role and responsibilities of SLPs with regard to feeding. Tia was "quite shocked... to find out that you were under speech [she and her son would receive support from a speech-language pathologist], 'cause I said to them that he doesn't talk yet". This highlights the importance of clear introductions in an environment where many professionals come into contact with parents on the wards.

Stories which emerged from the interviews help illustrate some of these themes and subthemes. An example of the

importance of good planning and communication can be found in Mel's report of an incident where she perceived mixed messages from the nursing staff and Feeding Team (SLP, dietetics, and occupational therapy). Her baby had been recommended by the SLP and dietician to have a nasogastric tube placed but, over the weekend (when the Feeding Team were not present), he pulled it out. The nursing staff assured her that he did not need it and it was not reinserted. While there may have been good reasons for the clinical decisions made, Mel's view was that the situation was unclear: "it does get a bit confusing when that was the plan, and then the plan's now changed". She suggested: "I think they should all communicate a bit more together, maybe, which would make it easier on the parents".

A second example illustrates the vulnerable position of parents at discharge. Charlotte felt she had inadequate information: "It was unfortunate that the SLP was only able to observe one feed... His feeding is very erratic and we don't know why as yet". She felt underprepared in managing her baby's nasogastric tube at discharge. She wrote:

Things I have not been told include the long term impact of having a tube, how long they will leave the tube in, if the tube will affect his speech, if the tube is in long term are there other options that are not so visual, how the tube will impact on the introduction of solids. I have also not been given much information on how to gravity feed and ways to make tube feeding more easy in a busy household.

In her second (emailed) interview, Charlotte reported turning to the internet to get information: "Luckily there are a lot of online forums and Facebook pages about tube feeding that I have been able to access for support". While such sources of information may be helpful, it is important that SLPs are aware of parents' ongoing need for support, and remain accessible sources of reliable and evidence-based information both within hospital and after discharge.

Discussion

The aim of this study was to gain an initial understanding of mothers' experiences of discharge from hospital to home with a baby with feeding issues, and the role of SLP in that discharge and transition. There is little published research with this group of clients and, following discharge, there are limited opportunities for them to share their experiences with their SLPs (Dodrill, McMahan, Donovan, & Cleghorn, 2008). The results of this study confirm VanDahm's (2010) position that discharge from hospital does not necessarily signify the end of the need for SLP support and involvement, and that a smooth and well communicated transition to outpatient or community services may be necessary.

In line with the findings of Fowlie and McHaffie (2004), while individuals were glad to be home, frustration and anxiety increased over time if follow-up supports were not available. The mention of the internet as an important information and support source is not surprising but it does show that the SLP has a role in providing ongoing, reliable, and high-quality information for families following discharge. The desire for clear and consistent information found in this study was noted in previous research (e.g., Adams, Gordon, & Spangler, 1999; Hoddinott & Pill, 2000) which found that inconsistent advice from health professionals concerning the management of a baby with feeding issues is not unusual, especially when tube feeding is involved.

Our findings indicate that families place great importance on SLP services, and value the support given through effective communication. Collaboration with SLPs may help mothers to feel involved and valued, and to have an ongoing, positive impact on the discharge and transition process. This helps ensure mothers are up-to-date with current management plans and skill acquisition, facilitating a greater understanding of their child's feeding. Participants felt reassured by back-up plans to cope with erratic feeding behaviours or changed circumstances, especially once home. These findings reinforce the notion of individualised, tailored intervention for each family and highlight the need for preparation prior to discharge. Consistent SLP involvement may ensure that, even if discharge were to occur unexpectedly, mothers already understand their situation and feel in control of the feeding arrangements. This is important, as Bernstein et al. (2002) suggest that perceptions of readiness for discharge vary between mother and health professional.

Limitations

This was a pilot study exploring a relatively new area motivated by previous literature suggesting discharge and transition home is time of stress and confusion for parents (Hewetson & Singh, 2009). While the sample size of four mothers was small, the results have hinted at the richness of these women's experiences (Liamputtong, 2009) and are thus a useful addition to the field. Obviously, it would have been better to have a larger sample, and two interviews with each of the participants to examine their experience over time, but the emergence of recurrent themes across the four participants adds strength to the findings. The participants were carefully chosen by their SLPs and therefore there was sampling bias. Despite maintenance of external confidentiality (pseudonyms and de-identified data), internal confidentiality would be hard to assure considering these SLPs' knowledge of the participants and their circumstances (Tolich, 2004). However, participants were assured that their involvement in the study would have no impact on their ongoing treatment and care. The authors of this paper had no previous or ongoing relationship with the participants in the study. SLPs may benefit from further research in the area, including the experiences and role of fathers during this time. A larger, longitudinal study exploring the long-term impacts of feeding issues on families may add to the current literature, facilitating holistic practice.

Conclusion

SLPs play a vital role within the paediatric dysphagia team in the physical and emotional management of mothers with babies experiencing feeding difficulties. This research confirms professional recommendations (Speech Pathology Australia, 2003) but also permits an initial understanding of the experiences of mothers at the time of discharge and transition home. Considering the enormous stress for parents of having a baby who does not feed well, and the added impact of dysphagia in babies already experiencing potentially complex medical circumstances, it is imperative to understand how families might best be supported. At discharge, there is a tension between the desire for normal return to a home routine and the need for ongoing professional support to handle possibly unpredictable and upsetting feeding behaviours. Even simple practices like provision of both written and verbal information, contact details, follow-up arrangements and back-up plans can

make considerable difference. But this study also shows that mothers want to be acknowledged, informed, and involved in decisions as a member of the team with options for flexible, ongoing feeding-related support after their babies are discharged from hospital.

Declaration of conflicting interests

The authors report no conflicts of interest. The authors alone are responsible for the content and writing of the paper.

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Shared reading between mothers and children with autism or specific Language Impairment

An exploratory study

Alison Arndt and Joanne Arciuli

KEYWORDS

AUTISM

SHARED READING

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THIS ARTICLE HAS BEEN PEER-REVIEWED

Shared reading (SR) has many benefits for children’s reading development, yet we know little about SR in families where children have a developmental disability. This study reports on 2 cases of SR in mother–child dyads. One child was diagnosed with autism spectrum disorder (ASD), and the other with specific language impairment (SLI). SR interactions were video-recorded and each mother’s utterances were analysed. Results revealed some evidence to suggest that the mothers in our study were able to adapt their utterances during SR to address their children’s specific needs. With speech-language pathologists increasingly being asked to advise on children’s literacy, this study provides a framework for monitoring the input that parents provide to their children during SR.



Alison Arndt (top) and Joanne Arciuli

Shared reading (SR, also referred to as “shared book reading”, “home-based reading”, “family literacy”, or “parent–child reading”), where a parent reads with their child, has a number of positive benefits with regard to children’s reading acquisition. By engaging in SR, adults provide a structured, yet naturalistic, setting to develop children’s language and literacy skills (e.g., Audet, Evans, Williamson, & Reynolds, 2008; Barachetti & Lavelli, 2011; Evans, Barraball, & Eberle, 1998). As some children with autism spectrum disorder (ASD) or with specific language impairment (SLI) are at risk for literacy difficulties (Catts, Bridges, Little, & Tomblin, 2008; Nation, Clarke, Wright, & Williams, 2006), it may be especially beneficial for these children to engage in SR interactions. However, to date, the majority of SR research has examined typically developing children. There has been much less research on SR within special populations. In the current study, we were interested in exploring mothers’ input during SR for a child with ASD and a child with SLI. The overarching aim was to provide a framework for monitoring mothers’ input during SR that can be used by speech-language pathologists.

ASD and SLI

Autism spectrum disorder is a group of neurodevelopmental disorders which affect the way individuals function and interact with people and their environment. According to

the *Diagnostic and Statistical Manual of Mental Disorders*, 5th edition (DSM-V), a diagnosis of ASD is characterised by impairments in social interaction/communication, and restricted, repetitive, and/or sensory behaviours (American Psychiatric Association, 2013). A seminal study explored the reading performance of 41 children with ASD aged 6–16 years (Nation et al., 2006). Half the sample obtained scores that were age-appropriate or above on tests of reading accuracy. Of these children, more than half had relatively poor comprehension. This suggests that regardless of how well some children with ASD can decode words, reading comprehension can sometimes be adversely affected. This finding was supported in a study by Arciuli, Stevens, Trembath, and Simpson (2013), and in a recent review which highlighted that some children with ASD experience particular difficulties with reading comprehension, despite having adequate word identification skills (El Zein, Solis, Vaughn, & McCulley, 2014).

Specific language impairment refers to the presence of impaired oral language, despite no other physical or cognitive impairments (Bishop & Adams, 1990). Some children diagnosed with SLI experience difficulty with literacy development (Catts, Bridges, Little, & Tomblin, 2008; Catts, Fey, Tomblin, & Zhang, 2002). It has been estimated that 51% of children with SLI have impaired reading (McArthur, Hogben, Edwards, Heath, & Mengler, 2000). A study by Botting, Simkin, and Conti-Ramsden (2006) examined the reading ability of 200 children with SLI at age 7, and again at age 11. They found that 82% of poor word readers at age 7 had poor reading accuracy at age 11. This pattern of results mirrored earlier data which suggested that children with persisting language difficulties at age 5½ had reading difficulties at age 8½ (Bishop & Adams, 1990). Of course, poor reading accuracy is often related to poor reading comprehension. Some studies have highlighted that children with SLI can also show weakness in reading comprehension (Botting et al., 2006; Catts et al., 2008; Nation, Clarke, Marshall, & Durand, 2004). Despite this, there appears to be less evidence of particular weaknesses in comprehension in the SLI literature than the ASD literature.

In summary, children with ASD or with SLI can present with a variety of reading profiles. Some children perform at average or even well above average levels, when compared with typically developing peers, while others face difficulties learning to read. These reading difficulties may involve accuracy and/or comprehension. Much of what we know about reading in children with ASD or SLI has come from studies that have used standardised tests of reading

ability. Very little research has examined more naturalistic SR contexts, such as mother–child dyads observed in the home environment.

Parents’ role during shared reading

An important aspect of SR is parental involvement. Previous research has suggested that the inherent social-emotional relationship between a parent and their child can be an asset in oral and written language acquisition during SR (Aram & Shapira, 2012; Colmar, 2014; Trivette, Simkus, Dunst, & Hamby, 2012). Using this relationship while reading, parents can scaffold their child’s responses by building upon existing linguistic units and encouraging the development of new skills (Abraham, Crais, & Vernon-Feagans, 2013; Vogler-Elias, 2009). In addition to literacy development, research suggests that parents and children engage in SR for a range of other purposes, including bonding, entertainment, empowerment, and cognitive stimulation (Audet et al., 2008).

Although the majority of SR research has been conducted with typically developing children, some studies have focused on special populations. A study by Bellon, Ogletree, and Harn (2000) examined parental scaffolding during repeated storybook reading with a child with ASD (described as “high functioning”) who was an emergent reader. In addition, recent doctoral theses by Plattos (2011) and Pamparo (2012) have examined the effects of multiple sessions of dialogic SR on language and literacy outcomes of preschool children with ASD (or with ASD characteristics) who were also emergent readers. Results of these studies have revealed a strong correlation between the amount of scaffolding provided by the parent, and the child’s development of language skills. A recent study by Arciuli, Villar, et al. (2013) examined a single session of SR between parents and 11 school-aged children with ASD who were conventional readers.

In addition to the previous studies that have examined ASD populations, another special population was explored in a study by Skibbe, Moody, Justice, and McGinty (2010). This study examined reading interactions between mothers and their preschool children with language impairment. This study highlighted the importance of mothers being responsive to their child’s unique needs during SR interactions. With only a handful of studies on SR in these special populations, there is value in further examining SR among children with developmental disabilities. In the current study, we examined mothers’ utterances during SR with a child with ASD and a child with SLI.

Current study

We present case studies of SR interactions in families with children who had been diagnosed with ASD or with SLI. We focused on participants who were conventional (rather than emergent) readers. As part of their toolbox, speech-language pathologists can encourage parents to engage in SR in an effort to gain awareness of their children’s reading skills and, if necessary, focus their efforts on particular weaknesses that their child might be experiencing. The primary aim of the current study was to provide a framework that speech-language pathologists can use to assist with monitoring SR.

Method

Participants

One mother (M-ASD) had a child who received a clinical diagnosis of ASD (C-ASD). The other mother (M-SLI) had a

child who received a clinical diagnosis of SLI (C-SLI). Parents responded to advertisements for research participation based on having already received a clinical diagnosis. Tables 1 and 2 outline the demographic information for each participant.

Table 1. Demographic information for mothers: M-ASD and M-SLI

Factors	M-ASD	M-SLI
Gender	Female	Female
Age	42	43
Number of children	3	3
Employment	Stay-at-home mother	Part-time work
Socio-economic status	Middle class	Middle class
Native language	English	English
Education	Undergraduate degree	Year 12
Speech-language history	Childhood stuttering	Nil reported

Note. M-ASD = Mother of the child diagnosed with autism spectrum disorder, M-SLI = Mother of the child diagnosed with specific language impairment, Age expressed in years.

Table 2. Demographic information for children: C-ASD and C-SLI

Factors	C-ASD	C-SLI
Gender	Male	Male
Age	8;3	10;9
Year of schooling	2	4
Co-diagnosis	Apraxia	ADD
Education	Mainstream primary school	Mainstream primary school
Native language	English	English
Hearing	Normal	Normal
Vision	Wears glasses	Normal

Note. C-ASD = child diagnosed with autism spectrum disorder, C-SLI = child diagnosed with specific language impairment, ADD = attention deficit disorder, Age expressed in years;months.

Based on the results of standardised testing (NARA-3, (Neale, 1999), C-ASD scored in the 100th percentile for reading accuracy, and in the 98th percentile for reading comprehension. C-SLI scored in the 80th percentile for reading accuracy, and in the 96th percentile for reading comprehension. Both children had a reading equivalency age of around 13 years. Thus, the children in our study were conventional readers who performed well in terms of reading accuracy and comprehension on this standardised test.

Procedure

The SR interactions were undertaken in participants’ homes. Each dyad chose a quiet, comfortable seating

Table 3. Definition and examples of types of EC and OT utterances

Type of utterance	Definition	Examples from data
EC Providing correct word	Mother verbalises correct pronunciation of word in an anticipatory or correctional style	“Volunteers”
Sounding out	Mother encourages child to sound out word either independently or in unison	“Eu-ca-lyp-tus”
Encouraging correction	Mother questions child to determine if he is correct	“Does that sound right?”
OT Praise	Mother gives child positive verbal contingencies	“Good boy”
Referring to images	Mother draws child’s attention to pictures/illustrations	“Look, what’s this? (points to picture)”
Comprehension monitoring	Mother questions child on content	“Tell me, what did you just read here?”

Note. EC = error correction, OT = other.

arrangement. Participants were instructed to read as they would normally at home. A video camera was set up on a tripod stand, and the researcher sat out of view as the interaction was video-recorded for 5 minutes. Both children were presented with an unfamiliar book supplied by the researcher – *Volcanoes and Other Natural Disasters* (Griffey, 1998). This non-fiction book contained written passages and colour photos depicting types of natural disasters (e.g., bushfires). Published by DK Readers, this book is classified as a Level 4, aimed at children 8–10 years of age (Dorling Kindersley, 2015). Text readability analysis confirmed that this text would be read comfortably by children reading at the level of typically developing 13–14 year olds (Readability Test Tool; Simpson, 2009–2014).

Results

Word-level accuracy measures were calculated as the number of words read correctly during the SR divided by the total number of words that were read. C-ASD read 86% of words correctly, and C-SLI read 76% of words correctly. This confirms that the children were reading a book of an appropriate level. Moreover, both children appeared to be engaged in the SR interaction as they were initiating the reading, and appeared to be quite responsive to their mothers’ questions and comments. A recent study suggested that initiation and responsiveness are key indicators of a child’s engagement in book reading (Colmar, 2014).

For the purposes of this study, we were solely interested in the mothers’ utterances. Drawing on previous research by Arciuli, Villar, et al. (2013) we explored two main types of utterances used by the mothers in their interactions: error correction (EC) or other (OT). An EC utterance was defined as correcting the child’s reading error or dysfluency. Remaining utterances were classified as OT, and were defined as praise, comprehension monitoring, and referring to images. Reliability measures on classifying these utterances were conducted by an independent rater on 20% of the data and resulted in 100% agreement. Table 3 outlines the definitions and examples of the types of EC and OT utterances.

Across the entire SR interaction which contained 49 utterances by M-ASD, 46.9% were EC, and 53.1% were OT. Across the entire interaction which contained 88 utterances by M-SLI, 87.5% were EC, and 12.5% were OT. In terms of some of the subtypes of EC utterances, the data indicated that “providing the correct word” accounted for 28.6% of all of M-ASD’s utterances, and 51.1% of all

of M-SLI’s utterances. In terms of some of the subtypes of OT utterances, “comprehension monitoring” accounted for 18.4% of all of M-ASD’s utterances, and 1.1% of all of M-SLI’s utterances. Both M-ASD and M-SLI used a similar proportion of OT utterances in the form of “praise” (8.2% and 8.0% of all of their utterances, respectively).

Discussion

In this study we explored the characteristics of naturalistic mother–child interactions during SR when a child had been diagnosed with ASD or with SLI. Across the entire interaction, M-ASD used more OT utterances compared to EC utterances. OT utterances were defined as praise, comprehension monitoring, and referring to images. This is evident, for example, when she pointed to a picture during the SR and explained “...bursting into flames. See, all the bush here is on fire and the trees have burst into flames”. In contrast, M-SLI demonstrated a clear preference for EC utterances which pertained to providing the correct word, sounding out (e.g., “Stay-di-um, stadium”), and encouraging correction (e.g., “No, not ‘tried’, say it again”).

With regard to subtypes, M-ASD appeared to focus more on OT utterances in the subtype of “comprehension monitoring” compared to M-SLI. Previous research suggests that some children with ASD experience particular difficulties with reading comprehension (Arciuli, Stevens, et al., 2013; El Zein et al., 2014; Nation et al., 2006). Although C-ASD scored above average during standardised testing, he appeared to exhibit a relative weakness with reading comprehension in terms of reading the book we selected for the current study. This was reflected in the proportion of comprehension monitoring utterances used by his mother in their interaction. By contrast, M-SLI had a higher proportion of EC utterances in the subcategory of “providing the correct word” compared to M-ASD. Previous research suggests that some children with SLI experience particular difficulties with reading accuracy (Catts et al., 2008; McArthur et al., 2000). Although C-SLI scored above average during standardised testing, he appeared to exhibit a relative weakness with reading accuracy in terms of reading the book we selected for the current study. This was reflected in the proportion of “providing the correct word” utterances used by his mother in their interaction.

There are several limitations to consider when interpreting the results, and considering directions for future research. It may be that SR interactions vary across sessions. Hence, it would be interesting to further investigate SR in these populations across multiple interactions. Also, there is some

evidence to suggest that the genre of the chosen book is related to parents' behaviours during SR (Stader & McEvoy, 2003). Interestingly, some research has shown that there could be increased frequency of communicative exchanges with non-fiction compared to fiction books (Anderson, Anderson, Lynch, & Shapiro, 2004).

We believe the interactions described in this study represent typical SR sessions for these mothers and children. However, we acknowledge that it is difficult to know for certain whether our participants were reading together as they would "normally". This limitation is inherent in almost any study of reading behaviours. In any case, by examining SR we have tried to capture more naturalistic reading behaviours than is possible using standardised testing.

Conclusion

It could be hypothesised that the mothers in our study were aware of their children's relative weaknesses and chose to target these areas of reading during their SR interactions. Indeed, a recent study indicated that mothers are able to tune their language to their child's own linguistic limitations during SR interactions (Majorano & Lavelli, 2014). However, we expect that some parents may require the assistance of a speech-language pathologist in identifying their child's strengths and weaknesses, and in learning about the different kinds of input that they can provide during SR. Our study provides a framework that speech-language pathologists can use to monitor SR between parents and their children within ASD and SLI populations and within other special populations.

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Webcam delivery of the Lidcombe Program

Insights from a clinical trial

Kate Bridgman, Susan Block, and Sue O'Brian

Webcam delivery of the Lidcombe Program for preschool children who stutter was recently found in a randomised control trial to be effective and efficient. This paper details the unexpected clinical observations that the speech-language pathologist (SLP) made while treating preschool families via webcam during the trial. These included observations regarding participant convenience, behaviour, attendance, treatment preparation, readiness, and representativeness, as well as clinical boundaries and relationships. Recommendations are made for SLPs considering webcam intervention with children who stutter. Some of these recommendations may also be relevant to SLPs engaging in webcam treatment delivery with other client groups.

Early intervention, in particular the Lidcombe Program, provides children who stutter with the best opportunity to overcome their stuttering (Jones et al., 2005) and to avoid the lifelong complications associated with the disorder. The Lidcombe Program is a behavioural treatment for early stuttering. Parents attend weekly consultations with their child and a speech-language pathologist (SLP), during which they are taught to administer verbal contingencies for stuttering and stutter-free speech in the child's natural environment (Packman, et al., 2011). The first stage of the program involves parents learning to administer parent verbal contingencies to the child's speech in everyday conversations. The second stage commences once the child has achieved no stuttering, or minimal stuttering in their speech. Treatment is then gradually withdrawn. Despite the potential benefits of the Lidcombe Program, many children are unable to access this efficacious treatment due to distance and lifestyle factors (Verdon, Wilson, Smith-Tamaray, & McAllister, 2011).

One solution to this problem is to deliver the treatment via webcam over the Internet. This service-delivery model was designed to increase access to timely, best-practice intervention for those who are currently unable to access treatment (Lowe, O'Brian, & Onslow, 2014). It also reduces the costs and resources involved with outreach service provision, provides more convenient home-based treatment

for young children, and ensures more equitable service delivery for rural and remote preschool-aged children and their families. A Phase I study showed that webcam delivery of the Lidcombe Program was a viable treatment delivery model (O'Brian, Smith & Onslow, 2014). The findings paved the way for a randomised controlled trial (RCT) comparing standard in-clinic Lidcombe Program treatment with home webcam delivery (Bridgman, 2014) that is the basis for observations made in this article.

The trial utilised a parallel, open plan noninferiority RCT design involving preschool-aged children with stuttering. The control group received standard delivery of the Lidcombe Program (Packman, et al., 2011) in a traditional clinic setting. The experimental group received the Lidcombe Program within their homes using a computer, a webcam, the Internet and a live video calling program (Skype). The use of webcams and live video conferencing, compared to previous, low-tech telehealth (phone and mail) trials of the Lidcombe Program, allowed the principles of standard delivery of the Lidcombe Program to remain relatively unchanged. The SLP-parent-child triad was preserved, with all parties maintaining live interactions. Real-time measurements, observation and education for parent implementation of the program were also achieved through this medium. Thus, treatment could be delivered in accordance with the program treatment guide (Packman et al., 2011, p. 1).

Forty-nine children were randomised to the trial. The participant group consisted of 37 boys and 12 girls, aged 3 years 0 months to 5 years 11 months at the time of assessment. The mean age of the clinic group was 4 years 2 months ($SD = 9.8$ months) and for the webcam group 4 years 5 months ($SD = 9.5$ months). The primary outcome measure (treatment efficiency) was the number of consultations and SLP hours required for children to attain Stage 2 of the Lidcombe Program, in which children display little or no stuttering over a sustained period of time. The secondary outcome measures – stuttering reduction as measured by parent-evaluated severity ratings and percentage of syllables stuttered – were used to evaluate treatment efficacy. Quantitative and qualitative data were also obtained from parent questionnaires. The number of weeks to attain Stage 2 entry was also measured.

Results from this trial were extremely encouraging with many families seeming to prefer this method of delivery. RCT results hope to be detailed in an upcoming publication.

KEYWORDS

LIDCOMBE PROGRAM

PAEDIATRIC

STUTTERING

TELEPRACTICE

TREATMENT

THIS ARTICLE HAS BEEN PEER-REVIEWED



Kate Bridgman (top), Susan Block (centre), and Sue O'Brian

The potential for community translation of these findings is considerable. Children as young as 3 years of age can receive the same stuttering treatment within their homes as they would within a clinic, with equally positive outcomes and experience, irrespective of where they live. This finding was significant, given that children as young as 2 years of age can be negatively affected by their stuttering (Yairi, 1983).

Clinical insights

This article aims to share the clinical observations and recommendations of the treating SLP (first author) in the webcam Lidcombe Program study with the view to empower and up skill fellow SLPs. This article is not a qualitative study of the researchers' or participants' experiences, but rather an opportunity to share clinical insights garnered from the trial through observations and informal conversations with study participants over the two-year period the treating SLP spent using webcam delivery.

Convenience

The first observation related to convenience. The rationale for webcam treatment is typically to increase access to a service for rural and remote populations. The interesting trend in this study, however, was that despite having access to local speech pathology services, the metropolitan parents generally reported webcam treatment to be more convenient than clinic-based consultations. The convenience extended beyond increased access; it provided a family-friendly service option that was easier for families with young children. Families did not have to travel to a clinic; they just had to prepare a few resources and turn on their computer. The inconvenience of travelling to a clinic was reported by families, despite many living within a 10-kilometre radius of the clinic site, hence supporting the notion that even short distances can be a limitation to attending any clinic-based service.

Families reported additional benefits, including the fact that they could schedule appointments at times when siblings were out or occupied. Many webcam families were still able to attend consultations even when the participating parent, sibling, or child was unwell. For example, webcam delivery supported the continuous treatment of one child whose parent had a chronic health condition, and many webcam families even continued to attend consultations while holidaying interstate and overseas. Nevertheless, despite these benefits and the fact that outcomes did not differ between webcam and clinic-based delivery groups, a small group of webcam families displayed beyond-consultation behaviours that were not considered to be conducive to positive treatment outcomes.

Attendance

Statistically, there was no difference in regularity of attendance between the groups. Differences existed in the way families communicated about absences. In the case of webcam families, there were more cancellations on the day of the scheduled consultations, with a large proportion being within 15 minutes of the consultation. Webcam families were also less likely to inform the SLP if they were running late. It is unclear whether these issues were related to treatment readiness, whether the families valued this service delivery less, or perhaps were just influenced by the "convenience" factor. It is also possible that these families would have behaved in the same way if they had been



randomised to the clinic group. An additional point to consider is that of fees or cancellation policies that are present in some clinics and that may support attendance and cancellations in a timely manner.

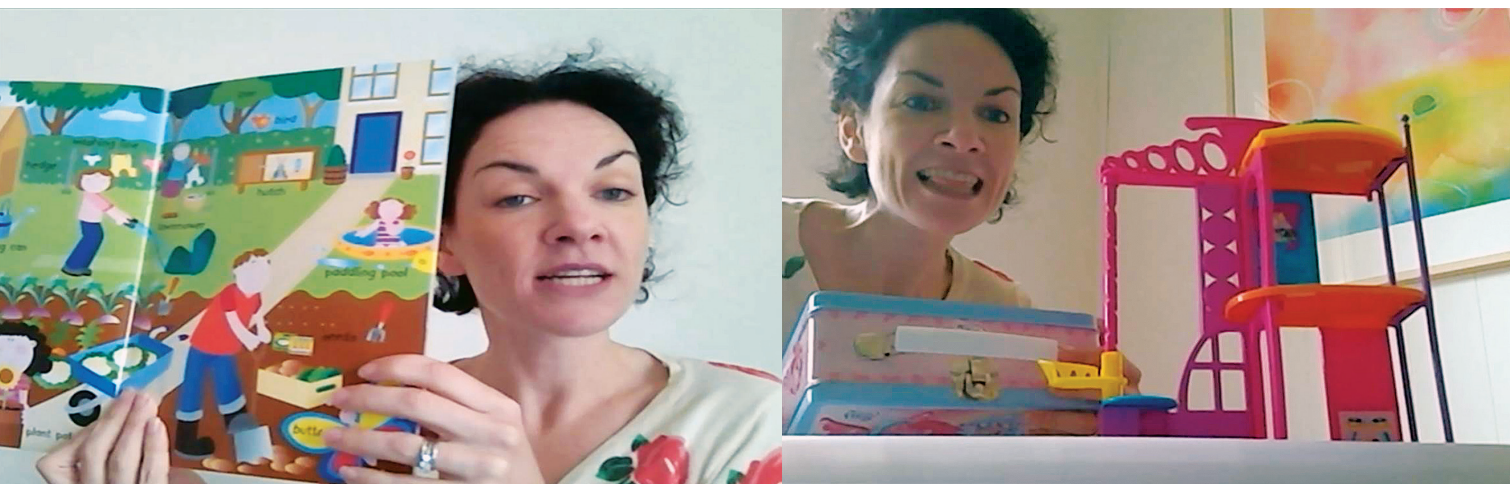
Consultation times

To ensure that all families were given equal opportunities, and to avoid bias to either group, consultation times were offered between the standard operation hours of the treatment clinic: 8am to 6pm on weekdays. Consequently, some working parents in both groups had to alter their working hours or days. Clinic children who attended late appointments had rarely been home beforehand, resulting in a late appointment being just an extension of their day outside of the home. These children were typically compliant and engaged for the duration of the consultation. By contrast, the webcam children had returned home from their day at school or childcare, and were often interested in playing within the home, spending time with siblings, or eating, rather than complying with treatment. If children are to attend appointments via webcam, it is recommended that parents be supported in establishing a routine conducive to active engagement in consultations.

Treatment preparation and readiness

To prepare properly for webcam sessions, first parents needed to organise their day to ensure that they and their children were home for the scheduled appointment. Second, parents needed to source appropriate resources and had to have the severity rating sheet accessible at the computer before the consultation began. Finally, the parents needed to prepare their children for the session, by explaining at what time it would occur, to avoid children protesting at being taken away from a preferred activity unexpectedly. Although the majority of webcam families were ready at the time of their consultation, a small group of families were not, apparently due to a lack of organisation. Although webcam consultations required less organisation on the part of the parents in relation to travelling, parents still needed to organise themselves and their children to participate in the webcam consultation. Failure to prepare resources impacted the family's ability to participate fully in all Lidcombe Program treatment session components.

To help parents prepare themselves and their children for the consultation, it is recommended that the SLP talk in advance about the likely structure of the consultation. When the parent and SLP are involved in discussion, it may be helpful if the parent has an activity set up for the



Screenshots of webcam delivery

child close by. Then, once the child is required to talk with the SLP, the parent should be asked to have prepared some toys or items of interest to assist discussion. The SLP may suggest that the parent prerecord an audio or video sample that demonstrates the child stuttering, or parent-child treatment. These recordings can be shared with the SLP via email or a secure file sharing website, as is currently recommended in the standard treatment guide.

During initial sessions, the SLP may also engage in a brief discussion about positioning, recommending that seating be considered to allow the child to sit on his or her own chair ensuring the child is fully visible on the computer screen. If using a laptop, the SLP and parent may discuss where would be appropriate to set up for the consultation. If possible, a room away from other family members and household distractions rather than open living spaces should be used. Webcam consultation guidelines should also be explained. These could include: (1) the SLP will place the call at the scheduled time, (2) the parent must remain with the child at the computer; the child is not to be left alone, and (3) the parent is asked to cater for siblings during this time to avoid disruption.

For the majority of webcam consultations during the trial, the SLP placed the call and was greeted by the participating family who were ready to start. Some parents preferred to have initial discussions without their child and then call the child into the room when required. When parents had prepared their children, telling them in advance they would be having the consultation, the children would come immediately and be compliant. When parents had not pre-warned their children about the consultation, the children would often protest about being removed from the activity they were engaged in. Furthermore, parents who did not prepare an activity to occupy their child during the parent-SLP discussion were often interrupted, or the child would leave the room. The same situation arose when parents had not pre-planned their treatment resources. They would either select items they could quickly access or attempt to deliver treatment without appropriate games or resources, which often led to the child being uninterested and the conversation dissolving. This ad-hoc approach also limited the feedback the SLP could give the parent about treatment, because it was not representative of the treatment parents provided at other times during the week.

Defining the clinical space

Clinical space and rules or boundaries were largely pre-defined and understood by the majority of webcam families. However, a subset of families did not adhere to

common or assumed clinical boundaries. Several parents often left their children at the computer without warning, answered their phones during sessions, and attended to non-treatment-related tasks. Beyond the consultation, this same group of webcam families cancelled consultations or communicated if they were running late less frequently than the remaining webcam families. They forgot several consultations or asked to have consultations shortened due to competing lifestyle demands. Such behaviour suggests the need to explicitly define clinical boundaries when using webcam as the service-delivery model.

Behaviour management

The greatest challenge for the SLP delivering the webcam treatment was behaviour management. This issue was twofold. Initially, webcam children at times appeared to be less compliant. Superficially, their reduced compliance could have been attributed to the service-delivery model (i.e., webcam versus clinic consultation). However, when the "difficult" children were observed more closely, there appeared to be some common variables: their parents had not prepared them for the consultation and were not prepared themselves. These children were often not seated appropriately and were not given things to do during the initial parent-SLP discussion. In these families, the parents appeared less direct or controlling in the general management of their child, allowing the child more freedom in behaviour and compliance. It became evident that with these families, the success of the consultation was largely based on the parents' ability to control their children's behaviour rather than the SLP's ability.

On reflection, it was these incidents that highlighted a difference in SLP, parent, and child behaviour across the two settings. Within the clinic, the SLP was direct with respect to the rules of the clinic room, how the resources were to be used, and what behaviour was acceptable. During webcam consultations, the SLP did not have a physical space to assist with setting the boundaries. Rather, the treatment space, for the children at least, was within the family home. Consequently, the children tended to behave in the same manner they did at home.

An additional issue related to clinical space concerned safety and duty of care. Within the clinical environment, if a parent leaves a child with an SLP, the SLP is responsible for what happens to the child. The SLP and child share the same environment so the SLP can intervene, physically if required, to maintain the child's safety. During a webcam consultation, however, the SLP cannot do so, raising concern as to the SLP's responsibility for a child who is

left unattended during a webcam consultation. These instances raised the alert about a need to further develop a contingency plan for such an occurrence, to protect the SLP and further define duty of care. Possible contingencies could include the SLPs stating that they will immediately discontinue a call if a child is left unattended, abdicating any responsibility for supervising the child, or stating that the child is the sole responsibility of the parent for the entirety of the consultation.

On a more positive note, the neutral treatment space created by the online delivery allowed both parties to be comfortable and safe in their own environments, supporting the establishment of a balanced parent–SLP relationship. Given the use of technology, the environment established could be considered a “virtual” treatment space.

Webcam relationships

During the trial, parent questionnaires were used to elicit parents' views on how well rapport was developed with the SLP via webcam. These reports seemed consistent with what was experienced by the SLP. During the course of Stage 1, webcam parents reported difficulties, spoke of stressors, and demonstrated emotional responses during these discussions. They often engaged in further discussion of the challenges of treatment or life stressors affecting their ability to apply treatment, or they expressed their fears and concerns for their child who stuttered. At these moments, the parent would dismiss the child from the room, start the consultation without the child, or wait until the consultation was finished so that they could direct the child to another activity. Such discussions were viewed by the SLP as part of the problem-solving element of the Lidcombe Program treatment process. In allowing the parent to communicate those feelings and discuss in detail and length the challenges or emotions, the SLP could then support the parent and adapt the program accordingly.

During initial consultations, the webcam children often asked where the SLP was physically located. As the consultations progressed, and the children became familiar with the consultation routine, they asked eagerly what resources the SLP had to share with them. Furthermore, the children often prepared their own resources and were also more likely to relate the SLP's comments or questions to items they had in their home, leaving the computer to source the desired item. Clinic children rarely bought personal items from home to share with the SLP during clinic consultations. These observations support the individualisation of the Lidcombe Program as recommended in the standard treatment guide, as it also allows the SLP to better know and understand the child's interests and everyday life. The webcam delivery also helped the SLP to establish relationships with other family members who often greeted her when walking past the computer.

Discussion

Given the non-inferiority finding of the RCT comparing webcam delivery of the Lidcombe Program with standard clinic delivery, clinical translation may now be feasible and appropriate given that Speech Pathology Australia: “supports the use of telepractice ... where telepractice is based on current evidence-based practice and is at least equivalent to standard clinical care” (Speech Pathology Australia, 2014, p. 5). Such positive reception of webcam treatment received by metropolitan-based families is

consistent with previous findings of webcam delivery treatment to a preschool population (Ciccia, Whitford, Krumm & McNeal, 2011). Ciccia et al. also reported that participant families were highly satisfied with the low-tech technology that was used.

Unexpected clinical observations made during webcam delivery of the Lidcombe Program related to convenience, clinical behaviour, treatment preparation, defining the clinical space, behaviour management, and developing relationships. Such observations are significant as a recent review of peer-reviewed telehealth stuttering papers written in the past 20 years stated that “clinical and technical guidelines are urgently needed” (Lowe et al., 2014, p. 223). A literature review of paediatric speech and language assessment efficacy and effectiveness concluded that parent reports, clinical observations and details, and technology procedures are not routinely reported in current paediatric telehealth literature (Taylor, Armfield, Dodrill & Smith, 2014). Given the lack of precedent, or reported clinical guidelines for working with preschool families via webcam, the observations reported should be considered by SLPs who engage in webcam SLP services with this population. Specific recommendations are made following the clinical observations reported in this paper.

Technological requirements

Potential families should have a computer and webcam, with Internet that supports real-time audio and visual connection. A pre-treatment webcam and Internet test is recommended to confirm reliable and consistent Internet connections exist prior to the first appointment.

Parent factors

It is recommended that the parent requirements for a webcam consultation are explicitly discussed prior to treatment. Parents should be informed what will be expected of them in terms of preparing resources and managing their child's behaviour. More general discussion of the parent's behaviour management style and ability to sustain their child's attention may help to determine if webcam is a suitable option. Such discussion also provides transparency for the SLP. If expectations and requirements are clearly discussed and agreed to initially, it may be easier to engage in discussion addressing parent failure in preparing or managing the child during the treatment process.

Child factors

The greatest factor in a child's compliance and participation in webcam consultations was viewed to be the parent's ability to prepare the child and manage the child during consultations. No other significant predictor variables or traits were found in the subsets of children being more or less likely to have successful webcam consultations (Bridgman, 2014). Age and severity were not found to be factors. In two cases, webcam children were given the role of being responsible for the technology. This approach seemed to appease these two children who were observed to have a very “own agenda” presentation. It is recommended that the child be given clear guidelines as to what is expected of him or her also, and that a general session structure is agreed upon and explained to the child so that he or she becomes used to the consultation routine. Such an approach could be based on the typical Stage 1 Lidcombe Program session sequence as detailed in the current treatment guide (Packman et al., 2014, p. 10).

Resources

Resource materials are required for daily treatment in the Lidcombe Program regardless of how consultations are delivered. Families using webcam are not required to have any more resources than clinic families. Part of the initial weeks of treatment for both groups involves discussing the resource materials available to respective families and adapting them for treatment accordingly. The SLP in the RCT used general paediatric clinical resource materials for both groups interchangeably. These included books, cards, turn-taking games, magnetic and felt boards, pretend-play sets, figurines, and construction toys.

Conclusion

A clinical trial (Bridgman et al., 2014) investigating webcam treatment delivery of the Lidcombe Program showed no difference in stuttering reduction measures or the number of sessions required to reach the end of Stage 1. This article outlines additional clinical observations of trends, unique to webcam delivery, during the trial. While they did not impact the outcomes as a group, individual adjustments and considerations were made throughout the treatment process. SLPs engaging in webcam treatment delivery with families should consider and plan for issues and perceptions related to convenience, clinical behaviour, treatment preparation, defining the clinical space, behaviour management, and developing relationships to maximise outcomes.

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Kate Bridgman completed her PhD investigating webcam delivery of the Lidcombe Program compared with in-clinic delivery. The study was supported by The University of Sydney and conducted at La Trobe University. **Susan Block** is senior lecturer at La Trobe University. **Sue O'Brian** is a postdoctoral fellow at the Australian Stuttering Research Centre.

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Technology in practice

The Camperdown Program

Brenda Carey, Sue O'Brian, and Mark Onslow

KEYWORDS

CAMPERDOWN PROGRAM

STUTTERING

TECHNOLOGY

THIS ARTICLE HAS BEEN PEER-REVIEWED

During the past two decades, new technologies have led to the development of telepractice in medicine generally, and speech pathology specifically. However, more recently, the influence of technology is extending beyond telepractice, affecting all that we do in the clinic. This paper uses the Camperdown Program, a treatment for adolescents and adults who stutter, to demonstrate this idea. It describes how technology may be integrated into the four stages of the Camperdown Program in ways that may make treatment more accessible, realistic, and engaging for clients. Risks to integrating technology into our clinical practice are identified.



Brenda Carey (top), Sue O'Brian (centre), Mark Onslow

Technology has been described as “the branch of knowledge that deals with the creation and use of technical means and their interrelation with life, society, and the environment” (Dictionary.com, n.d.). It influences the way we live, and consequently the way we work. In relation to speech pathology practice, it has long been used in the form of unsophisticated tools like tape recorders and rating machines. In recent years, technology has involved such devices as the Internet, computers and their many applications, iPads, recording devices, and smartphones. Arguably, in the last two decades, the influence of technology has been greatest in increasing access to stuttering treatments through telepractice. Telepractice is “the application of telecommunications technology to deliver clinical services at a distance ... for the purposes of assessment, intervention, consultation and/or supervision” (Speech Pathology Australia, 2014, p. 4). Over that time, many children, adolescents and adults in several countries have participated in clinical trials evaluating the efficacy of stuttering treatment delivered by telepractice. There are published telepractice clinical trials ranging from single case studies to randomised controlled trial designs (for a review of these see Lowe, O'Brian, & Onslow, 2014). While technology continues to drive telepractice treatment and research, today its influence arguably extends far beyond telepractice. Given this expanding influence, it seems timely to consider how technology is being used more generally in our clinical practice today. The treatment used in this exploration is the Camperdown Program (O'Brian, Onslow, Cream, &

Packman, 2003). This treatment has been chosen because it has been used both for in-clinic and telepractice clinical trials, and has outcomes from randomised controlled trials that have been published in peer-reviewed journals (Carey et al., 2010).

The Camperdown Program is a speech restructuring treatment that was designed for adults (O'Brian et al., 2003) and has since been adapted for use with adolescents (Carey, O'Brian, Lowe, & Onslow, 2014; Carey, O'Brian, Onslow, Packman, & Menzies, 2012; Hearne, Packman, Onslow, & O'Brian, 2008). Speech restructuring refers to the use of a novel speech technique to reduce stuttering (Onslow & Menzies, 2010). Data have been presented for 19 adults who stutter who have participated in two in-clinic treatment trials (O'Brian et al., 2003; O'Brian, Cream, Onslow, & Packman, 2001). In addition, data have been presented for 32 adults who stutter who have participated in three telepractice trials of this treatment (Carey et al., 2010; Erickson et al., 2012; O'Brian, Packman, & Onslow, 2008). Outcomes show that for adults, the program when delivered in-clinic and by telepractice is efficacious, has high client satisfaction, and is more efficient than traditional intensive treatment formats of other programs (for example, see Boberg & Kully, 1994; Onslow, Costa, Andrews, Harrison, & Packman, 1996; Block, Onslow, Packman, Gray, & Dacakis, 2005). Reductions in stuttering have been maintained for 6–12 months post treatment. The mean number of clinician contact hours to the maintenance stage of the treatment has ranged from 8–20. For adolescents, there have been fewer treatment trials. Data have been presented for 20 adolescents who participated in three telepractice and in-clinic trials (Carey et al., 2012, 2014; Hearne et al., 2008). Outcomes for adolescents show more variability in stuttering reduction. In the largest of these trials (Carey et al., 2014), adolescents significantly reduced their stuttering frequency and severity; however, only half of the participants reduced their avoidance of speaking situations. For the three adolescent trials, the mean number of clinician contact hours to the maintenance stage of the treatment has ranged from 11–16. For both adults and adolescents in the Camperdown Program trials, in-clinic and telepractice, reductions in self-reported severity ratings are consistent with those shown from %SS data. Satisfaction outcomes, when obtained, have also been favourable.

Assessment

Whether the consultation is in-clinic or by telepractice, for most clients engagement with technology often begins well

before our first meeting with them. If our profession mirrors the experience of other similar disciplines, our clients seek information about stuttering on websites, blogs, podcasts, YouTube videos and social media. They come to us more informed about stuttering and more aware of treatment choices and their evidence bases. They also, more than ever previously, have access to videos of influential people in politics, sports, and entertainment discussing their own experiences of stuttering and stuttering treatment. They may be well informed or misinformed. In any scenario, the client we first meet for assessment is likely to feel more empowered and is a more critical consumer of our service (McMullan, 2006).

If the purpose of assessment is to determine the client's needs and challenges, technology makes it more valid, easy, and accessible. Technology can provide speech samples that are relevant, representative and natural, taken from conversations with people with whom the client usually interacts, in the places that they occur (Karimi, O'Brian, Onslow, & Jones, 2013; O'Brian et al., 2013). Published manuscripts of clinical trials have used these methods (for an example, see Carey et al., 2010). These recordings can be emailed or shared ahead of assessment, or produced at assessment on a smartphone, iPad, or laptop to be heard during the consultation. A client who is reporting some anxiety in social situations may be asked to complete a web-based assessment, for example the assessment of Unhelpful Thoughts and Beliefs About Stuttering Scale (UTBAS; Iverach et al., 2011; St Clare et al., 2009) or the Depression Anxiety Stress Scales (DASS; Lovibond & Lovibond, 1995). At assessment, clinicians may refer clients to websites, electronic books, publications, and consumer blogs or podcasts to supplement informational counselling.

The use of technology in the Camperdown Program

Stage I: Teaching treatment components

A core component of the Camperdown Program is stuttering severity measurement, and a 9-point severity rating scale (O'Brian et al., 2010) is used for that purpose. For both in-clinic and telepractice clients, training in how to use a severity rating scale can be enhanced through observation of stuttering samples of others available on YouTube or from the clinician's own collection. To record stuttering severity ratings, a client may be provided with a variety of options. Ratings may be documented on-line, for example using Google docs or Excel graphs on a laptop or iPad, or by using a paper chart accessible on the Australian Stuttering Research Centre (ASRC; 2015) website. The aim is for clients to be provided with a method of recording stuttering severity scores that is the least intrusive and most convenient, as this is likely to facilitate treatment adherence.

Stage II: Instatement

Having taught the client a means of measuring and recording stuttering severity, the clinician instates stutter-free speech. While traditionally a clinician models the speech restructuring technique for the client, the Camperdown Program uses technology to allow teaching of a standardised speech restructuring model. This avoids relying on clinician skill to model correctly (Onslow & O'Brian, 1998). The client can choose to learn the speech restructuring technique from a man or woman, adolescent or adult, all examples can be downloaded from the website

of the ASRC (n.d.). The speech restructuring technique is taught through observation, imitation, and self-evaluation. The client is encouraged to use their smartphone or computer tablet to record their own attempts at reproducing the speech restructuring model, for comparison and evaluation.

During the instatement stage clients will practise the speech restructuring technique between clinic or Internet webcam consultations, and collect samples of that practice for review with the clinician. Discussion will take place on how that will occur – whether through self-recording using a smartphone, recording onto a voicemail, or sharing audio-visual samples using the Internet. The choice of technology will be guided by the client's usual habits, preferences, and goals. The clinician will strategically link speech practice with phone, webcam Internet or iPad use, and often all of these, to exploit conditioning to that technology. In this manner, irrespective of method of treatment delivery – in-clinic or telepractice – technology supports the strong focus on self-monitoring and self-management of the Camperdown Program. Self-monitoring has been found to provide some protection against relapse (Bothe, Davidow, Bramlett, & Ingham, 2006).

Stage III: Generalisation

The focus of stage III of the program is to transfer the speech technique to everyday speaking environments. During this stage, a regular individualised speech practice routine is established, generalisation of stutter-free speech is facilitated, and problem-solving strategies are encouraged. Technology can assist these processes in many ways. For example, clients will continue to evaluate their use of the speech restructuring technique through self-recording. Portable recording systems on smartphones allow clients to unobtrusively record themselves practising their speech restructuring technique in a variety of everyday situations, chosen by them. In this way, speech technique practice and evaluation can be taken into the workplace, school, and home.

Practice can also be made more interesting by guiding clients to web-based resources. One resource developed specifically to facilitate generalisation of fluency gains is Scenari-Aid (Meredith, n.d.). Scenari-Aid is a software program that allows clients to choose from a hundred simulated scenarios in which to practise. For some clients, this form of practice may be very helpful in desensitising them to increased anxiety in social situations. For others who are more impacted by social anxiety, desensitisation alone may be insufficient and cognitive behaviour therapy may be recommended. CBTpsych (Helgadottir, n.d.) is a fully automated on-line cognitive behaviour treatment that has been developed specifically to address anxiety in adults who stutter. Clients complete this program without the assistance of a clinician and without needing to attend a clinic. Phase I and II trials confirm the efficacy of this treatment (Helgadottir, Menzies, Onslow, Packman, & O'Brian, 2009).

Adherence is a key determinant to treatment success and lack of adherence is common not only for stuttering treatment, but also for voice disorders treatment (Van Leer & Connor, 2012) and indeed many medical treatments. At this stage of treatment, adherence to weekly consultations is critical for the development of good problem-solving skills. Good problem-solving skills are needed to address challenges clients encounter as they attempt to generalise their new speech technique. However, treatment adherence

can be tested by the demands of needing to attend clinic on a weekly basis. Technology facilitates adherence and makes therapy less onerous when phone or webcam Internet consultations replace in-clinic appointments. Of course for some clients, adherence will have been facilitated from the outset through telepractice. Irrespective then of where they occur, at these consultations clients, together with the clinician, will begin to problem solve challenges and determine how much practice is needed, what type, and where in order to optimise progress.

Technology can also assist if motivation becomes an issue. Introducing clients to a web-based motivational reward system, for example Beeminder (n.d.), allows clients to set goals, receive prompts, track practice, and even reward themselves. Other computer applications may facilitate adherence in other ways. HABITRPG (n.d., role play game) is a video game application to help develop new habits. It “gamifies” the life of the user by turning tasks (for example, speech practice activities) into monsters they have to conquer. The better the user is at sticking to a goal, the more progress is made in the game. New alternatives are likely to continue to become available. These applications are particularly suitable for adolescents as this population is likely to be very familiar with technology and find it enjoyable.

Stage IV: Maintenance

During the maintenance stage, clients continue to develop problem-solving skills to assist maintenance of their behaviour change over time. The aim is to reduce reliance on the clinician and to increase client self-reliance to deal with fluctuations in stuttering.

There are different ways technology can be used here. First, webcams can assist clients to be involved in self-help groups, and to attend them more regularly, even when time and distance are an issue. Self-help groups may provide support and encouragement as well as an opportunity for speech practice. There is evidence that support groups can benefit psychological well-being in people with chronic mental illness, depression, anxiety, and bereavement (Pistrang, Barker, & Humphreys, 2008), and in people who stutter (Bradberry, 1997). The groups may also provide added opportunity for speech practice when family members or friends are included.

A second way that technology can be used is by allowing consultations to continue with minimal inconvenience to the client, through telepractice consultations. Stuttering is a relapse-prone disorder and failure to complete maintenance stages of treatment places clients at increased risk of this occurring. Maintenance of gains may therefore be facilitated in this manner. Finally, technology provides the opportunity for clients to capture examples of their own speech restructuring technique, for them to continue to observe and evaluate, as described during the generalisation stage. Self-evaluation of speech is a prerequisite to effective self-management. Technology enables this process to occur with minimum effort and maximum validity.

Conclusion

This paper has presented some options for incorporating technology into practice. Using the Camperdown Program as an illustration, it has described how technology permeates that clinical practice, well beyond the realm of telepractice. Technology may be integrated at any or all stages of treatment to help with stuttering or social anxiety, incorporating clients, family members and other speech pathologists. It has the potential to make treatment more

engaging, realistic, consistent, convenient, motivating, and meaningful.

While this paper has presented a description of the roles technology plays in adult and adolescent stuttering treatment, technology arguably may play as many or more roles in stuttering treatment for children. In time, technology is likely to drive the development of new and creative treatments. Clinicians are, however, cautioned that the ubiquitous nature of technology in our society today presents the possibility that technology will be used in clinical practice with insufficient care and thought. This may pose a number of risks. First is the risk that technology will be used with insufficient clinical evidence. Second is the risk that there will be a lack of consideration of ethical issues of telepractice, for example client confidentiality, privacy, data security and transmission. Third is the legal risk arising in some countries about whether and how the right to engage in telepractice is established, when clinicians work across state or national boundaries. Fourth is the ethical risk of clinicians taking incomplete measures to safeguard clients when online resources are used. It will take collaboration, interest, and effort of clinicians, researchers, program developers and our professional organisations to address these risks, and others presented to us as technology continues to evolve.

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Early intervention and AAC

Research and expert recommendations

Pariya Behnami and Sally Clendon

KEYWORDS

AUGMENTATIVE AND ALTERNATIVE COMMUNICATION

EARLY INTERVENTION

LANGUAGE

THIS ARTICLE HAS BEEN PEER-REVIEWED

This paper explores the appropriateness and benefits of implementing augmentative and alternative communication (AAC) with children under the age of five. It outlines a number of myths related to the use of AAC with young children and examines the existing evidence base in order to identify the modes of AAC that have been shown to be effective. Finally, the paper provides suggestions of where to begin with early intervention involving AAC with reference to key research findings and advice from field experts. These suggestions include following language progression models based on typical language development, focusing on highly motivating interactions to teach the power of communication, providing communication partners with robust coaching, having high expectations, using a multimodal approach, targeting operational skills alongside communication intervention, and providing extensive aided language input.



Pariya Behnami (top) and Sally Clendon

It is well researched and widely accepted across education, medical, and allied health communities that early intervention (EI) for children with disabilities results in ongoing, significant positive outcomes. These include improvements in important domains such as cognition, communication, and motor skills (Landa & Kalb, 2012; Miller & Guitar, 2009; Spittle, Orton, Anderson, Boyd, & Doyle, 2012). The benefits also extend beyond children, with positive outcomes for families including enhanced parent-child interactions (Ciccione, Hennessey, & Stokes, 2012) as well as increased parental self-esteem, decreased stress, and greater use of community resources (e.g., Benzie et al., 2014). Furthermore, effective EI allows for more cost-effective service delivery which is critical in the current financial market (Drager, Light, & McNaughton, 2010; Eapen, Crncec, & Walter, 2013). An understanding of the benefits of effective EI provision is important for a range of people and services including: families, clinicians, educators, support staff, management, training services, and fund holders. Alongside the importance of understanding the benefits of EI is the importance of knowing how to implement effective EI.

This paper explores the appropriateness and benefits of implementing augmentative and alternative communication (AAC) for children under the age of five. Despite the acceptance of the importance of intervening as early as possible with children with disabilities, and the evidence base supporting the use of AAC with individuals with complex communication needs (CCN), a number of myths have hampered the provision of AAC to young children. These myths will be examined, and existing research will be explored to identify what modes of AAC and supports have been shown to be effective. Finally, the paper will provide suggestions of where to begin with AAC intervention by discussing implications for clinical practice from research findings and advice from field experts.

AAC

AAC is a term used to describe “the use of non-speech modes as a supplement to, or a substitute for, spoken language” (von Tetzchner & Jensen, 1996, p. 1). AAC systems can be no-tech, low-tech, mid-tech, or high-tech. Examples of no-tech systems include sign language and communication boards or books. These systems are no-tech as they do not require a power source. Low-tech, mid-tech, and high-tech systems do require a power source and vary in terms of their programming complexity and the amount of training required (Assistive Technology Training Online Project, 2000–2005). High-tech systems also differ from low- and mid-tech systems in that they can store large amounts of vocabulary and therefore enable more complex message generation. No-tech systems may also provide access to a large amount of vocabulary.

When discussing high-tech AAC systems, it is important to acknowledge the significant role that technology plays in the lives we lead today and the crossovers occurring between mainstream technologies and AAC. The advent of mobile technology such as tablets and smart phones has resulted in technology becoming pervasive, heavily influencing areas such as social communication and access to information. Recent evidence exploring the impact of this for young children suggests that access to technology facilitates the development “of a huge array of skills, knowledge, and understandings about the world in which they live” (Yelland & Gilbert, 2014, p. 2).

The increased availability of technology, particularly mobile technology, has resulted in more widespread use and acceptance of AAC. Light and McNaughton (2014) recently re-examined Light’s (1989) model of communicative competence for users of AAC. They

discussed the substantial benefits inherent in access to these technologies but also highlighted the increased demands they place on linguistic, operational, and social competence. They stated that:

with the dramatic change in the scope of communication and the explosion of tools through which to meet communication needs, individuals with complex communication needs now have access potentially to a much wider and more diverse audience than ever before. (Light & McNaughton, 2014, p. 9)

This means, however, that the communication expectations for AAC users have changed. They must develop the skills required to “independently use these new tools, adhere to their conventions, and communicate with a broader audience that includes those who may have limited or no prior experience with AAC” (p. 9).

Challenging myths and misconceptions

Despite the increased availability and implementation of AAC within some communities, there continue to be myths and misconceptions about the appropriateness and timing of AAC intervention with infants and young children. A number of highly regarded experts in the field of AAC have written about these issues (Cress & Marvin, 2003; Judge, Floyd, & Wood-Fields, 2010; Ronski & Sevcik, 2005; Van Tatenhove, 1987).

AAC and speech development

One common assumption is that AAC use will impede or prevent speech development (Van Tatenhove, 1987). It is well documented that these concerns are unwarranted (Cress & Marvin, 2003; Johnston, McDonnell, Nelson, & Magnavito, 2003; Ronski et al., 2010; Stahmer & Ingersoll, 2004). Research studies have demonstrated that AAC intervention for children below 5 years of age assists with the development of speech, language and functional communication skills (e.g., Drager et al., 2010; Johnston et al., 2003; Dunst, Trivette, Hamby, & Simkus, 2013; Ronski et al., 2010; Stahmer & Ingersoll, 2004).

Johnston and colleagues (2003), for example, introduced no-tech (Picture Communication Symbols [PCS]) and low-tech (single message voice output device) AAC systems to two children (one aged 3;10 with developmental delay and the other aged 4;6 with athetoid cerebral palsy and developmental delay) across an average of four sessions. Their intervention strategies included (a) creating appropriate and motivating communication opportunities; (b) modelling use of the AAC system by peers and teachers; (c) least to most prompting, and (d) naturally occurring consequences for communication attempts. The children demonstrated a 100% increase in the correct use of unprompted symbolic communication (Johnston et al., 2003).

In another study, Stahmer and Ingersoll (2014) explored the effectiveness of an EI service for children with autism spectrum disorder (ASD). The Picture Exchange Communication System (PECS) and modified sign language were implemented simultaneously with students who were described as nonverbal. Not only did the use of AAC appear to assist spoken language development (80% exited the program with spoken language), but by the completion of the intervention, 90% of participants were able to independently use a functional communication system compared to only 50% when the study commenced.

In a final example, Ronski and colleagues (2010) investigated the impact of speech generating devices (SGDs) during language interventions. They assigned groups of children, aged 2–3 years old, to three experimental conditions: speech only; aided input (where participants were prompted to communicate using a mid-tech voice output system); and aided output (where communication partners modelled the use of a mid-tech voice output system). The children who received the two aided interventions produced significantly larger amounts of vocabulary (either via speech or their AAC system) than the speech only group (Ronski et al., 2010).

Timing of AAC implementation

Experts in the field of AAC recommend that AAC is introduced as early as possible in order to avoid potential long-term negative outcomes associated with communication impairment (Cress & Marvin, 2003; Drager et al., 2010; Light & Drager, 2007; Ronski & Sevcik, 2005; Van Tatenhove, 1987). As Ronski and Sevcik stated: “AAC is not a last resort but rather a first line of intervention that can provide a firm foundation for the development of spoken language comprehension and production” (p. 183). Cress and Marvin (2003) suggested that AAC intervention should commence if a child’s communication is difficult for a child’s caregivers or communication partners to decipher.

Often one of the reasons for delaying AAC implementation with young children is that the majority of basic wants and needs are generally well interpreted and adequately met by a child’s primary caregiver. The risk in this approach however, is that it teaches young children to become dependent on informed and familiar listeners. This may lead to the development of learned helplessness where the child becomes used to not being able to communicate effectively and ceases to have the motivation to continue trying (Van Tatenhove, 1987). Suggestions for preventing learned helplessness involve coaching communication partners to recognise and support early communication attempts, and demonstrating the power of communication through the use of “core vocabulary” in motivating and functional contexts (Judge et al., 2010; Olive, Lang, & Davis, 2008; Ronski & Sevcik, 2005; Van Tatenhove, 1987).

Core vocabulary is a set of 400–500 words that feature in approximately 80% of the speech people produce (Banajee, Dicarolo, & Stricklin, 2003; Cannon & Edmond, 2009; Clendon & Erickson, 2008; Clendon, Sturm, & Cali, 2013; Trembath, Balandin, & Togher, 2007). They include words such as: *more, again, stop, go, finished, this, that*, etc. These words have the ability to hold power over a communication partner by directing an interaction. They also have high utility and thus provide lots of opportunities for modelling and repeated use (Geist, Hatch, & Erickson, 2014). The remainder of words that make up a person’s vocabulary (usually many thousands of words) are referred to as “fringe” or “extended vocabulary”.

A further factor influencing the timing of AAC implementation is the reality that many children with CCN have compromised health status. As a consequence, often therapies which are perceived as additional or optional are held back until the child’s health is more stable. This can be a dangerous approach when it comes to AAC implementation as without a functional means of communication, these children run the risk of being unable to express themselves effectively (Cress & Marvin, 2003).

It is critical to acknowledge, however, that parents of children with CCN are frequently dealing with considerable

demands relating to their children's disabilities, as well as feelings relating to grief and loss (Marshall & Goldbart, 2008). These pressures may influence their capacity to engage with their child's AAC intervention. Marshall and Goldbart (2008, p. 95) explained that:

parents vary in how much and at what point(s) they prioritize communication over other issues, how involved and how 'expert' they want to be. They experience the insufficiency of time which makes it difficult to achieve all that they would like to and they may feel frustrated and guilty about their children's difficulties and what they are able to offer them .

Professionals must acknowledge these factors and tailor their expectations and approaches to align with individual families' priorities and needs (Marshall & Goldbart, 2008).

Communicative functions

All too often caregivers and teams become focused on the communication of basic wants and needs such as mealtimes and toileting. While these types of messages are highly important, it is critical for children with CCN to be introduced to a wide range of communicative functions (Cress & Marvin, 2003; Light & McNaughton, 2014; Van Tatenhove, 1987), for example, commenting, arguing, requesting, protesting, greeting, asking questions, initiating, and many more. Intervention focusing on core vocabulary development not only provides the user with communicative power, but also ensures the modelling and use of a range of communicative functions.

Prerequisites for AAC use

An important myth to dispel is the presumption that a set of prerequisites must be met before AAC intervention can commence. For example, it was previously thought that children needed to demonstrate understanding through a hierarchy of symbol representation methods from real objects to photos before moving onto line drawings. However, Ronski and Sevcik (2005) argued that no such hierarchy exists. Their assertion was backed up by research with typically developing children across three developmental stages (6, 9 and 12 months) which found no significant differences between or across participant responses to photos versus PCS symbols for choice making (Da Fonte & Taber-Doughty, 2010).

Another misconception is that the child must demonstrate a certain level of cognitive skill before AAC is introduced. This assumption is dangerous as we do not approach language acquisition with typically developing children in this manner. Rather, we understand that we must speak to them for at least 12 months before they are likely to speak their first word back to us. Furthermore, we speak to them using many more words than they can say to us at any given time, while concurrently reducing the complexity of our language, enabling us to operate within their zone of proximal development (what the child is able to achieve and learn with the support of an adult; Vygotsky, 1978). This process of feeding language in before expecting output highlights the two key components of language acquisition and use, which are, receptive (what one understands) and expressive (what one is able to communicate). For all people learning language at any stage of life, language must be absorbed receptively before it will be expressed. For users of AAC, this process can be replicated through the use of their AAC system by their communication partners (Goossens, 1989; Porter, 2012).

It is also understood and accepted that typically developing children experiment and play with language in order to refine their language use (Cress & Marvin, 2003). Therefore, children with CCN must have access to comprehensive AAC systems in order to have the same opportunities for language play and exploration (Burkhart, 2008; Porter, 2012). Without AAC systems in place, children with CCN have limited capacity to demonstrate their ability and understanding (Ronski & Sevcik, 2005). A person's ability to communicate is strongly linked to cognitive development and also to their ability to demonstrate knowledge (Ronski & Sevcik, 2005), making it essential for children with CCN to have access to AAC systems early on so they can experience these language learning opportunities.

It is necessary to point out that while prerequisite skills do not exist *before* AAC systems can be implemented, foundation interaction skills do need to be addressed during EI. These skills support all communication interactions, including the use of AAC. They include the development of cause and effect, joint attention, intentional behaviours, shared enjoyment, and receptive language skills (Blackstone, 1999). Experts interviewed on this topic reported placing particular emphasis on making interactions engaging for children, using a range of AAC tools concurrently, and focusing their interventions on the use of core vocabulary (Blackstone, 1999).

For some children, concurrent operational skill development also needs to take place in order to enable functional and independent long-term use of AAC systems. For example, those with motor impairments may need exposure to switch skill development in order to compensate for their physical disabilities. A review of studies focusing on technology use with infants and young children between 1980 and 2004 revealed 12 studies that demonstrated strong evidence for teaching switch activation successfully to children under 1 year of age with a variety of diagnoses and cognitive abilities (Campbell, Millbourne, Dugan, & Wilcox, 2006).

Guidelines for AAC intervention

The following section provides suggestions for where to start with AAC intervention for children under 5 of age.

1. Follow language progression models of typically developing children by targeting appropriate language levels within intervention.

As discussed above, the language development of typically developing children is supported by a significant amount of receptive language input, accompanied by adult support within the child's zone of proximal development. Opportunities to use, explore and play with language are reinforced by communication partners attributing meaning to children's communication attempts. For children requiring AAC, it is essential that these same foundations and opportunities are provided, and that we use models of typical language progression to guide intervention (Burkhart, 2008; Cress & Marvin, 2003; Light & Drager, 2007; Porter, 2012; Van Tatenhove, 1987).

2. Focus on highly motivating interactions to teach the power of communication.

Implementing AAC in the context of highly motivating interactions is critical (Blackstone, 1999; Burkhart, 2008;

Cress & Marvin, 2003; Drager et al., 2010; Judge et al., 2010; Van Tatenhove, 1987). The ability to exert control and influence others is a motivating driver for most people. Through the use of personalised core and fringe vocabulary, an AAC user can realise the power that these words have over others, and over their environment. For example the use of the word *more* enables continuation of a preferred activity (e.g., more tickles, more blocks to build a tower before knocking it down), the use of the word *stop* facilitates cessation of something undesired (e.g., to stop another person's turn with a toy so the child can play with it). Robust vocabulary selection and motivational contexts facilitate the development of a wider range of communicative functions. It is critical for team members, including the child's family, to work collaboratively to ensure appropriate vocabulary selection for motivating and meaningful interactions (Horn & Kang, 2012; Trembath et al., 2007). Please see <http://aackids.psu.edu/index.php/page/show/id/4> for further suggestions of how to identify motivating and powerful communication opportunities (Light & Drager, 2012).

3. Ensure key communication partners receive robust coaching on AAC use and how to support communication interactions.

The role of communication partners is essential for successful interactions. A skilled communication partner has the ability to recognise communication attempts, to scaffold these attempts, to role model language use, and to shape behaviours towards more appropriate forms of communication (Olive et al., 2008). In the initial stage of AAC intervention, the main focus for clinicians could be to coach communication partners on the continuum of AAC methods (e.g., unaided and aided), the use of different interaction strategies, and general information about language development (Blackstone, 1999; Cress & Marvin, 2003; Judge et al., 2010; Ronski & Sevcik, 2005; Van Tatenhove, 1987). The training could also include consideration of environmental modifications required in order to facilitate successful interactions (Judge et al., 2010), for example, the positioning of AAC systems in relation to light sources or objects that may cause distraction.

A number of studies have shown that communication partners can implement highly successful AAC interventions following training (McConkey et al., 2010; Olive et al., 2008; Ronski et al., 2010; Stahmer & Ingersoll, 2004). Furthermore, communication partner training has produced positive results in terms of parents' perceptions of their child's abilities and overall parental well-being (McConkey et al., 2010; Ronski et al., 2011). Parents obviously have a very important role as primary communication partners for young children with CCN. It is imperative, however, that clinicians acknowledge the demands facing parents of children with disabilities. They must consider and regularly re-evaluate the goals and capabilities of families when planning and implementing AAC with young children (Marshall & Goldbart, 2008).

The CONNECT website contains useful resources for team training regarding environmental adaptations and the importance of embedding interventions within naturally occurring routines (please see: <http://community.fpg.unc.edu/connect-modules/learners/module-1> for further information).

4. Start early and consider a range of communication options including high-tech AAC.

Children's neurological development particularly between 0 and 3 years of age is primed for language development making it imperative to start early and aim high with intervention (Beukelman & Mirenda, 2013; Light & Drager, 2007; Porter, 2012). A review of studies between 1982 and 2007 found seven conclusive studies (totalling 135 participants) on the use of AAC with children under 3 years of age (Branson & Demchak, 2009). These included five single-subject studies and two group designs. They found that unaided and aided AAC systems could be used effectively with children under 3 years old. Only two of the studies compared the effectiveness of different types of AAC systems, with data indicating that aided AAC systems may be more effective than unaided systems (Branson & Demchak, 2009).

Janice Light and Kathy Drager carried out longitudinal research examining the effects of AAC intervention with nine children under the age of 5 (Light, 2005). Their intervention strategy involved weekly hour-long sessions that involved: 1) identifying suitable communication contexts; 2) developing suitable AAC tools that appealed to the child; 3) coaching the parent to act as the communication facilitator; 4) ensuring communication occurred across all activities, and 5) monitoring and evaluating their results. Their findings indicated that all children had improved rates of turn-taking; they were able to sustain interactions longer; AAC systems were used for play and learning, and to facilitate peer interactions; and the participants acquired a range of semantic concepts (Light, 2005). All participants were able to start using visual scene displays (whereby words and phrases were embedded within a picture of a specific context, e.g., mum and child talking on a toy phone), before progressing onto hybrid setups (a combination of a visual scene display and grid buttons containing words and/or phrases), and eventually onto traditional grid displays (Light, 2005).

5. Work on skill development concurrently.

Basic interaction skills, alongside interventions targeting all areas of communicative competence are imperative for long-term success (Blackstone, 1999; Campbell et al., 2006; Light & McNaughton, 2014). Research has demonstrated that it is possible for children under 1 year of age to develop switching skills (Campbell et al., 2006). Linda Burkhart has discussed how to approach skill development in this area which she terms the "juggling act" (for more detailed information, please see: http://www.lburkhart.com/handouts/stepping_stones_chart_10_12.pdf). Burkhart points out the importance of balancing increasing demands in one area (such as the physical movement required to activate a switch) with reduced demands in another area (such as using the switch in a highly familiar activity that demands less focused attention of the child). The approach enables a child to work on skill development across a number of areas concurrently (Burkhart, 2008).

6. Model, model, model.

As identified above, receptive language input is vital before expression can take place. AAC systems are no different. In order for a child to learn to use an AAC system effectively, their communication partners must also use the same system (Porter, 2012; Van Tatenhove, 1987). This use is

commonly referred to as “modelling” or “aided language stimulation”. Modelling occurs when the communication partner points to an icon on an AAC system while saying the word aloud (Binger & Light, 2007; Goossens, 1989; Harris & Reichle, 2004; Ronski et al., 2010). Harris and Reichle (2004) studied the impact of modelling on three young children with fewer than 30 spoken words who were assessed as having moderate cognitive disability. They demonstrated increases in symbol comprehension and production for all participants. Furthermore, two of the three participants learned two new symbol sets quicker following exposure to the first round of modelling, with gains maintained following the completion of the intervention (Harris & Reichle, 2004).

Binger and Light (2007) evaluated the effectiveness of modelling on the use of multi-symbol messages with a small group of preschoolers with special needs. They found that following four hours of intervention, 4 out of the 5 participants were able to produce multi-symbol messages using low and mid-tech AAC systems. Those using mid-tech systems (2 participants) were able to generalise use of multi-symbol messages to new play routines and could do so without the ongoing need for aided AAC models. Moreover, 4 participants were able to demonstrate ongoing use of multi-symbol messages during maintenance probes (Binger & Light, 2007).

In conclusion, while it is difficult to complete any large-scale randomised control trial studies with young children with CCN due to the heterogeneity of the group, the existing evidence base supports the implementation of AAC as early as possible. Future research needs to focus on AAC intervention with children under 3 years of age as there are few existing studies with this age group. Research also needs to evaluate the impact of motivation from the child and team members’ perspective on outcomes. In particular the role of learning through play using AAC needs to be further evaluated.

Useful websites and resources:

AAC Boot Camp Poster: <http://www.swaaac.com/Files/AssessandImp/AACBOOTCAMPPOSTER.pdf>

CONNECT module: [http://www.janefarrall.com/aac-systemic-change-for-individual-success/](http://community.fpg.unc.edu/JaneFarrall's%20blog%20regarding%20the%20need%20for%20systemic%20change%20for%20successful%20AAC%20intervention)

Janice Light & Kathy Drager: Early intervention for young children with autism, cerebral palsy, Down syndrome, and other disabilities: <http://aackids.psu.edu/index.php/page/show/id/1>

Kate Ahern's Periodic Table of AAC: <http://teachinglearnerswithmultipleneeds.blogspot.co.nz/2012/10/the-periodic-table-of-aac.html>

Linda Burkhart handouts: <http://www.lburkhart.com/handouts.htm>

PrAACtical AAC: practical suggestions, resources and research reviews about AAC intervention <http://practicalaac.org/>

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What supports speech-language pathologists to implement treatments with fidelity?

Maryanne O'Hare and Elizabeth Doell

KEYWORDS

COACHING

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SUPERVISION

TREATMENT FIDELITY

THIS ARTICLE HAS BEEN PEER-REVIEWED

One of the challenges for speech-language pathologists implementing evidence-based interventions is the need to consider treatment fidelity. This paper reviews the treatment fidelity guidance provided in three evidence-based interventions utilised in Australia and New Zealand practice for children with communication difficulties. The challenges in measuring and monitoring treatment fidelity within real-world practice contexts are identified along with recommendations for ways of supporting speech-language pathologists (SLPs) to develop and monitor treatment fidelity procedures. The paper proposes an organisational perspective for supporting speech-language pathologists to implement evidence-based interventions for children with communication difficulties.



Maryanne O'Hare (top) and Elizabeth Doell

Evidence-based practice is the combination of three equally important components: high-quality published research, clinician skills and knowledge, and client preferences and values (Reilly, 2004). Although speech-language pathologists (SLPs) understand the value of evidence-based practice and have an ethical requirement to provide clients with best practice (SPA, 2010), they experience difficulties applying evidence to their everyday practice contexts (Hoffman, Ireland, Hall-Mills & Flynn, 2013; Roulstone, 2015). Accessing and translating evidence into practice is a complex task requiring skills in reading and analysing research combined with clinical expertise and the ability to access and integrate clients' and caregivers' values and preferences. Kenny and Block (2014) discussed ethical challenges related to translating research knowledge to practice and the need to adapt knowledge to the "culture and worldview of consumers so they may benefit from new approaches" (p. 38). Clinicians may be faced with a dilemma when considering how to make program adaptations in response to stakeholder preferences that do not compromise the requirements for maintaining treatment fidelity.

An organisational priority is the need to ensure that allocated resources result in optimal outcomes, with

concomitant requirements for clinicians to demonstrate that their implementation of evidence-based interventions is effective and efficient. Speech-language pathologists have been encouraged to consider the treatment fidelity of their implementation of evidence-based programs as this has a significant impact on effectiveness of the intervention and subsequent outcomes (Kaderavek & Justice, 2010).

What is treatment fidelity?

In this article, treatment fidelity refers to the extent to which an intervention relates to the prototype intervention or the effectiveness research carried out on the intervention (Hulleman & Cordray, 2009; Kaderavek & Justice, 2010). Treatment fidelity is reported in published studies to establish the consistency and integrity of the application of the intervention, to strengthen the internal validity of the study. Just as demonstrating fidelity assists researchers to establish underlying reasons for the success of an intervention in research, it is highly likely that the degree of fidelity in the implementation of clinical interventions will impact client outcomes (Kaderavek & Justice, 2010).

Implementing a range of treatment fidelity measures as part of service delivery is important for monitoring the outcomes of an intervention. As more validated interventions are developed, monitoring treatment fidelity will become more important for implementing successful interventions for clients (Kaderavek & Justice, 2010). When there is low fidelity to the original intervention, clinical decision-making regarding the success of an intervention can be difficult because it is unclear if a treatment is effective (or not) due to the actual intervention or factors related to how the intervention was delivered. Implementing interventions with high treatment fidelity requires integration of two of the evidence-based practice components: the findings from published research and the clinician's skills and knowledge. It is important that SLPs apply treatment fidelity measures both in their own clinical practice and at the service delivery level.

Treatment fidelity measures

There is a range of suggested treatment fidelity measures. Distinctions are made between context, compliance, and competence measures (Fixsen, Naoom, Blase Friedman, & Wallace, 2005). Context measures refer to the prerequisite required supports for an intervention, from the completion of training to the clinician's caseload capacity to deliver the intervention. Compliance measures are utilised to monitor a clinician's application of the intervention process and

procedures, whereas competence measures refer to the clinician's level of skill in delivering the intervention to a client.

Compliance measures recommended for interventions supporting children's communication skills include the use of a treatment manual, specific information regarding dosage, and checklists to support fidelity to procedures (Kaderavek & Justice, 2010). Monitoring competence is more challenging, as it requires an evaluation of the manner in which a treatment is delivered. Direct fidelity measures that involve observing a clinician implementing an intervention, or reviewing video footage of the implementation at a later date, are considered the "gold standard". Indirect fidelity measures such as self-report checklists, logs, and practitioner surveys may be easier to implement but may not be as reliable (Kaderavek & Justice, 2010).

Three examples of manualised programs which are recommended interventions for New Zealand SLPs supporting children with speech, language, and communication difficulties (Ministry of Education, 2013) include information about treatment fidelity procedures. These are: the Lidcombe Program for Early Stuttering (Onslow, Packman & Harrison, 2003), the Hanen Parent Program – More than Words (Sussman, Honeyman, Lowry & Drake, 2013), and the Picture Exchange Communication System (PECS; Frost & Bondy, 2002).

The Lidcombe Program (Onslow et al., 2003) is used to treat stuttering in young children by teaching parents to use behavioural strategies during interactions with their children. A study of SLPs implementation of this program in Australian community clinics indicated successful outcomes and high levels of treatment fidelity (O'Brian et al., 2013). These researchers concluded that this program was at a phase 4 level on Robey's (2004) framework for evaluating evidence. The framework ranges from emerging levels of evidence with phase 1 and 2 interventions indicating potential therapeutic effects, phase 3 demonstrating evidence from clinical trials which have controlled for internal validity, and phase 4 interventions have demonstrated effectiveness for specific populations in "real-world" conditions (Robey, 2004). The Hanen Parent Program – More than Words (Sussman et al. 2013) supports parents of children with autism spectrum disorders (ASD) to facilitate communication development through their everyday parent-child interactions. A randomised control trial indicated some significant changes in the way children in the treatment group interacted with their parents (Carter et al., 2011) which may indicate this program has a phase 4 level of evidence. The Picture Exchange Communication System (Frost & Bondy, 2002) focuses on promoting the initiation of communication using symbols and pictures. A meta-analysis of PECS highlights its effectiveness in real-world contexts (Flippin, Reszka & Watson, 2010) which implies that this may also be a phase 4 intervention.

To ensure context fidelity, these programs require clinicians to complete 2–3-day training workshops in which they are provided with information to help them select appropriate client groups, recommendations for the size of client groups (Sussman et al., 2013), and recommended dosage for achieving successful outcomes (Onslow et al., 2003; Sussman et al., 2013). This information enables clinicians to match their approaches to client selection and service provision to those documented in research studies.

Compliance fidelity measures include the use of a treatment manual. The More than Words program (Sussman et al., 2013) offers a checklist to support reflection on a core part of the program: home-video coaching visits. Parent evaluation forms are also part of the Hanen More than Words program (Sussman et al., 2013) and feedback on these forms may help with monitoring compliance fidelity. To deliver Hanen parent programs, SLPs must be certified by the Hanen centre, and have a contractual agreement to deliver the programs in the specified manner and to keep up to date with program developments by participating in professional learning activities provided by the centre. However, other types of compliance measures are lacking in these programs including the direct observation of practitioners delivering the programs, self-report surveys of SLPs' practice, or checklists to support practice. Although no competency measures are reported for any of the programs outlined above, SLPs have extensive training on delivering focused interventions and so may need less intensive training to achieve fidelity (Kaderavek & Justice, 2010).

Treatment fidelity in practice

The availability of manualised programs and training should make it easier for SLPs to deliver treatments with high fidelity but in reality the situation appears to be more complex. To illustrate, the results of a survey of SLPs in the United Kingdom (Roulstone, Wren, Bakopoulou, & Lindsay, 2012) indicated that they routinely used combinations and adaptations of intervention approaches for children with speech, language, and communication difficulties. In the Roulstone et al. study, SLPs reported that fidelity to the original intervention was difficult in practice and their predominant procedures for evaluating outcomes were teacher and parent feedback and data collected for individual clients. The SLPs indicated minimal reporting of intervention fidelity or outcomes at an organisational level. Roulstone et al. highlighted the uncertainties for client outcomes that are created when treatments are adapted to fit a particular client need or gap, and the importance of measuring treatment fidelity. Joffe and Pring (2008) also found that SLPs frequently combine interventions, in direct contrast to how they were evaluated.

The limited attention to treatment fidelity measures may seem surprising given the range of options for monitoring treatment fidelity and the specific recommendations in commonly used manualised programs. One explanation may be that SLPs experience difficulty when there is divergence among the three components of the evidence-based model. For example, in situations when SLPs' professional judgements related to meeting the child and family preferences might compete with the requirement to implement programs as prescribed by the developers. Another key challenge is the applicability of treatment efficacy studies, which evaluate the causal relationship between the specific intervention and the clinical outcomes in tightly controlled settings (Kaderavek & Justice, 2010). Funded efficacy studies in research settings may involve delivery of a higher dosage of treatment than is feasible in community-based organisations (Hoffman et al., 2013). In contrast, effectiveness research investigates interventions in real-world settings (Kaderavek & Justice, 2010). Roulstone (2015) acknowledged the advantages of manualised interventions, but also identified a need to provide more specific and consistent descriptions of all SLP interventions in order to highlight their explicit impact.

Practice support

Program supports

Kaderavek and Justice (2010) suggested that practitioners will require training, guidance and feedback to be able to deliver an intervention as intended. To this end, clinicians who complete Lidcombe Program training are encouraged to contact the trainers if they have questions about working with clients with diverse needs (O'Brian, 2013). In contrast, PECS is considered to have a relatively short training period for implementation of 2 days (Flippin et al., 2010), with no other follow-up mentioned. Similarly, the More than Words program (Sussman et al., 2013) does not prescribe specific post-training follow-up or feedback, although Hanen trained SLPs are actively encouraged to access online resources such as research summaries and e-seminars and attend regional meetings with Hanen Centre trainers. Further program supports could include opportunities for program mentors to facilitate clinician's self-reflective practice, provide feedback on video recordings of clinician's real-time implementation, and be available for collaborative problem-solving. This type of support has been particularly effective in increasing treatment fidelity for clinicians implementing Incredible Years programs which are manualised and use a similar initial training model to the three SLP programs discussed in this paper (Webster-Stratton, Reid, & Marsenich, 2014).

Organisational supports

Informing SLPs about the range of procedures for measuring treatment fidelity and approaching the implementation of these measures from an organisational perspective may facilitate monitoring of fidelity and outcomes. The development of a workplace culture that facilitates implementation of evidence-based practice at a service delivery level requires organisational supports (Cheung, Trembath, Arciuli, & Togher, 2013). A workplace culture should include opportunities to meet as a professional community that supports new ideas and challenges existing ones (Timperley, Wilson, Barrar, & Fung, 2007).

Organisations can also support SLPs by ensuring they have sufficient time and resources to deliver interventions at the appropriate dosage and intensity (Yoder, Fey & Warren, 2012). For example, although the Lidcombe Program for early stuttering recommends 45–60 minute sessions, a sample of community clinicians were reported to offer 30-minute appointments (O'Brian et al., 2013). In order to justify the allocation of sufficient resources, managers within organisations need to be made aware that an intervention is not being delivered with adequate fidelity, potentially compromising client outcomes.

The provision of supervision or coaching is an essential component of organisational support for SLPs implementing evidence-based practice (Fixsen et al., 2005; Meyers, Durlak & Wandersman, 2012). Speech-language pathology professional associations promote participation in regular supervision as a key part of developing and maintaining professional competencies (ASHA, 2008; SPA, 2007). Recommendations for supervision often include a strong focus on developing self-monitoring and evaluation skills through the use of coaching. Coaching is considered to be an adult learning strategy that enhances skills, supports understanding (Rush, Shelden & Hanft, 2003), and facilitates practice changes (Timperley et al., 2007).

Although coaching is not included in the recommended implementation supports for the programs featured in this paper, it may be an effective way of ensuring treatment fidelity that could follow training and provide a strong focus on developing self-monitoring skills. Components of coaching that may facilitate SLP practice include support to combine what SLPs have learnt in training with their own personal practice or beliefs. Coaching may also include modelling or demonstration, support with the development of self-assessment and monitoring of performance, and the provision of emotional support in challenging situations (Spouse, 2001). In order to implement interventions with fidelity, SLPs may need support integrating newly learned behaviour into practice, facilitating information sharing and collaborative relationships with clients, and combining new skills with previous knowledge and practices (Fixsen et al., 2005). When supporting the implementation of evidence-based programs at an organisational level, coaching may have a compensatory effect for challenges such as SLPs' existing competencies or the quality of the program training (Fixsen et al., 2005). Coaching may strengthen implementation after training, or where there are differences between the required skills and staff competencies.

Conclusion

Treatment fidelity is essential for the implementation of evidence-based practice. Some manualised programs, including the three discussed in this article, have a range of recommended procedures for supporting SLPs to achieve high fidelity. Some of the barriers to translating research into practice, such as resource constraints and limited practice support for monitoring and self-assessment of treatment fidelity, have been highlighted. Organisations have a key role to play in addressing these issues through the management of resources and the provision of ongoing, targeted supervision and coaching following program training.

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Caregiver–child interaction in children who are deaf or hard of hearing and children who are normally hearing: Preliminary data

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KEYWORDS

HEARING IMPAIRMENT

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THIS ARTICLE HAS BEEN PEER-REVIEWED



Michelle Saetre-Turner (top), Cori Williams (centre), and Michelle Quail

This pilot study investigated differences in the quality and quantity of caregiver–child interaction in the home language environment of children who are deaf or hard of hearing (N = 5) and normally hearing (N = 5) children. The language environment was analysed from audio recordings collected using the Language Environment Analysis (LENA) system on seven measures of interaction quality and three measures of language quantity. Measures of interaction quality were the number of: successful child and caregiver initiations, connected utterances, failed utterances, behavioural directives, caregiver expansions, and the ratio of successful child to caregiver initiations. Measures of language quantity were adult word count, conversational turn count, and child vocalisation count. This study is founded on emergentism theory, with the outcome measures selected to indicate the hypothesised relationship between hearing loss and the language environment. The interaction quality was less supportive of language development in the deaf or hard of hearing group on all but two measures: the number of failed utterances and the ratio of successful child to caregiver initiations. Language quantity was not significantly different between the groups. The findings have implications for intervention strategies for children who are deaf or hard of hearing, and support further analysis of the home language environment.

Caregivers are critical facilitators of a child’s cognitive, linguistic, and social development (Vohr, Topol, Watson, St Pierre & Tucker, 2014). A hearing loss disrupts the typical trajectory of communication development, increasing the importance of an environment that is supportive of language growth (VanDam, Ambrose & Moeller, 2012). Yet, it is noted that caregivers of children who are deaf or hard of hearing (D/HH) display behaviours traditionally viewed as non-supportive of language

development, such as intrusiveness and unresponsiveness, as an “intuitive response to the effects of hearing impairment on infant behaviour” (Lam & Kitamura, 2010, p. 545). The language outcomes of children who are D/HH continue to fall behind normally hearing (NH) peers, despite early identification of hearing loss, early intervention, and improvements in hearing technology (Vohr et al., 2014). There have been relatively few investigations regarding the quality of the home language environment (HLE) involving children who are D/HH, particularly compared with research exploring the quantity of language received. This is despite studies voicing the need for such explorations (Aragon & Yoshinaga-Itano, 2012; Vohr et al., 2014).

Language development in the home language environment

Children learn language by attaching meaning to the individual words and sounds they have segmented when hearing the speech stream (Chiat, 2001). The number of words and communicative opportunities a child is exposed to significantly impacts language acquisition (Leffel & Suskind, 2013; Zimmerman et al., 2009), with talkative parents providing more opportunities for mapping meaning onto words (VanDam et al., 2012). Impaired auditory processing has a flow-on effect on the ability to store, understand, and produce language (Claessen, Leitão, Kane & Williams, 2013). As a result, children who are D/HH often have marked language delays, influenced by factors including the severity of hearing loss, age of amplification or implantation, and socioeconomic factors such as parental education (Szagun & Stumper, 2012). In terms of typical language acquisition, a review of the literature by Suskind et al. (2013) noted the relationship between the quality of a child’s language exposure and their linguistic outcomes and academic success later in life. Qualitative features of the HLE, such as the complexity of speech to the child, the responsiveness of the caregivers, and the nature of caregiver–child interactions, were associated with academic performance (Suskind et al., 2013).

Caregiver-directed interventions stem from research highlighting the impact of the HLE on language outcomes (Vigil, Hodges & Klee, 2005). Current interventions, such as the Hanen Parent Training Program (Manolson, 1992), involve teaching caregivers strategies that facilitate language development. This includes an interaction style that is less directive and more responsive to their child’s communication. The program appreciates that caregivers have a unique opportunity to cultivate their child’s language learning through supportive communicative

experiences (Vigil et al., 2005). The scope of the current study is therefore closely underpinned by the theory of emergentism. This theory acknowledges the interaction between the “external language environment and the internal learning capabilities of the child” (Morgan et al., 2014, p. 47). Emergentism indicates that there is a likely compounding effect of a less supportive linguistic environment in addition to language learning difficulties associated with hearing loss. Consequently, the quality and quantity of interaction in the HLE is considered in this paper.

Interaction quality

Demonstrating emergentism theory in this population, Lam and Kitamura (2010) summarised research surrounding the impact of hearing loss on the communicative behaviour of caregivers of children who are D/HH. They suggested caregivers are more controlling and dominant during conversation, and that communicative breakdowns occur more frequently due to decreased responsiveness from the child (Lam & Kitamura, 2010). Similarly, Morgan et al. (2014) examined the quality of conversational turns between 30 children who were D/HH and 19 children who were NH aged between 17 and 35 months, and their caregivers. The measures of conversational quality were based on those proposed by Ensor and Hughes (2008), and included coding exchanges as connected, initiated, failed, or unclear. Connectedness is a measure of how semantically related an utterance is to the previous turn. It provides an indication of how often topics are continued, and how responsive conversational partners are to each other’s communicative attempts (Ensor & Hughes, 2008). As such, it can be used to measure how supportive the HLE is for language development, as children engage more enthusiastically and frequently in topics initiated by them (Harrigan & Nikolopoulos, 2002). In contrast, more failed or unclear utterances indicate less successful interaction experiences and conversational partners who are less responsive (Harrigan & Nikolopoulos, 2002). The study found the NH group displayed more connected conversational turns, initiated communication more often, and had fewer failed or unclear turns (Morgan et al., 2014). Although the study did not account for non-verbal communication, the authors suggest the conversational exchanges were “impoverished” (Morgan et al., 2014, p 47).

These findings are supported by Most, Shina-August, and Meilijson (2010). Out of 24 children receiving amplification, appropriate connected interactions were not displayed consistently between any children who were D/HH and their caregivers. In contrast, such interactions were displayed by 11 of the 13 NH children and their caregivers. It should be noted that the authors viewed this discrepancy as a difference in pragmatic function between the two groups, and they acknowledged the impact on the success of the communicative interactions.

According to the literature, the quality of interaction in the HLE is improved when caregivers expand on their child’s utterances, use self-talk, promote conversational turn-taking, limit parental initiations, and follow their child’s communicative initiations (Vigil et al., 2005). A study conducted by Harrigan and Nikolopoulos (2002) involved teaching caregivers of children with cochlear implants these supportive behaviours. Parental utterances were assigned to one of two categories: an initiation or a response. Post-course, the parents responded significantly more to their child rather than initiating a conversational turn (Harrigan & Nikolopoulos, 2002). Although the study did not assess the impact this might have had on the children’s language abilities, the authors suggested that the shift towards a

contingent communicative style was a positive one.

In contrast to a contingent communicative environment is one with increased parental control. A longitudinal study investigating parental control conducted by Lederberg and Everhart (2000) compared the number of directives given to 20 children who were D/HH and 20 children who were NH, at 22 months and 3 years of age. The study involved three measures of maternal directives. The number of direct behavioural commands (“Stop that.”), was significantly different between the groups. At both points in time, the mothers of children with a hearing loss were significantly more likely to use the direct behavioural commands, with the number used by the mothers of children who were D/HH the same as the number the mothers of the NH children used at 22 months (Lederberg & Everhart, 2000). The authors attribute the increased maternal control to the delayed language abilities of the children who were D/HH. Lam and Kitamura (2010) reported similar results in a twin study, linking differences in maternal control to the decreased responsiveness of the twin who was D/HH. To the twin with a hearing loss, the mother was less responsive, more controlling, and more directive during interactions. Despite the ability of a twin study to more closely control for individual variation and environmental factors, the generalisability of the study is limited, and the findings were not supported by statistical analyses. These studies indicate the likelihood of a difference in caregiver behaviour and control due to the impact of hearing loss on child behaviour.

An important measure of the quality of HLE is the presence of rich conversational experiences, including opportunities to learn linguistic rules (Chouinard & Clark, 2003). Supportive caregiver behaviours such as expansions, repeats, recasts, and requests for clarification enable children to learn language during conversation (Chouinard & Clark, 2003). Ruter (2011) found that for 21 children following cochlear implantations, parental expansions increased their acquisition of grammatical structures, with a significant correlation between an expansion of a grammatical structure and the children’s subsequent usage. Children who are D/HH have more profound difficulties in syntax and grammar compared with vocabulary acquisition (Boons et al., 2013) and therefore this study highlights the valuable role that parental expansions have for language development and informing intervention strategies in this population.

The results of these studies can be grouped into three major themes: those indicating differences in parental conversational control (Lam & Kitamura, 2010; Lederberg & Everhart, 2000), parent–child responsiveness (Harrigan & Nikolopoulos, 2002; Morgan et al., 2014; Most et al., 2010), and the richness of the linguistic environment (Ruter, 2011).

Interaction quantity

The number of adult words a child is exposed to in the HLE is acknowledged as a key facilitator of language acquisition (Zimmerman et al., 2009). In terms of typical language development, the number of adult words a child hears has been found to be relatively stable, while conversational turns and child vocalisations increase as the child ages and language skills develop (Greenwood, Thiemann-Bourque, Walker, Buzhardt & Gilkerson, 2010). Extrapolating these findings to children who are D/HH, a reduction in conversational turns and child vocalisations compared to children who are NH may be expected, due to decreased spoken language competence in this population. Additionally, no significant differences in the number of adult words may be anticipated. However, according to

Ambrose, VanDam and Moeller (2011), toddlers who are D/HH are exposed to approximately 1400 adult words per hour. In a separate study, Hart and Riseley (1995) reported that children who are NH from professional and working-class families heard on average 1702 adult words per hour. Contradicting this apparent discrepancy in the number of words heard, VanDam et al. (2012) found that the D/HH group ($N = 22$) and the NH group ($N = 8$) were exposed to approximately the same number of adult words, and the children who are D/HH did not participate less in conversational turns. The resulting weaker expressive and receptive language skills were attributed to the quality of the conversational turns, in conjunction with the impact of the hearing loss (Ambrose et al., 2011). This recent study contradicts previous research noting disparities between the populations (Lederberg & Mobley, 1990), causing the language quantity in the HLE to be difficult to predict.

Aims

The current study had two aims: first, to compare the quality of the HLE of children with and without hearing loss; and second, to consider differences in quantitative language measures recorded in the HLE, namely adult word count, conversational turn count, and child vocalisation count. It should be noted that previous studies had not yielded conclusive findings, and there were often small sample sizes and lack of detail regarding the measures. With regards to parent and child responsiveness, it was hypothesised that the D/HH child-caregiver dyad would demonstrate less successful child and caregiver initiations, fewer connected utterances, and more failed utterances. Similarly, more behavioural directives and a decreased ratio of successful child to caregiver initiations were expected, indicating higher parental conversational control. Fewer caregiver expansions were also expected, signifying a less supportive linguistic environment.

The measures of adult word count (number of adult words spoken near the child), conversational turn count (verbal exchanges between an adult and the child occurring within five seconds of each other), and child vocalisation count (vocalisations at least 50 milliseconds in duration and surrounded by 300 milliseconds of silence) were hypothesised to differ between the groups. This hypothesis was non-directional due to the limited and inconsistent findings from the literature.

Method

Participants

Five children who were D/HH and their caregivers were recruited from Telethon Speech and Hearing, a facility that provides early intervention and specialist services for children with speech, language, and hearing difficulties in Western Australia. The children were fitted with a hearing aid or cochlear implant. Five NH children and their caregivers were recruited via the researchers' informal networks. The NH children were matched by hearing age (plus or minus three months) and gender. Participant matching by maternal education level (e.g., undergraduate degree, trade qualification) was also attempted. See Table 1 for participant characteristics, and Table 2 for the nature of intervention received by the D/HH children. All participants' primary language at home was English. The NH children passed an audiological screening at 25dB across the frequencies of 500, 1000, 2000, and 4000 Hz in a quiet room. Their language was deemed typically developing (falling within one standard deviation of the mean) using a 52-question caregiver survey, the LENA Developmental Snapshot, or three subtests of the Clinical Evaluation of Language Fundamentals – Preschool (2nd ed.) if over 36 months of age. The LENA Developmental Snapshot permitted time constraints to be adhered to, whilst providing results highly correlated with other standardised language assessments (see Gilkerson & Richards, 2008).

Table 1. Participant characteristics of D/HH and NH children

	Chronological age months; days	Hearing age	Hearing aid (HA) / Cochlear implant (CI)	Mother's education level	Diagnoses
HI Female 1	38m; 14d	36m; 7d	HA from 2m; 7d, CI from 35m; 24d	Post graduate degree	None
NH Female 1	33m; 7d	–	–	Bachelor degree	None
HI Female 2	51m; 3d	48m; 29d	HA (bilateral) from 2m; 5d	Post-graduate degree	Possible oral motor weakness affecting upper lip and lifting of tongue
NH Female 2	47m; 27d	–	–	Bachelor degree	Mild stutter (<2% syllables stuttered)
HI Male 3	42m; 1d	26m; 20d	CI from 14m; 11d	Diploma of education	None
NH Male 3	28m, 4d	–	–	Bachelor degree	None
HI Male 4	35m; 1d	34m; 4d	HA from 27d	Senior secondary education (Year 12)	Treacher Collins Syndrome
NH Male 4	33m; 3d	–	–	Trade qualification	None
HI Female 5	39m; 10d	31m	HA at approximately 8m; CI (right) at 18m; 26d and (left) at 43m	Did not provide	None
NH Female 5	29m; 28d	–	–	Post-graduate degree	None

Table 2. Description of intervention received by D/HH children	
Child	Intervention
HI Female 1	Weekly sessions at Telethon Speech and Hearing since 4/5 months of age.
HI Female 2	Weekly sessions at Telethon Speech and Hearing since 3 months of age. Articulation therapy from 3 years.
HI Male 3	Twice weekly sessions at Telethon Speech and Hearing since birth.
HI Male 4	Weekly sessions at Telethon Speech and Hearing since 3 months of age. Recently changed to fortnightly sessions.
HI Female 5	Nature of therapy received at Telethon Speech and Hearing not provided.

Procedure

The Language Environment Analysis (LENA) system is an audio-recording device used to collect and analyse verbal information about the HLE (Aragon & Yoshinaga-Itano, 2012). As part of the therapy program at Telethon Speech and Hearing, caregivers were provided with feedback surrounding the HLE using the LENA system. The audio recordings for this group were therefore pre-existing. The children wore the device continuously for up to 16 hours, and the caregivers were instructed on the use of the device, including communicating and interacting naturally. The caregivers rated how typical the day was on a 5-point Likert scale in terms of communication, events that occurred, and overall behaviour. No days were scored at 2 or below.

The audio recordings for both groups were input into the LENA system, which automatically generated data for adult word count, conversational turn count, and child vocalisation count. Two participants did not record for the entire day, and consequently did not provide a complete recording. As such, measures were calculated from a 5-hour period (from 9am to 2pm) for all participants to ensure consistency. The LENA system calculated data for each of the five hours, and the hour with the median number of conversational turns was identified. This hour was coded to provide the conversational quality measures, thus ensuring a representative sample of the language environment.

The audio file was transcribed into a Word document and analysed using the following codes: a successful child initiation, successful caregiver initiation, connected utterance, failed utterance, behavioural directive, or caregiver expansion. The ratio of successful child to caregiver initiations was also calculated. These measures were selected as their presence, or absence, provides an indication of how supportive the HLE is of language acquisition. See the Appendix for the definitions adhered to for these codes. An inter-rater reliability analysis using the Kappa statistic was performed. A total of 297 utterances from six participants' recordings were independently coded for comparison, and there was an almost perfect agreement, $k = .949$ (95% CI, .919 to .978, $p < .005$).

Results

The first aim of this study was to compare the quality of the HLE between the two groups. The non-parametric Mann Whitney U test was selected due to the small sample size in each group ($N = 5$). This test is robust against violations to normality and is not affected by outliers in the data, and is therefore a suitable choice for this study. A p value of $< .05$ indicated a statistically significant difference between the groups. It was hypothesised that the HLE of the children who were D/HH would be less supportive of language development. This hypothesis was strongly supported (see Table 3). Five out of seven measures returned a significant result, with all but one generating a large effect.

The second aim was to examine whether the quantity of language exposure was different between the groups. The hypothesised difference in adult word count, conversational turn count, and child vocalisation count was not supported. Adult word count in the D/HH group ($Mdn = 10335$, Range = 4824–19401) was not significantly different to the NH group ($Mdn = 7261$, Range = 2617–11857), $U = 10.0$, $p = .690$, $r = .17$. There was a non-significant difference in the conversational turn count of the D/HH group ($Mdn = 293$, Range = 134–659) and the NH group ($Mdn = 409$, Range = 247–666), $U = 12.0$, $p = 1.000$, $r = .03$. The child vocalisation count was also not significantly different in the D/HH ($Mdn = 1367$, Range = 319–2567) and NH ($Mdn = 1334$, Range = 887–3292) groups, $U = 12.0$, $p = 1.000$, $r = .03$.

Discussion

The aim of this study was to investigate differences in the quality and quantity of interaction in the HLE between children who are D/HH and their caregivers, and children

Table 3. Descriptive measures, significance, and effect size for quality of interaction measures				
Measure	D/HH ($N = 5$) Median (range)	NH ($N = 5$) Median (range)	Significance	Effect size (r)
Number of successful child initiations	17 (13–24)	32 (22–50)	.008**	.76 ^a
Number of successful caregiver initiations	16 (12–20)	22 (20–28)	.004**	.80 ^a
Number of connected utterances	44 (27–144)	196 (85–220)	.016*	.69 ^a
Number of failed utterances	30 (22–42)	22 (13–30)	.075	.50 ^a
Number of behavioural directives	17 (10–36)	9 (8–28)	.048*	.56 ^a
Number of caregiver expansions	5 (1–11)	18 (6–31)	.048*	.56 ^a
Ratio of successful child to caregiver initiations	1.26 (0.75–1.43)	1.28 (1.05–2.45)	.211	.30 ^b

Note. All significance levels were one-tailed. ^alarge effect ^bmedium effect * $p < .05$; ** $p < .01$.

who are NH and their caregivers. The need for this exploration arises from studies describing the lack of quantifiable research in this area (Quittner et al., 2013). The data provides preliminary support for the hypothesis that the quality of interaction in the HLE is influenced by the behaviours and communication abilities of a child that is D/HH. As predicted, the D/HH group was exposed to an overall less supportive linguistic environment. The results are strengthened by the use of multiple measures of interaction quality, and the large effect sizes produced.

The D/HH children and their caregivers initiated communication less often and there were fewer connected interactions. This indicates the children had fewer opportunities to acquire language (Harrigan & Nikolopoulos, 2002). These findings are consistent with literature demonstrating the population has a reduced ability to initiate and continue successful interactions (Morgan et al., 2014; Most et al., 2010). The children who were D/HH also experienced less caregiver expansions; suggesting exposure to language modeling was reduced. As Ruter (2011) discovered, children who are D/HH benefit enormously from caregiver expansions. Therefore these results provide encouragement for future research to explore intervention approaches.

Our findings also replicate those of Lederberg and Everhart (2000), who found there were more behavioural directives given to children who were D/HH compared to children who were NH. This pattern was evident, despite the children who were D/HH being older than the children in the NH group. Braungart-Rieker, Garwood and Stifter (1997) stated that child defiance and parental control peaks at approximately two years of age, and steadily decreases across the preschool years. Our results suggest that the parents of children who are D/HH were more controlling and directive; a parenting style cultivated by their child's aptitudes, though viewed as less supportive of language development (Harrigan & Nikolopoulos, 2002).

Two measures did not support the hypothesis of a decreased interaction quality in the D/HH dyad: the number of failed utterances, and the ratio of successful child to parent initiations. The non-significant difference in the number of failed utterances contradicts the literature indicating that decreased intelligibility and communicative responsiveness results in less successful exchanges (Morgan et al., 2014). Harrigan and Nikolopoulos (2002) stated that parents of children who are D/HH are typically the primary communicators, and exhibit increased conversational control. Our results did not support this, instead indicating the parents of children who were D/HH did not initiate conversation significantly more than their children when compared to the NH child-parent dyad. One explanation for the non-significant results is that the children were receiving intervention through Telethon Speech and Hearing, a facility that engages in auditory verbal therapy. Auditory verbal therapy promotes child verbal communication, parent responsiveness, and developing parental strategies to facilitate communicative success (Chowdry, 2010). This may have increased child initiations and reduced the controlling behaviours of the parents, similar to the outcomes observed after the Hanen program (Harrigan & Nikolopoulos, 2002). Taking this view, the significant results for all other quality measures suggest differences remain despite the intervention received.

Differences in the quantity of language exposure between the groups were non-significant for the three measures. The

findings were consistent with those of the study conducted by VanDam et al. (2012), providing further support for future research to focus on the quality of the HLE in more detail. Despite the current findings, a major limitation of this study is the small number of participants, and the reduced ability to closely control for variables likely to impact the results (Szagun & Stumper, 2012). Though limiting the impact of confounding variables was attempted through participant matching and preliminary assessments, the severity of hearing loss, the age at implantation or amplification, and the nature of early intervention received, were not controlled for in this study. The optimal age at implantation is younger than 12 months, with language delays expected to increase as provision of hearing technology is postponed (Quittner et al., 2013). As shown in Table 1, there was variation in the type of hearing technology provided; however, four out of five D/HH participants received a form of hearing technology before 8 months of age. The NH children were matched to the children who were D/HH by hearing age to control for spoken language experience and language ability. However, the chronological ages of the children varied from 28 months to 51 months. Due to the different stages of language acquisition, parent-child interactions were likely to vary accordingly; thus impacting the results (Greenwood et al., 2010). All D/HH participants received intervention through Telethon Speech and Hearing in conjunction with the provision of hearing technology, though the age at which intervention began and the service delivery model used could not be controlled for.

The heterogeneity of the group is reflected in the large ranges observed from the quantity of language measures in particular, and may have contributed to the non-significant results. Nonetheless, this study offers preliminary findings justifying further consideration of the complex relationship between hearing loss and the language environment. Future studies should explore the quantity of language exposure, but also include multiple measures of interaction quality. Altogether, this and future research is underpinned by the objective of improving the language abilities of children who are D/HH.

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Appendix. Definitions and examples of utterance coding

Utterance code	Definition	Example
Successful child initiation	Child initiates a new topic that is unrelated to the caregiver's conversational turn (or is after a pause) and is successful in eliciting a semantically related response from the caregiver.	Child: "Why is doggy barking?" (<i>initiation</i>) Caregiver: "I don't know, maybe he heard something." (<i>response</i>)
Successful parent initiation	Caregiver initiates a new topic that is unrelated to the child's conversational turn (or is after a pause) and is successful in eliciting a semantically related response from the child.	Caregiver: "Do you want a bickie?" (<i>initiation</i>) Child: "Yes please." (<i>response</i>)
Connected	An utterance is semantically related to the other interlocutor's previous conversational turn. The first utterance after a "response" is deemed connected.	Child: "Look at the cat." (<i>initiation</i>) Caregiver: "She looks funny doesn't she?" (<i>response</i>) Child: "Yes she does." (<i>connected</i>)
Failed utterance	The caregiver or child's utterance is directed to the other conversational partner, but does not elicit a semantically related response.	Child: "Why is doggy barking?" Caregiver: (no response) <i>or</i> Caregiver: "Who is that?" Child: "I'm hungry."
Behavioural directive	Caregiver's utterance includes a prohibition, threat, or insult.	"Stop that." "I'm taking away your toy."
Caregiver expansion	Repeating the child's intention with increased linguistic or syntactic complexity.	Child: "Car." Caregiver: "Yes, we are going for a drive in the car."
<i>Note.</i> All definitions were adapted from Ensor and Hughes (2008).		



Use of Child Health Records to support referral for speech-language pathology services

Tara Shem, Chris Brebner, and Lilienne Coles

Child Health Records (CHRs) are used to record developmental information which could be useful in identifying communication difficulties. It is critical to identify communication difficulties promptly as early experiences influence future outcomes. This study explored the utility of the South Australian CHR as a tool for early childhood educators (educators) in conveying concerns about development to parents of children attending childcare services. Eight educators discussed with parents their concerns about the development (primarily of communication) of children in their care, drawing on information provided by families in their CHR. Interviews with educators were conducted following these interactions. The eight educators found the CHR to be a valuable support during conversations that they described as challenging. Thus, CHRs could be a useful tool for educators to support early identification of communication difficulties.

Child health records (CHRs) are a parent-held resource, provided to every Australian at birth, into which developmental information can be recorded. They contain immunisation records, growth charts, and developmental information (e.g., communication/motor milestones), and are used by health care professionals to record such data (Department of Education and Early Childhood Development [DEECD], 2010). The aim of CHRs is to promote parent knowledge, to increase engagement and communication with health professionals, to record developmental information, and to improve health care service utilisation (DEECD, 2010).

Hamilton and Wyver (2012) identified, through exploring parents' views of the New South Wales CHR, that mothers found it to be a valuable resource to assist communication of information about children's health/development between parents and professionals. Their interviews also highlighted that professionals, such as teachers in childcare settings, can support families in understanding information in the CHR and identifying when to act upon concerns (Hamilton & Wyver, 2012). These findings show that CHRs can provide value for parents and that non-health care professionals may have a role in conversations with parents about their children's development.

One area of child development outlined in CHRs is communication. During the early years crucial communication foundations which contribute to future outcomes are developed (Speech Pathology Australia [SPA], 2014). Unfortunately, developmental difficulties, including communication impairments, are not being identified until formal schooling for a significant proportion of Australian children (Department of Education, 2013). Hence, developing strategies to identify and act to remediate communication difficulties early in children's lives is a priority, especially for speech-language pathologists who have the expertise to provide appropriate assessment and intervention.

Recent inquiries have suggested that early identification practices be supported by Early Childhood Education and Care (ECEC) and ECEC staff (Oberklaid, Baird, Blair, Melhuish, & Hall, 2013; SPA, 2014). In this context, "ECEC staff" refers to educators working in ECEC facilities with a minimum qualification of a diploma in children's services, and this term will be used in this context for the remainder of this article. Educators have skills, knowledge, and understanding of the children with whom they work which could assist with developmental monitoring (Oberklaid et al., 2013) and the process of identifying early communication difficulties (Branson, Vigil, & Bingham, 2008).

The purpose of this research was to explore CHRs as a tool to assist with the identification of communication difficulties in the early years in South Australia. The research question for this study was: Does the South Australia CHR assist educators to discuss their concerns about development of children in their care with the child's parents? A general view of "developmental concerns" was sought for this study; however, the key focus of this study was on communication concerns.

Method

A qualitative research design employing individual, face-to-face semi-structured interviews with educators was adopted to answer the research question. This approach is appropriate for the exploration of educators' perspectives (Creswell, 2014). Similar qualitative designs have been implemented in previous research exploring educators' perceptions on language development (Marshall & Lewis, 2014) and experiences with speech, language and communication needs (Mroz & Letts, 2008). Ethical approval for the study was obtained from the Social and Behavioural Research Ethics Committee at Flinders University, South Australia.

Participants

Eight educators, working across four childcare centres in a community organisation in metropolitan Adelaide, South

KEYWORDS

CHILD HEALTH RECORDS

COMMUNICATION DIFFICULTIES

EARLY CHILDHOOD EDUCATION AND CARE

EARLY CHILDHOOD EDUCATORS

EARLY IDENTIFICATION

THIS ARTICLE HAS BEEN PEER-REVIEWED



Tara Shem (top), Chris Brebner (centre), and Lilienne Coles

Australia, participated in this study. Upon receiving ethical approval, educators were recruited to the study through purposive sampling. Purposive sampling was employed to ensure participants recruited could share meaningful data on the research topic (Creswell, 2014). The eligibility criteria based on the research objective were (a) educators who were working in a childcare centre, (b) educators who had worked directly with children and families at the centre, and (c) educators who had developmental concerns about a child in their care. Upon receiving consent to participate, pseudonyms were allocated to participants to ensure confidentiality.

A predetermined sample size was not established for this research. This allowed for gradual selection of participants to the study (i.e., recruiting educators who met eligibility criteria while continuing the preliminary analysis as per established qualitative methods). Gradual selection of participants occurred until saturation of data was reached. Guidelines and descriptions relating to how saturation may be determined in qualitative methods of inquiry other than grounded theory are not consistently documented in the literature (Guest, Bunce, & Johnson, 2006). Data saturation in this study was defined as the point when participants raised no new themes/topics in interviews (Guest, Bunce, & Johnson, 2006) and at this point data collection ceased.

Procedure

Participating educators each identified a child for whom they had developmental concerns. Educators approached families to consent to involvement in the study and families were informed that their participation would involve 1) completing the developmental milestone sections of latest CHR (2013 version) and 2) a discussion with the educator around their child's development, progress, and concerns.

Consenting families received a copy of the latest CHR from their educator and were given time to provide developmental information in the *My Health and Development* section of the South Australia CHR about their child (e.g., talking and connecting skills, movement and activity skills, fine motor skills, problem solving skills, socialisation skills). Families returned the CHR to the educator. Educators used the information in the completed section of the CHR in preparation for a conversation with parents to communicate their concerns regarding the child's development.

Educators each organised a time with their participating family to discuss the information provided in the CHR regarding the child's development and their concerns. Staff were encouraged to adopt their own professional approach when engaging in the conversations with parents regarding the child's development. Concerns raised with parents by the educators were primarily regarding communication skills/development.

Following the conversation with each family, each educator participated in a face-to-face interview with the first author, exploring the utility of the South Australia CHR when conveying developmental concerns to parents. A semi-structured format with interview guide was used (see Appendix). Interview length ranged from 11 to 31 minutes. Interview duration varied with each educator, depending on the depth of information each educator provided and their experience with identifying concerns. Interviews were audio-recorded on a Sony ICD-AX412F portable digital recorder and transcribed orthographically by the first author.

Analysis

Interview data were analysed using Braun and Clarke's (2006) framework for thematic analysis. This qualitative analytic technique establishes description and understanding of the

topic under investigation through the development of categories and the emergence of themes from the data (Braun & Clarke, 2006). The following steps were undertaken to produce a thematic analysis: 1) coding the interview transcripts (labelling the features of the interview data related to the research question), 2) grouping similar codes in categories, and 3) collating categories with a shared central concept into themes. Interview transcripts were coded inductively and categorised using NVivo 10 (QSR International, 2012). To ensure robust analysis and that participant experiences were represented accurately (Creswell, 2014), the first and second authors completed dual coding and cross-checked themes with the third author. Discrepancies were discussed and consensus reached.

Results and discussion

Thematic analysis revealed two themes related to the research question: *Supporting difficult conversations* and *Challenges*.

Supporting difficult conversations

The educators in the study reported the CHR to be a valuable support for conversations with parents in a variety of ways. Four categories, examined below, emerged from the data, outlining how educators were supported in these situations (see Figure 1).

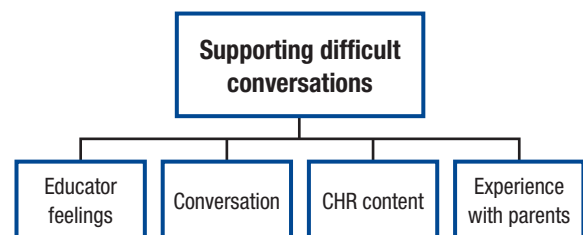


Figure 1. Theme 1 – Categories within the theme Supporting difficult conversations

First, the participating educators reported experiencing positive feelings associated with having the CHR available as a resource to refer to during conversations with the parents. In comparison to previous experiences communicating concerns to parents they reported feeling supported and more confident to engage in conversations with the CHR present.

I get quite a bit of anxiety before speaking to parents so this way I just had the reassurance myself of what I was doing and what I am trying to achieve... it just gave me a little bit of confidence or more confidence going up to the parent. (Carly)

Other benefits reported by the educators included being "on the same page as parents" due to referring to the same resource and information, allowing gaps in development to be easily identified by both parties, and that the information and examples in the CHR facilitated parents' understanding of their message(s). They described the CHR as allowing the focus of the conversation to gradually reach their concerns. This contributed to having more successful and constructive conversations as well as feeling supported.

Having the book¹ with me when we were having the conversation ... was a good sort of talking point. (Sally)

Participating educators recognised the CHR content as being useful, particularly the parent-friendly, shared language that facilitated understanding and enhanced interactions.

I think having the blue book as a tool to start with really helped break down barriers, so we had something in common to look at to share the information and I think

it gave us both an understanding across the board of what we're talking about. (Melody)

Educators also spoke of how the information on developmental norms assisted their conversations, noting parents could read, see, and refer to the norms themselves. Further, the educators reported that by incorporating service ideas, developmental milestones, and up-to-date information into one resource, the South Australia CHR made this information easily accessible. This feature was valued by the educators.

I felt confident because I had research to back me up and on hand and that's accepted and published... (Maria)

Finally, the educators reported experiencing more favourable outcomes with parents through using the CHR. Educators reported parents were more relaxed, accepting, and willing to engage in conversations and work in partnership with them when the CHR was available, compared to their previous experiences prior to the study.

The ease in which parents sort of came on board with and were quite happy to be become involved ... it's always a difficult conversation ... I think the book ... made it easier for us to talk to parents ... we were just using the book as an extra tool and that I think made the parents more relaxed, in dealing with it. (Jenny)

Overall the educators identified that the CHR supported them in having conversations with parents. This supports Hamilton and Wyver's (2012) conclusion that "CHRs may offer an important, but underutilised communication tool" (p. 76). The milestone charts in the CHR completed by parents provided a good platform to talk about development, identify gaps apparent in the charts, and facilitated links with educator observations. These findings also highlight that the CHR and its information may act as a talking point and assist in facilitating effective communication. Additionally, the findings support Hamilton and Wyver's (2012) suggestion that professionals who work with children/families may play a significant role in supporting parents to understand such information.

Challenges

While educators identified that the CHR provided valuable support for communicating with parents, they also identified challenges (parents, practical issues, and services) with these conversations. Participating educators acknowledged that communicating concerns about a child to parents is difficult. However, they identified that parents' reactions (e.g., denial), non-engagement, limited knowledge of development, and limited time for conversations also presented challenges.

It's always very hard, it's very difficult [sic], but you have to remind yourself that you're doing it for the right reasons [sic], that it is to help the child and you want the child to have success at school, so that's always a good thing to keep in mind ... but it is very difficult [sic], especially if they're quite in denial, yeah yep, and if it's the first time they've heard it you know, it might be the first time that they've even had any, sort of, anybody suggest something might not be quite right and that can be quite a shock to some parents. Yeah it's difficult. (Dana)

The time, that that was the most difficult thing ... Because these people have very busy lives. (Leah)

Educators highlighted practical issues such as needing to encourage some parents to use all components of the CHR provided (e.g., prompting parents to fill in specific sections prior to the conversation, adding more detail such as dates and examples than just ticking boxes). Some educators

also acknowledged that families who had not previously documented information about their children in a CHR found it more difficult to fill it in.

Educators also spoke of difficulty accessing services for the children they had identified as being "at risk". Part of this difficulty arose from parents not seeking assessment (e.g., acknowledging the concerns but then adopting a "wait and see" approach) (McAllister, McCormack, McLeod & Harrison, 2011). Dana highlights her experiences of trying to get assistance for concerns: "Some families getting them to actually follow up on an assessment, that's usually the hardest point". Educators found this challenging as they understood the importance of these services for these children, especially as the Australian Early Development Census data are showing that some children are starting school "at risk" or "developmentally vulnerable" in some areas (Department of Education, 2013).

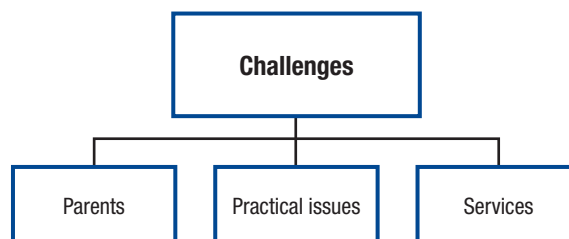


Figure 2. Categories within Challenges (theme 2)

Parents' reactions, practical issues, and availability of services meant that conversations between educators and parents were complicated. McCormack and Easton (2014) reported similar findings in a study that explored the beliefs, values, and attitudes of educators and speech-language pathologists in the management of communication disorders. Family reluctance/denial, feeling unsupported by other professionals, and being unsure how to help a child and manage his or her frustration/behaviour were the challenges identified for these educators. The similarities in findings across studies suggest educators commonly face these issues and that further exploration and support for educators is warranted.

Limitations

Several factors need to be considered when examining the results of this study. First, results from this qualitative study cannot be generalised beyond these eight participants, as they may not represent the experiences and perspectives of other educators in other ECEC services or organisations. Second, bias may have occurred as the participating educators were from the same organisation and volunteered to be involved in this study. Participating educators self-selected parents/families with a child whom they were concerned about to engage in this study. Bias may have occurred as educators may have approached parents/families for recruitment to the study whom they believed would be open to participation and to the conversations the study was centered around.

Conclusions

The information gained from this study provides insight into how CHRs could be utilised to assist with early identification of developmental difficulties, specifically communication difficulties. The results show that, for these participants, the CHR was a valuable tool for supporting conversations between educators and parents about developmental concerns. Participants also spoke of the challenges of parents' reactions, engagement, and time availability. These challenges highlight areas for possible future support for

educators. Collaborating with educators could assist in earlier identification and therefore intervention for children with developmental difficulties, including those related to communication. However, the results also suggest there are issues with parents accessing services and following through when concerns are identified. Therefore, future research could further examine these issues with access to services during the early years.

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Appendix. Interview guide

Primary: Tell me about your recent experience conveying developmental concerns to parents with the aid of the "Blue Book".

Secondary:
What went well about the experience?
Why did you feel that went well?
What was more difficult about the process?
Why did you find that difficult?
Reflecting on your most recent experience, how did you feel conveying these concerns to parents?
What do you like and/or dislike about this situation?

Primary: Did you find the "Blue Book" useful as a resource when conveying developmental concerns to parents?

Secondary:
How did you use it?
Can you tell me about the aspects of the blue book that you found useful?
Can you tell me about the aspects of the blue book that you found were not useful?
How did having this resource make you feel?
In what way did this resource support you?

Primary: What do you feel you have learnt from conveying developmental concerns to parents?

Secondary:
Can you tell me about your preferred approach to these discussions?
Are there any other tools/information you believe would/could support your approach to these discussions?

Is there anything else you would like to add to our conversation today?

1 The CHR was referred to as the "book" and the "blue book" by participants.

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What's the evidence?

Should we be advocating for play-based learning in early primary school to support students' educational outcomes and language development?

Claire Marsh, Daniel Lawrence, Sarahlouse White, and Sue McAllister

Skills developed through play in early primary school years (5–8 years) underpin educational outcomes and language development. While Australian kindergartens consistently adopt a developmental play-based approach to learning, many children enter primary school without well-developed language skills and are expected to participate in a language-heavy didactic teaching environment. A search of recent literature was conducted to answer the clinical question “does a play-based curriculum improve educational outcomes including language for children in early primary school compared to usual didactic teaching strategies?” This article provides a critical appraisal of four articles representing the highest levels of available evidence. Results indicated that a play-based curriculum utilising a guided play framework—including scaffolding, elicited explanation, worked examples, and feedback—were associated with positive learning outcomes and dispositions for some children in early primary school.

Traditional didactic teaching structures rely on students having well-developed language skills to access the curriculum. However, many children enter primary school without well-developed language skills, putting their educational outcomes at risk (Australian Early Development Census, 2012). The critical interaction between children's play and their learning, including development of symbolic language, is well recognised (Reynolds, Stagnitti, & Kidd, 2011). Play in children aged 5–8 is a complex interaction involving rich oral language, narrative, problem-solving, and social communication skills. Children in play are self-motivated and gain confidence from pursuing their own ideas. These skills developed in play underpin educational outcomes in areas including literacy, maths, and science, as well as oral language, social skills, and self-directed learning (Miller & Almon, 2009; Weisberg, Hirsh-Pasek, & Golinkoff, 2013).

The current appraisal aims to evaluate the best current evidence around whether play-based learning/curricula in

the classroom are more effective in promoting educational and language outcomes than traditional didactic teaching in early primary school settings (between reception and year 2/ ages 5–8 years). The findings are relevant to speech pathologists who often work with teachers and site leaders to support children with language and/or literacy difficulties to access the curriculum.

Methods

A critically appraised topic methodology was applied to construct a concise and focused summary of the best available evidence to guide practice (Wendt, 2006). The clinical question used to establish a search was “does a play-based curriculum improve educational outcomes including language for children in early primary school compared to usual didactic teaching strategies?” Educational outcomes were defined as outcomes in any area of learning, including language. The age range for early primary school was defined as 5–8 years old (equivalent of Australian reception–year 2).

For the purposes of this appraisal, the terms “play-based learning” and “play-based curriculum” were used to describe educational interventions in which both the young learners and teachers played an active role. “Play-based learning” is distinct from a “free play”, “laissez-faire” or loosely structured class environment where young students play with minimal active adult support (Miller & Almon, 2009). It is also distinct from a didactic teaching structure where students are passive learners in a traditionally structured curriculum (Miller & Almon, 2009; Rautio & Winston, 2013; Weisberg et al., 2013).

Search strategy

A search of key databases including Cochrane Library, ERIC, SCOPUS, CINAHL, and PubMed for English publications from the last 10 years at the time the search was conducted (2010–2014) ensured that all relevant systematic reviews, educational research, and allied health publications were sought. Search terms used included “child*, student, language (impair* OR delay OR disorder), play*, play-based, curriculum, educat**”.

Inclusion and exclusion criteria were established prior to search. Inclusion criteria were (a) intervention studies focusing on play used to deliver learning and/or language outcomes for children in early primary education (reception to year 2); and (b) full text available in English. Exclusion criteria were (a) co-morbidities in population such as intellectual disabilities or autism spectrum disorder; and (b) study published before 2004.

KEYWORDS

CRITICAL APPRAISAL

EVIDENCE-BASED PRACTICE

LANGUAGE DEVELOPMENT

PLAY-BASED CURRICULUM

PRESCHOOL CHILDREN

THIS ARTICLE HAS BEEN PEER-REVIEWED



Claire Marsh (top) and Daniel Lawrence

Table 1. Summary of appraised articles, key findings, strength of evidence and levels of evidence

Source/title of evidence	Level of evidence (JBI, 2014) and critical appraisal checklist used	Strength of evidence (Millar et al., 2006)	Key findings
Does discovery-based instruction enhance learning? (Alfieri et al., 2011)	Level 1 (Meta-analysis) EVIDAAC rating scale for systematic reviews (Schlosser et al., 2008)	Preponderant ¹	Unassisted discovery learning methods do not benefit learners, whereas enhanced discovery learning methods (including feedback and scaffolded play) were found to enhance learning outcomes.
Play therapy in elementary schools: A best practice for improving academic achievement. (Blanco & Ray, 2011)	Level 2 (Randomised controlled trial) JBI MASTARI: RCTs or non-RCT group intervention studies appraisal checklist (JBI, 2014)	Preponderant	Child centred play therapy (CCPT) can significantly increase academic achievement for 1st grade academically at-risk children (compared to waitlist control group).
Play, language and social skills of children attending a play-based curriculum school and a traditionally structured classroom curriculum school in low socioeconomic areas. (Reynolds et al., 2011)	Level 2 (Pre-test post-test quasi-experimental/ observational cohort study) JBI MASTARI: cohort or case control studies appraisal checklist (JBI, 2014)	Preponderant	A play-based curriculum was more effective than a traditionally structured classroom curriculum in increasing children's play, social skills, and narrative language.
End-of-phase 2, Report 4: <i>Outcomes for pupils over time.</i> (Sproule et al., 2009)	Level 3 (Longitudinal cohort study) JBI MASTARI: cohort or case control studies appraisal checklist (JBI, 2014)	Preponderant	Children participating in a play-based curriculum had more positive attitudes towards learning than children in traditional classrooms. No long-term differences in educational outcomes.
¹ Preponderant: study had minor flaws with respect to: design, dependent variable reliability OR treatment integrity, e.g., "outcomes were more likely than not to have occurred as a result of the intervention" (Millar et al., 2006, p. 251)			



Sarah Louise White (top) and Sue McAllister

Eight studies met the inclusion criteria. Four articles were selected for individual critical appraisal on the basis of their relevance to the clinical question, level of evidence and recency (see Table 1). The level and strength of evidence based on methodological rigour was assessed independently by the first two authors using standardised critical appraisal checklists tailored to speech pathology and/or allied health evidence appropriate to each study type (Joanna Briggs Institute, 2014; Schlosser et al., 2008). An additional four studies (Miller & Almon, 2009; Van Oers & Duijkers, 2012; Walsh, McGuinness, Sproule, & Trew, 2010; Walsh, Sproule, McGuinness, & Trew, 2011), although relevant to our question, were excluded on the basis of their comparatively lower levels of evidence.

The strength of evidence for each article was rated using Millar, Light, and Schlosser's (2006) levels of certainty. Each appraised article was rated as "preponderant" due to minor flaws with respect to design, dependent variable reliability, or treatment integrity (Millar et al., 2006). This strength of evidence indicates that the outcomes were more likely than not to have occurred as a result of the intervention (Millar et al., 2006). The following is a summary of the critical appraisal for each of the four selected articles.

Findings

The meta-analysis by Alfieri, Brooks, Aldrich, and Tenenbaum (2011) directly compared two levels of play ("unassisted discovery-learning" [free play] and "enhanced discovery-learning" [guided play]) with explicit/didactic teaching methods. This comparison provided useful insight into different types of play-based learning and their effects on educational outcomes including verbal/social skills,

problem-solving, maths, science, and computer skills. A large number of studies were included in the analysis and both fixed and random effects statistical models yielded similar findings. This gives confidence in the finding that guided play-based learning was more effective than didactic or free play. Specifically, children achieved better educational outcomes when engaged in learning via scaffolded play that involved teacher support and encouraged learners to explain their ideas (elicited explanation). This style of learning yielded better outcomes than any other form of instruction (free play or explicit instruction), and led to superior results for all learning outcomes including language (verbal and social tasks). However, caution is required when interpreting the findings with regard to children in early primary education, given that the authors did not assess the quality of the included studies, and included studies pertaining to learners of all ages (43% of included studies related to child population).

The randomised controlled trial by Blanco and Ray (2011) compared academic achievement outcomes of 41 first grade children (aged 6–7 years) in the United States who were randomly assigned to either a 2 x ½ hour play therapy group or a waiting list control group. During sessions, the facilitator followed the child's lead and responded to the child's play following a protocol of verbal and non-verbal behaviours intended to communicate connection and caring. Although the study did not specifically evaluate play-based learning in an educational setting, this article was included due to the relevance of its findings regarding enhancement of educational outcomes including spoken language, reading, writing, and maths as a direct result of play, as measured by the Young Children's Achievement

Test (Hresko, Peak, Herron, & Bridges, 2000). There were greater combined outcomes for the treatment group compared to the control group, amounting to statistically significant differences from pre-test to post-test with the effect size for the treatment group double the effect size for the control group. The study employed rigorous methodology; however, generalisation to wider populations of children and play-based learning in educational settings is limited due to the specific intervention and small sample size within a certain geographical location and population.

Reynolds et al. (2011) compared the outcomes for oral language, play abilities, and social competence for a cohort of children ($n = 31$) aged between 4.83–6.16 years participating in a play-based curriculum to those in a traditional curriculum. The students attended a school with a low socioeconomic demographic in Australia. Outcomes were measured using the School Age Oral Language Assessment (Allen, Leitão, & Donovan, 1993), the Child Initiated Pretend Play Assessment (Stagnitti, 2007), and the Penn Interactive Peer Play Scale (Fantuzzo, 1995). This study utilised a rigorous methodology, although could have been strengthened with blinded administration of all assessments. The findings indicated that the play-based curriculum had a greater positive impact than the traditional curriculum on the learning of children in low socioeconomic status (SES) schools across developmental social, language and play domains. Nevertheless, caution is required when generalising the findings to educational outcomes and wider populations of children due to small sample size and specific demographic profile of the children in the study.

Finally, the longitudinal study by Sproule, McGuinness, Trew, Rafferty, and Walsh (2009) evaluated the long-term outcomes for a total of 3,414 children in 24 Irish schools providing a play-based curriculum compared with traditional didactic curricula. Three cohorts of children within each school were included in the study: one group followed the previously existing didactic curriculum (control); one group followed the play-based curriculum in its first year of implementation; and one followed the play-based curriculum in its second year of introduction. Educational outcomes were evaluated across several learning domains including literacy, oral language, and maths using the Performance Indicators in Primary Schools (PIPS, 2001), the Wechsler Objective Language Dimensions (WOLD, 1996), and child and teacher self-rating scales. There were no long-term differences in outcomes for children in the two groups following play-based curriculum for 77% of comparisons of reading and mathematics. However, educational outcomes were improved for the schools with a higher level of disadvantage, with 20% of all comparisons showing statistically significant improved outcomes for the children who received play-based curricula. Children's self-evaluation measures showed that the play-based curriculum had a significant positive effect on their learning dispositions. To illustrate, children who received the play-based curriculum reported having stronger belief that they could influence and shape their own learning, higher levels of motivation, greater curiosity, and a greater ability to take on and accept mental challenges and more difficult work compared to children who received the didactic curriculum (Sproule et al., 2009). The primary challenge in interpreting the findings is the lack of detail regarding selection of cohorts, increasing the risk of selection bias. The study stated that schools volunteered to participate, however it is unclear how the cohorts of children were selected within the schools, or whether a process of selecting or excluding specific schools took place.

Summary and clinical implications

The four appraised articles contained minor methodological flaws and variations in delivery and/or content of play-based learning approaches. However, they present preliminary evidence to suggest that play-based curricula can lead to similar, and at times greater, improvements in educational outcomes including language for children in early primary school, compared to usual didactic teaching strategies.

Play-based learning in the classroom is likely to support educational outcomes in oral language, literacy, and maths, and dispositions towards learning for primary school children. Successful techniques investigated through the appraised articles included: scaffolding, elicited explanation, worked examples, feedback, teacher responsiveness to child interests, child-initiated activities, and a caring and sensitive dialogue between teachers and students (Alfieri et al., 2011; Blanco & Ray, 2011; Reynolds et al., 2011; Sproule et al., 2009).

Considering that all other appraised articles suggested a positive effect of play-based learning on children's learning outcomes, Sproule et al.'s (2009) finding that there was no long-term negative effect of a play-based curriculum and increased interest in learning can be viewed as a finding supportive of play-based learning. This positive effect on young students' attitudes towards learning is also reflected in Reynolds et al.'s (2011) findings that children receiving a play-based curriculum were less socially disconnected and disruptive at school. This not only decreases problem behaviours and social disconnection, but can also be directly linked to improved educational outcomes, particularly for children from low SES areas (Reynolds et al., 2011; Sproule et al., 2009; Weisberg et al., 2013).

These findings are congruent with current expert opinion that recommends the use of play-based learning in primary school curriculum delivery and highlights that the child should always be an active participant in their learning rather than a passive recipient (Miller & Almon, 2009; Rautio & Winston, 2013; Weisberg et al., 2013). There is evidence that play-based learning in early-primary school classrooms can support educational outcomes for some children. Speech pathologists can draw upon this evidence when collaborating with educators to promote children's educational outcomes.

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Teaching ethics

Application of ethical frameworks to an ethical dilemma based on a simulated client interview

Helen Corbould, Andy Smidt, and Emma Power

Speech language pathologists (SLPs) are regularly confronted with complex ethical dilemmas in clinical practice. These dilemmas are particularly challenging for student speech pathologists who, without years of clinical experience, often feel uncertain in their clinical reasoning and decision-making. While university course content can explain the different ethical theories and frameworks, hypothetical scenarios provide real-life examples to make this content meaningful. This article presents the perspective of a student speech pathologist as she applied two contrasting approaches to addressing ethical dilemmas to unravel a hypothetical ethical dilemma concerning the breaching of client confidentiality, and the perspectives of teaching staff involved in this activity. This exploration points to the potential for ethical frameworks to guide ethical decision-making and increase confidence, for both student/novice clinicians and experienced clinicians alike.

This article presents the reflections and perspectives of three individuals (authors) following a simulated client interview and ethical dilemma activity conducted as part of a speech language pathology university course. During the activity, students interviewed the client (carer of a young man with traumatic brain injury (TBI) played by an experienced speech-language pathologist (SLP)) and then discussed an ethical dilemma. Perspectives are presented from the lecturer who designed the activity, a student who completed the activity, and the SLP who acted as the carer. The hypothetical ethical dilemma is analysed using two contrasting approaches – the principles-based and the narrative approaches – to share the complex thought process the participants engaged in during the activity and to illustrate the differences and respective benefits of each approach. The potential for these tools to guide ethical reasoning and decision-making is discussed, as well as the value of using hypothetical cases and simulated client interviews to support student learning.

The perspectives

Lecturer

As a university lecturer, it is difficult to present realistic challenges to students within a controlled environment. This activity involved students meeting a simulated client in order to collect case history information (MacBean, Theodoros, Davidson, & Hill, 2013). The activity was implemented within a case-based curriculum where students integrate a number of learning objectives around a single case (McCabe, Purcell, Baker, Madill, & Trembath, 2009). The meeting with the simulated client allowed students to experience face-to-face interviewing, to then produce a report using contrasting writing styles (for a carer and a medical audience), and to use reflective journaling to consider their own skills. The final task within the activity was to consider an ethical dilemma within one of several suggested ethical frameworks. As the lecturer, the challenge was to allow students to experience this as an authentic activity and to support them as they reflected on the challenges and the lessons to be learned (Meyers & Nulty, 2009).

Student

As a student SLP, I attend lectures and tutorials on phonology, language, voice, swallowing, and neurogenics and then apply this material to my placements. As for ethics, however, the transition from the classroom to real life is not so straightforward (Stansfield & Handley, 2010). The difficulty of translating ethics is especially true for ethical dilemmas, where the appropriate conduct is not easily, if at all, discernible. As part of the Masters of Speech Language Pathology program at the University of Sydney, we were required to apply one or more frameworks to a hypothetical ethical dilemma based on a simulated client interview. The simulated client interview added a dimension of authenticity to the ethical dilemma and allowed me to approach the ethical dilemma with empathy for the client's circumstances. Overall, this task allowed me to develop skills in ethical reasoning and to structure my decision-making based on the procedures sanctioned by the *narrative* (Charon, 2001) and *principles* (Beauchamp & Childress, 2001) approaches. In using such frameworks we can develop ethical problem-solving skills, comply with the SPA (2010) Code of Ethics guidelines, and be sensitive to our clients' and their families' circumstances.

Simulated client

As a lecturer within the degree program not involved in this unit of study (UOS), I had two roles in this ethical learning

KEYWORDS

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ETHICS

NARRATIVE
APPROACH

PRINCIPLES
APPROACH

THIS ARTICLE
HAS BEEN
PEER-
REVIEWED



Helen Corbould (top), Andy Smidt (centre), and Emma Power

exercise. The first was to create an authentic case for the students based on my own specialist area of neurogenic communication disorders, a UOS that students would undertake in the following year. The second was as a simulated client in their case history and ethical reasoning task where I performed both the role of the mother and debriefed with students about their own performance and reasoning following the simulation. In constructing the case, it was important that I balanced the opportunity to create a case that illuminated important details about TBI and my own neurogenic language disorders UOS with the goal of the task – to provide a foundation for an interview and ethical reasoning learning exercise.

In participating in the simulated interview, I was absorbed in my role as mother of the young man with TBI, but I also was still able to manipulate (sabotage) the interview to challenge the students' developing interview skills. The atmosphere in the simulation was serious and tense, with an authentic feeling to the interaction. There was palpable relief in the room at the end of the interview when the students reported on how difficult it was to balance listening to the client and hearing and recording their story, while simultaneously gathering pertinent information for their assessment. Some students did manage to achieve this and were also able to engage with me therapeutically to provide education to me as a mother of a son with brain injury, when I (deliberately) communicated a misunderstanding of the nature of social communication disorders. The interview debrief also enabled me to foreshadow aspects of my own UOS the students would take the next year, and this was a motivating factor in my participation in the simulation.

The hypothetical ethical dilemma

Casper is a 21-year-old man who was involved in a water sports accident that resulted in a severe traumatic brain injury. Casper was treated in a brain injury unit and has now returned home. Casper's mum, Sharon, has explained that while functional, Casper is experiencing difficulty in some areas of his day-to-day life. One issue in particular is his lack of inhibition. This recently surfaced in an incident with an old school friend. Casper behaved inappropriately towards the young woman and she was left deeply upset by his actions and wanting to lodge a complaint against him. Sharon intervened and persuaded her not to follow through with the complaint, believing that this would be the only instance of such behaviour. Sharon has booked him in to see a psychiatrist about his behaviour but does not want to tell the psychiatrist about the incident for fear that he will put Casper on medication that will make him sedated and "zombie-like". Sharon wants the SLP (you) to work with Casper to explain appropriate behaviour. She tells you that there is no need to tell anyone else about the incident.

There are a number of ethical issues presented by this case and this is reflective of the complexity and multiple layers of the caseload that SLPs may be exposed to (McAllister, 2006). These include the issue of whether or not the SLP should maintain the confidentiality of the client's mother. Should the speech pathologist break the confidence of Casper's mum and speak with the psychiatrist or should she act as Sharon has asked her to? This will form the basis of the current discussion.

Applying the principles-based approach

The Code of Ethics (SPA, 2010) includes principles that guide ethical decisions, thus use of the principles-based approach will promote adherence to the requirements

prescribed for the profession. The principles-based approach is founded on the work of Beauchamp and Childress (2001) and includes the four principles of autonomy, beneficence, non-maleficence and justice. This approach enables us to decipher what principles are most relevant to the case and to weigh up the ability of different proposed outcomes to fulfil these principles. This is especially pertinent given the complexity of the given hypothetical case.

In implementing the principles-based approach, we must consider whether there is a problem that requires action (SPA, 2014). In relation to our ethical dilemma, we must decide whether to act in accordance with client confidentiality or to disclose the incident. Would it be possible to discuss the topic with the psychiatrist without breaching Sharon's confidence? There is also the possible third option of encouraging Sharon to disclose the information herself.

This decision is complicated by many principles embedded within the scenario. Beauchamp's (2007) four principles can be applied to the case in order to align our reasoning with the standards that we should strive to implement as health professionals. *Autonomy* requires us to respect the rights of our clients to make their own informed decisions, to exercise free will and agency. According to this principle, Sharon and Casper have the right to make their own decision concerning whether or not to disclose information. The principle of *beneficence* (to do good) is relevant as the psychiatrist may not be able to provide the most benefit to Casper without you disclosing the incident so as to create a more complete image of Casper's behaviour. *Non-maleficence* is applicable in the sense that medicating Casper, a possible consequence of revealing the incident, may cause harm to him (as believed by Sharon) and it may also cause harm to his family in the form of legal costs and emotional upset and a sense of betrayal towards you. Non-maleficence is also relevant as Casper may continue to behave inappropriately towards, and cause harm to others, including the young woman. Finally, the fourth principle of *justice*, in terms of dealing with all clients equally and fairly, is applicable as although Casper has a cognitive impairment, he should receive the same rights to intervention as other clients. The fact that he has not been given the opportunity to voice his views on the events is a barrier to meeting this principle.

In addition to these four principles, the Code of Ethics (SPA, 2010) also encourages us to consider truth and professional integrity. By application of the *truth* principle, we are to provide accurate, honest information to people we come into contact with. While we have not come into direct contact with the psychiatrist, it is questionable whether withholding information regarding the incident is upholding this principle. With regard to *professional integrity*, it is pertinent to consider whether we are working within the legal guidelines of our profession concerning confidentiality and the circumstances which permit the breach of confidentiality.

The standards of practice outlined by the Code of Ethics (SPA, 2010) necessitate that information about our clients, or the confidences they share with us, must not be disclosed "unless our clients consent to it, the law requires us to disclose it; or there are compelling moral and ethical reasons for us to disclose it" (p. 3). This directs us to the *Privacy Act 1988*, where S16A states that the use or disclosure of personal information is permissible when it is unreasonable or impracticable to obtain the individual's consent to disclosure and it is believed necessary to lessen

or prevent a serious threat to the life, health or safety of any individual, or to public health or safety (ComLaw, 2015). This does not bring us to a final decision but rather directs us to further investigation as to whether there is a serious threat to public safety that can be lessened or prevented through the disclosure of information. In order to make a fair judgement, the situation should be discussed with Casper and Sharon and they should be given the option to disclose the information themselves. If they continue to refuse and enough information has been gathered to suggest that the circumstances under which the information can be disclosed have been fulfilled, you may decide to disclose the information yourself. The Code of Ethics (SPA, 2010) outlines that a member, if unsure whether to report a matter, should contact the Senior Advisor Ethics and Professional Issues at the National Office to discuss the issue. In following this procedure, we are being honest and mindful of acting in a way so as to benefit and avoid harm to others and so are acting in accordance with the Code of Ethics (SPA, 2010).

The level of consideration and thought provoked by applying the principles to this scenario is testament to the usefulness of this approach. This method provides a clear framework and vocabulary for identifying ethical concerns in health care situations (McCarthy, 2003). In weighing the extent to which these principles are fulfilled by the possible responses to the dilemma, we can be more confident that our final decision is consistent with our legal obligations and the professional guidelines set by SPA.

Applying the narrative approach

Constructing a holistic picture of our clients, their interactions with others and the environment is a vital part of client-centred care (WHO, 2001), yet the principles-based approach does not specifically direct us to such open consideration of different perspectives and contextual factors. The narrative approach (Charon, 2001) offers a solution to this potential limitation of the principles-based approach by encouraging us to consider the stories of those involved (Charon & Montello, 2002). Rather than merely focusing on the current circumstances of the people involved, it encourages reflection on their past and future (Nelson, 2014). This approach is especially applicable to this hypothetical case, given the number of people involved and the conflicting interests of these people.

This approach is also one commonly used when dealing with vulnerable people (SPA, 2014). Given Casper's cognitive impairment, he may find it difficult to voice his opinions. The narrative approach seeks to draw attention to the primary client and to form a resolution that is consistent with their story (Charon & Montello, 2002), thus making contact with Casper and encouraging him to share his perspective is a priority. In spite of this information gap, we will consider his story based on the information gathered through the simulated client interview with Sharon.

Casper

This exercise did not involve actually meeting Casper, but in a real-life situation, gathering Casper's story would be important and a SLP may have skills that facilitate hearing his story. In considering Casper's past story, it is important to understand his life and identity before the accident. Casper was very sociable and outgoing with a large group of friends. Since the accident, Casper's friendship network has shrunk and his relationships with others have been damaged. He is unable to understand when someone else is annoyed at him and this, along with his difficulty filtering

what he says, has resulted in some heated arguments with family and colleagues. His lack of inhibition has also been observed in his use of social media; for example, Casper has sent unsuitable, sexually charged messages to girls via Facebook. It is important to determine how much he understands about appropriate behaviour and how much he can control his emotional responses. The narrative approach is highly valuable in seeking the story of all those involved.

Sharon

Sharon is the mother and primary carer of Casper. While she believes that in many ways he has not changed following the accident, she is concerned about his difficulty with interacting with others. She believes that although some adjustment is required in the short term, in time everything will be back to normal. She holds hopes that Casper will find a girlfriend and eventually settle down and have his own family. Hearing Casper's inappropriate interactions with girls is therefore especially upsetting for her and she wants to protect him from being in a difficult situation. She thinks that this will be the last of his inappropriate behaviour and does not think anyone else needs to know about it. She especially does not want the psychiatrist informed for fear that he will medicate Casper. We do not know why Sharon holds such fears and this is something that we need to investigate.

Casper's female friend

Casper's female friend was happy to meet up with her old school friend Casper and was unaware of the impact the accident had had on him. She feels confronted and alienated by Casper's actions and is very upset. She felt inclined to report him to officials as doing so could prevent such harm from occurring to others in the future. We do not know the exact details of Casper's behaviour that night and clarification from her would allow us to make a more guided judgement. In hearing her story, we may also learn information about her past experiences that may illuminate further her reaction to this incident.

The psychiatrist

The psychiatrist has not yet met Casper but is eager to hear his reasons for psychological intervention and to construct a bigger picture of his case, building on the information Sharon provided over the phone. We do not know whether or not he is inclined to medicate his patients.

The SLP's role in Casper's story

In considering these stories, we are brought into deeper enquiry as to whether the disclosure of the incident would benefit the most people. Sharon and Casper have already gone through an incredibly difficult time coming to terms with the accident. Will disclosing the information be of any benefit to them? From the perspective of the psychiatrist, the answer is yes, as a more complete picture enables a more personalised, accurate intervention. From the perspective of Sharon, it would risk the medicating of her son and result in a difficult legal situation. From the point of view of Casper's female friend, the benefit is peace of mind that there will be intervention to help prevent such incidents from occurring in the future.

Sharon's argument is that this type of event will not happen again. Given what is currently known, Casper's story does not appear to support this. A key aspect of the narrative approach is considering what is most consistent with the client's story (Charon & Montello, 2002). Considering his history of inappropriate behaviour and

his lack of insight into such events, there is little reason to believe that such behaviour will discontinue. Additionally, Sharon's hopeful attitude that he will return to his previous abilities conveys her unrealistic beliefs towards Casper, making such a statement even more questionable.

The role of the narrator is to encourage multiple voices to be heard and be involved in the decision-making process rather than to focus on reaching an endpoint (Jones, 1999). Considering the first-person narrative is to be privileged (McCarthy, 2014), it is essential that Casper's perspective be uncovered before reaching a decision. This should be the first step undertaken. Understanding the stories of those involved does point to areas where particular care and counselling should be provided. For example, informing Sharon about her and her son's rights to refuse the medication and helping them gain a more realistic understanding of what can be expected for Casper and his recovery present as pressing issues.

Student's reflection on the two approaches

The narrative approach encourages us to delve into the emotional and psychological landscapes of clients and their families and in doing so we are better able to identify how to work with them (Nelson, 2014). Because this activity involved a simulated interview, as the student in this exercise, I was able to actually listen to Sharon and console her as she discussed the recent difficulties of her son since the accident. This helped me to appreciate the way emotions, stories and perspectives of those involved can shape the way we may respond to an ethical dilemma. They interplay with the principles within the Code of Ethics (2010) and complicate the situation as we try to weigh up the outcomes of different responses to the dilemma as they influence those involved. In contrast, the principles-based approach guides our reasoning so that the key themes of an ethical dilemma are logically and thoughtfully considered principle by principle. Our personality and predispositions may make one approach more appealing than another; however, this article stands as evidence for the application of either of these approaches, as each promotes a depth of analysis and understanding beyond our own personal judgements. Ideally though, a combination of both approaches should be attempted as it allows us to come to a more comprehensive understanding of the needs and considerations of our clients and their family and will allow us to better fulfil the ethical standards of our practice. This is a key learning objective for student SLPs ahead of graduation, and a challenge for both novice and experienced clinicians as they navigate a range of ethical dilemmas in clinical practice.

In the classroom, ethics instruction can appear devoid of real-life application. As the student in this activity, I came to understand the use of these frameworks to structure my thinking so that multiple perspectives and issues can be clearly and carefully deliberated. Halfway through my course, I now feel equipped with the tools that will allow me to provide a service that reflects a higher level of ethical reasoning than if addressed purely on my own moral accord. These frameworks do not only provide students with a structure to address ethical dilemmas, but can also enhance the quality of care provided by speech pathologists of all levels of expertise in their clinical practice.

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Ethical reflections from speech pathology students and new grads

Fresh thoughts from the coalface

Suze Leitão and Trish Johnson

Suze and Trish are the Chair, Speech Pathology Australia Ethics Board and Senior Advisor Ethics and Professional Issues respectively. The mission of the SPA Ethics Board and these two leaders is to get the “ethics” message out and support the profession in moving to a proactive approach to professional ethics. We are grateful for the contributions from our final year students and new graduates that have allowed us to hear their story¹ and reflect on the themes that emerge.

“It is fundamental to the professional responsibilities of speech pathologists that we observe the highest standards of integrity and ethical practice.” (SPA Code of Ethics, 2010)

In keeping with the theme of “fresh science and pioneering practice”, the SPA Ethics Board asked for contributions from current students and newly graduated speech pathologists. We asked them to reflect on ethical issues and dilemmas in their clinical practice and how they had addressed these. In this “Ethical reflections” column, we present three contributions in their own words, followed by our reflections on the themes that emerge. We also make links to the SPA Ethics Training Package (Leitão et al., 2014) with suggestions that may support other new graduates. Overall, these submissions highlight the ways in which students and newly graduated speech pathologists do consider the SPA Code of Ethics (2010) in their daily practice, and the importance of having access to experienced clinicians to support decision-making.

A final year student

GG

The ethical dilemma I faced while on placement involved a man who had been in hospital for some [several] months. He had suffered a stroke, which rendered him severely aphasic and for the most part immobile. The man was not elderly and prior to his admission was completely independent. As he demonstrated severely impaired cognitive communication and did not have any family that could provide care for him, he was deemed an unsuitable rehabilitation candidate, and was waiting to be placed in a nursing home. This situation seemed unjust for a man of his age.

There was a clash of ethical values between the allied health staff about the alternative actions. Initially, he had severe dysphagia and was non-verbal, but over time he was able to enjoy a normal diet and showed limited communication skills. Despite these gains, language assessments did not show consistency in

his comprehension. Expressively, he would only utter cycles of “yes” or “no”, or repeat random numbers. We were unable to demonstrate formally that he had the baseline communication skills needed for rehabilitation. Within concrete social situations however, he appeared to have a higher level of comprehension. For example, when frustrated or needing assistance, he would shout profanities until someone understood his needs. He once called me back in the room after an assessment to hand me the pen I left behind. He also understood when told that he would be transferred to a nursing home, and became angry. My clinical educator and I believed these and other examples demonstrated insight, memory, and some functional communication, and that he had potential to benefit from rehabilitation.

The ethical issues at stake (SPA Code of Ethics, 2010) were justice (2.3), beneficence and non-maleficence (2.1), and patient advocacy (3.1.6). By denying this gentleman rehabilitation, he was not being given an opportunity to have the best possible quality of life and overcome his disability. Placing him in a nursing home at his age without rehabilitation to maximise his ability to participate in life would be detrimental to his well-being, and was not acting in his best interests.

I worked with my clinical educator and a team of allied health staff to advocate for him. My clinical educator encouraged me to continue to work with him and try different ways to demonstrate his abilities. We documented every success and wrote several reports. After many unsuccessful attempts, he was finally accepted into rehabilitation. The day that he was told that he was accepted into rehabilitation, you could not wipe the smile from his face. This experience taught me that even as a student, I am still able to act as a representative for those who may not have the ability to voice for themselves. Discussion and determination can lead to outcomes which are fair and act in the best interest of the patient.

Suze Leitão and Trish Johnson - ethical reflections

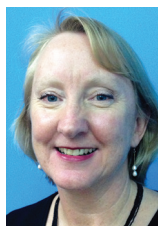
This case scenario, by a final-year speech pathology student on clinical placement, clearly illustrates the dynamic and fluid nature of ethical reasoning used by newly graduated speech pathologists and described in the dynamic model of ethical reasoning proposed by Kenny, Lincoln and Balandin (2007). This conceptual framework incorporates elements of awareness, independent and

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THIS ARTICLE HAS BEEN PEER-REVIEWED



Suze Leitão (top) and Trish Johnson

supported problem-solving, decisions, and outcomes. These elements describe the phases of ethical reasoning frequently used by speech pathologists with less than 18 months experience, in an interactive reasoning process rather than stages of discrete steps

The initial stage of awareness was gradual – GG became gradually more aware of the ethical issues involved in the case, rather than a critical incident being the trigger. From this point she moved between the elements of independent and supported problem-solving. Her initial reaction was that the situation was “unjust”. This was followed by GG drawing on her clinical reasoning based on documenting communication information about the client’s performance, and her beliefs and values drawing on the SPA Code of Ethics. As a student on placement, she had a clinical educator who was in the position to support her problem-solving through discussion and creation of a plan to document the abilities that were not easily demonstrated. Supported problem-solving drew on the checking and discussing features of this element of the model (Kenny et al. 2007). This stage of supported problem-solving and encouragement may not always be in place for new graduates and can be crucial in developing the skills and confidence for independent ethical problem-solving in the future. The decision-making element in this case was the acceptance of the client for rehabilitation as a result of the advocacy by the student clinician and her clinical educator. Her evaluation of the final outcome allowed her to reflect back on the process involved and the role she played as an advocate for her client.

In this clinical ethical reflection, it is clear how GG has learned skills in client management beyond a narrow “clinical” view. A further exploration of this scenario could also draw on the “ethics of care” approach documented in the SPA Ethics Training Package (Leitão et al., 2014). An ethics of care approach may be adopted by following guiding questions that prompt us to carefully consider key relationships involved in a dilemma. The following broad questions are suggested to support the process of analysis of a case with more focused questions underlying each:

What are the needs of the individual and family affected by this dilemma?

What are the roles and responsibilities of the health care team in providing care?

Are there any barriers to effective care?

What resources are required to provide competent health care?

How are clients responding to care?

How can I improve the care offered to clients? (Leitão et al., 2014, p.75)

In this case, the ethics of care framework may support consideration of the needs of the client who is disempowered by the current situation and hence the advocacy role taken by the student clinician and her clinical educator.

A newly graduated speech pathologist

JC

As a new grad speech pathologist, I am currently more reliant on my theoretical knowledge than my clinical experiences when making decisions. I was lucky enough that my theoretical education included a unit devoted purely to ethics. The content of these classes and the discussions about ethics that they generated is something that has directly impacted my day-to-day practice. This education in ethics has taught

me how to recognise an ethical problem, which is something that may come naturally for someone who has worked clinically for years. While I don’t map it out step by step, a general understanding of the Brown and Lamont (2002) ethical decision-making protocol (reprinted in the Leitão et al., 2014) has allowed me to recognise the issue and take the first steps to resolving it when something doesn’t feel quite right.

The ethical problems I have encountered since graduating have not been huge dilemmas. However on reflection, I make decisions containing ethical issues very often, and rely on my theoretical learning to do so. An example of these has included [deciding] what to do when a family openly reports that they are not doing home practice, and constantly miss sessions. Another example was when a client’s mother wanted to trial her daughter on a high-tech AAC device she had purchased after reading about it on the Internet (her daughter continues to astound me with her ability to use this machine).

The most comforting thing for me as a new graduate, and therefore at least somewhat unsure on every decision I make, is that I am not making them alone. Referring to the SPA Code of Ethics allows me to use it as a bit of a moral compass that covers areas my gut feelings don’t cover, and justifies the areas it did. I am also fortunate to work in a very supportive environment where I can access wonderful advice from a number of experienced speech pathologists. The explicit inclusion of ethical practice in my course has very much impacted the speech pathologist I am, and the speech pathologist I hope to still become.

Suze Leitão and Trish Johnson – ethical reflections

On reading this reflection we were struck by the fact that the newly graduated speech pathologist identified that she was still building up her “case-based” experience. In other words, JC is describing the idea that as we gain experience, we learn from the cases we have managed: both the ones that work out well but also those that don’t. In the SPA Ethics Training Package (Leitão et al., 2014), this relates to the chapter on “casuistry” – a perspective where clinicians draw on their own experience or documented cases to help solve current ethical problems or dilemmas. By considering the most important issues in a current scenario (e.g., not doing home practice and missing sessions), the clinician can try to flesh out what the current dilemma might be (e.g., not adhering to evidence-based guidelines for treatment, the client failing to make progress, another client missing out on access to appointments). The clinician can also consider if she or he has managed a similar case before and reflect on what the outcome was at that time. The approach taken, the evidence drawn upon, the outcome and – of course – the similarity to the current case, may be helpful in making a plan for this scenario. If, as is often the case with new graduates, a similar case is not yet in their repertoire, turning to the published literature or a more experienced colleague, may also be of help. In this scenario, the graduate clinician may then draw on a previous case perhaps leading to a phone call at a convenient time to listen to the mother’s story, explore barriers to attendance and home practice, and perhaps put in place other strategies, such as a different time for the session or training an older sibling to carry out some of the home practice.

In this reflection, JC has commented on how working in a supported environment allows her to access such advice. This highlights how important it is for new graduates to be able to access professional mentoring and support on a regular basis to discuss such scenarios and build up their “casuistry”. JC’s reflection also highlights how most of the ethical issues she encounters are not dilemmas or major crises, just potential issues. This reminds us of the importance of being proactive rather than reactive in every day professional (ethical) practice.

A newly graduated speech pathologist reflecting on ethical issues both as a student and a new graduate

SC

The Speech Pathology Australia Code of Ethics (2010) provides a framework for clinical decision-making, and accountability and practice guidelines. Such codes assist individuals by outlining their legal obligations as distinct from the personal values of a professional and the values of the profession” (Cross, Leitão, & McAllister, 2015). As a certified practicing speech pathologist, I draw upon the Speech Pathology Australia code in my daily professional activities. For example, I refer to the code for report writing (most specifically the Standards of Practice descriptors 3.1.2, 3.1.3, 3.1.4) and prioritising clients (most specifically the Principles descriptor 2.1). However, I draw upon the code most heavily to guide my thought processes and subsequent actions when lines blur between my professional self and my everyday self.

I identify as a speech pathologist. For most of us, speech pathology is not simply a job. Despite the romanticism associated with this notion, it can be troublesome. The first time the SPA code became truly salient to me in the real world was during my clinical training. During an assessment session for the early intervention team, I recognised my partner’s friend, Jane², the mother of a child recently diagnosed with “X”. The recognition was not reciprocated; however, I had to work hard to maintain the demeanour of my professional self. A few weeks later, my partner showed me a video of Jane and her child through social media. No detail of the child’s diagnosis was referred to in the social media post, but it was evident that the child presented “atypically”. I had to fight the urge to explain to my partner that I knew why since I was part of the assessment process. The SPA Code, specifically the Standards of Practice relating to confidentiality (3.1.4), made the decision to either remain silent or explain clear. There was no ethical dilemma, so I remained silent.

Since graduating, I have been faced with ethical dilemmas. Most commonly, I have had friends and families accessing or in need of speech pathology services. They have in turn asked me specifically to provide intervention. A primary reason for this is the ubiquitous waitlists for both public and private paediatric speech pathology services. Perhaps I should recommend a clinician I know personally, but do I really know they will be the best fit for these families (3.1.3)? Or is this in fact implicating the Autonomy (2.4) of these potential clients by removing them from the decision-making process? Or should I consider the

whole issue a Conflict of Interest (3.3.7) that violates the collective Values of the code? As I refer the code to frame the iterations of my decision-making, I decide that this does constitute a conflict of interest, and is no longer a dilemma. More apparent is how good decision-making as a clinician can be impacted by what seems like a relatively simple request from a friend or family. Fortunately, I have been able to direct the requests to the Speech Pathology Australia The Find a Speech Pathologist Search function (<http://www.speechpathologyaustralia.org.au/information-for-the-community/find-a-speech-pathologist>) and circumvent any conflicts of interest.

The Speech Pathology Australia Code of Ethics (2010) provides a framework for clinical and practical decision-making. This is especially true when common sense is blurred between professional and everyday life.

Suze Leitão and Trish Johnson – ethical reflections

In 2006, Lindy McAllister challenged the profession to “think and act ethically in the daily routines of the workplace, not just when confronted with an ethical dilemma”. (McAllister, 2006, p. 79). In this final reflection, we can see how SC has found the SPA Code of Ethics to be of value in guiding decision-making, in particular when personal and professional worlds collide! We were also struck by the way in which SC has been able to turn some potentially challenging situations into a proactive way of thinking to guide every day thinking.

These three reflections have shown how those “fresh eyes” are considering ethical issues in their daily practice, and how our goal of supporting the profession in moving from a reactive model of drawing on the code in response to a dilemma, complaint, or problem to a proactive model of ethical professional practice (risk management/risk prevention) is being realised.

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- 1 All students and new graduates have been de-identified to maintain confidentiality.
- 2 Jane is a pseudonym.

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Top 10 essential tools in assistive technology

Charlene Cullen



Charlene Cullen

Charlene Cullen works at LinkAssistive as a speech pathologist and assistive technology specialist. She spends time providing training and support and keeping up to date with new technologies available for people with complex communication impairments. LinkAssistive is an Australian supplier of assistive technology products and services. Augmentative and alternative communication (AAC) devices and software, computer / device access products, products for special education and mounting equipment are part of their product portfolio.

Charlene has identified the following top 10 resources as essential tools for assessment and training in the assistive technology field of speech pathology.

1 Skype, Viber, Tango

These tools have been around for a while but are often underutilised. Most of us use Skype (www.skype.com) for a group phone meeting or for a chat, but the video function has been a lifesaver for diagnosing technical issues on someone's AAC device. It often helps to "see" the screen and we have had families ring in with Viber (www.viber.com) or Tango (www.tango.me) and use the video function, and we have solved technical issues on the spot rather than having to organise for the device to come in for repair. Imagine the ways you can use video features for training and other speech pathology practices!

2 Google sheets

We use a number of cloud-based options for storage of shared files, but creating spreadsheets for the trial waitlist database in Google Sheets means that we can access the database across multiple sites and work on the spreadsheet at *exactly* the same time with no conflicting document issues. You can use Google documents, presentations, sites, sheets, and forms with your colleagues and make comments and edit collaboratively – no more messy track changes! <http://www.google.com.au/sheets/about/>

3 Teamviewer

Remote control any PC or Mac over the internet. A great option for providing remote technical support or demonstrating how to do something in communication software on a speech-generating device. This is extremely handy when you can't physically be there to show someone what to do or see what gremlins might be playing up in the device! www.teamviewer.com

4 Websites for alternative access

When we are visiting therapists, schools, or families, it is always helpful to have a range of activities on hand to assess and determine if the eye gaze devices will be suitable. Sometimes this will be commercial software such as Look2Learn with activities to learn eye-gaze technology, but there are also some great free websites with simple "mouse click" and "mouse over" (hover) functionality such as www.owlieboo.com and mrwatson.education or you can create some art using www.jacksonpollock.org These are also great for teaching a range of different language skills!

5 Facebook groups and pages

Social media is a fast way to find information in a particular area and also to share what you know. It's not just in our own circle of influence now: we can reach all over the world and get access to in-depth discussion that would have taken a long time to achieve in past years. Some favourite pages and groups to follow in the assistive technology field of speech pathology are:

Augmentative Communication Resources & Help: www.facebook.com/groups/aacresources/

AGOSCI Inc.: www.facebook.com/AGOSCI

Assistive Technology: www.facebook.com/groups/assistive.technology.group/

Tobii UK: <https://www.facebook.com/groups/tobiuk/>

6 Blogs

Reading blogs is a great way to stay fresh and know what's happening with AAC and assistive technology (and any other field in speech pathology for that matter). Highly recommended blogs with frequent and practical content are "PrAACtically Speaking" by Carole Zangari (www.praacticalaac.org) and "Teaching Learners With Multiple Special Needs" by Kate Ahern (www.teachinglearnerswithmultipleneeds.blogspot.com). And if you have too many blogs to keep track of, then use a blog aggregator such as Feedly (www.feedly.com) where you can read all your blogs in one place.

7 Evernote

No matter which field of speech pathology you are working in, Evernote would certainly be a useful tool. It is a cloud-based software service for creating, organising, and storing all sorts of media such as text documents, photos, videos, audio files, and webpages. Use it as an app, on the web, or download the software. It's fabulous for storing

electronic journal articles and then you can search for particular articles just by using keywords that might be in the text or a tag that you have assigned. It's also great for checklists and note-taking at conferences or workshops. And that's just the start! www.evernote.com

8 Windows apps for games

Apps are all around us and there are some great Windows 8 apps that work well with eye-gaze devices such as the EyeMobile (eye gaze on a tablet) or PCEye Explore (eye tracker attached to your PC) without requiring too much precision and are great for all ages. Check out "Police Pit" or "Extreme Air Hockey" in the Windows Store (www.apps.microsoft.com).

9 Toolkit

Working with technology means that it's important to take along a toolkit to help with diagnosing issues, measuring, and tinkering. Wherever I go, I make sure I have a USB keyboard with trackball, Allen keys for adjusting mounting systems, measuring tape (you just never know), mini

screwdrivers, spare USBs to make back ups, Bluetooth speakers, and screen cleaners.

10 Trial devices

These are available from a number of Australian suppliers. They are a great way to try out a speech-generating device with someone who has communication needs or requires computer access. Most devices can be trialled for at least two weeks and in some cases, rentals are available for longer periods. There is often a waitlist so keep in touch with your supplier and be prepared to make the most of the trial time.

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Webwords 53

Forging professional identities

Caroline Bowen



Webwords anticipated a forthright answer when she asked Speechwoman what she thought of the title of Webwords 53.

“It’s open to more than one interpretation”, Speechwoman said tersely. “Why not replace ‘forging’ with a word like attaining, or building, or constructing, crafting, creating, developing, establishing, fashioning, forming, growing, h...” She went on a bit. Alphabetically. I mean, honestly and truly! The woman is a talking thesaurus.

“Pernickety and pedantic,” muttered Webwords, not quite quietly enough.

“I heard that, and no, I’m sorry, your title is ambiguous.”

“Deliberately so.”

“So you *want* ‘forging’ to imply ‘purposefully creating something strong, enduring, or successful’ and ‘faking it’?”

“Absolutely, because faking it can be a useful tool – especially for novices in a field, or newcomers to a specialised area within one.

“Says?”

“Says Athene Donald. She’s writing about career progression, confidence building and moments of transition to independence.”

“Ah.” Speechwoman is nothing if not a good listener, and now she was almost prepared to really, really listen. But not before allowing herself a final salvo, “If you’re including the part about pedantic and pernickety, you will have to put persnickety, persssssnikety. For your American readers. Since you like to speak to the international SLP/SLT community.”

“They’ll figure it out. Are you going to listen to this?”

Speechwoman composed herself as Webwords read from the screen the last couple of sentences of the piece that had caught her interest.

...faking experience and faking confidence are all good ways of coping with uncertainty and lack of knowledge. You will know you’re doing it, but by practicing sounding calm and certain, over time when you find – with luck – that the world has not crashed around your shoulders and that you are indeed moving forward rather than back each time you do it, the fake will become the real thing. And then you are ready for the next challenge, and the next. Athene Donald, “Faking It”, June 2015

Fresh Sciences

Webwords 53, in the November 2015 issue of the *JCPSLP*, “Fresh science and pioneering practice”, is flanked by an

exciting array of articles: uniquely interesting because they are the outcome of student project findings. Based on honours and quality improvement projects, and units of independent study, they were completed in the 2014 academic year by speech-language pathology (SLP) students enrolled in undergraduate or masters level professional preparation programs in university courses around Australia.

If Webwords guesses correctly, most of the authors will have put their student personas to one side, for the time being at least, to embark on careers in speech pathology — or, to wait for a **full-time job**² to come up (HWA, 2014, p. 30). Some will be bitten by the research bug and go on to be doctoral students, post docs, early career researchers, and so forth; most will pursue a clinical career; a handful will do both; and many will eventually assume administrative roles. Inevitably, they will struggle at times with issues around work-life **balance**³ and setting professional **boundaries**⁴, or enjoy the challenges they pose. A significant number of them will leave the field (McLaughlin, Adamson, Lincoln, Pallant & Cooper, 2010), or leave and **return**⁵.

Whatever the case, all will need a periodic boost to spur them on whether they are primarily high self-reinforcers, or whether they generally look to others for support and encouragement. Everyone needs a fillip from time to time. So this seems like a good opportunity for Webwords to hunt down a selection of wisdom tucked away in blogs and books, and helpful online resources, for SLPs/SLTs at all stages of their careers.

Blogs

Little wonder Speechwoman became closely attentive at the mention of British academic, engaging blogger and steady Tweeter, Dame Athene Donald, Professor of Experimental Physics at the University of Cambridge.

In February 2015, she **blogged**⁶ reflectively on eight matters she wished she had been on top of as a student and early career researcher. 1) Don’t be fooled or intimidated by a supremely confident demeanour in another, and 2) beware of the dangers of over-confidence in yourself. 3) By all means plan, but understand that an inflexible 5-year plan may lead to missed or unnoticed opportunities along the way. 4) No matter how irrelevant skills and facts acquired at school or as an undergraduate may seem now, most will be useful at some point. 5) Don’t feel the need to emulate someone else’s “right way” of doing something successfully; find a way that that builds on

your strengths and suits your style: it may even be superior. 6) and Seven (for perfectionists): you *can* cut corners, but know the angles; and show willing when opportunities arise, even when you are aware that you are not the perfect person for the job, *now*: work hard at on-the-job training. 8) Asking a question (once, mind!) is not an admission of weakness, but a sign of strength.

Akin to public **speaking**⁷, answering and asking questions publicly can be fraught with participation anxiety, and the calmly named Serena at Queen's University in Kingston, Ontario, presents six strategies that helped her when she was a student, too scared to raise a hand in class in order to **answer**⁸ a question. By contrast, Dorothy Bishop at the University of Oxford addresses the (mainly female) participants at professional meetings who ask questions inside their heads but keep schtum when called upon to **ask**⁹ one out loud. Irritated by the passivity she perceives among these particular women, and attempting to explain it, Bishop refers to Virginia Vallan's compelling 1999 book **Why so slow?**¹⁰

Blogs can be sources of clinical guidance too. Take for example Pamela Snow's "I'm behaving at you! **Are you listening?**"¹¹ in which she reminds the reader that all behaviour is a form of communication, and that the behaviours associated with certain emotional states and skill deficits are easily mistaken for poor engagement, uncooperativeness, rudeness, or lack of motivation.

Books

Helpful advice and information are often neatly summarised, or presented as top tips, in blog posts about books. Lois Kelly's **review**¹² of *The Small Big: Small Changes that Spark Big Influence* includes a list of thought-provoking nuggets about persuasion, under the headings of communicating, influencing decisions, forming relationships, getting commitments, meetings, and building your network. Webwords found the idea of a book written by the "dream team of persuasion science" so enigmatic that she downloaded an electronic copy, and quickly appreciated why 77% of readers gave it a five-star rating. Publishers' websites often hold "think pieces" by their authors, and one that stood out in June 2015 was Eiki Satake's article on adopting an evidence-based **approach**¹³ in the clinical decision-making process. The article is in the Plural Publishing blog, providing a taster for Satake's 2014 book.

Resources

Every month since June 1998 Speechwoman has selected a speech-language pathology / speech and language therapy related **site of the month**¹⁴. Sometimes it is not so much a site, as a page, blog entry or resource within a site

that is worthwhile celebrating here. At the time of writing, 206 winners were listed. The Internet being what it is, many have disappeared, but many are alive and thriving so that Webwords can include them in an A to Z (respecting Speechwoman) selection of useful, interesting, entertaining or downright amazing web resources.

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Links

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- 2 <https://theconversation.com/too-many-graduates-not-enough-jobs-universities-profits-and-clinical-need-13482>
- 3 <https://rachelmdavenport.wordpress.com/2014/04/27/work-life-balance-and-the-doctoral-journey/>
- 4 <http://judystonegoldman.com/im-saying-no-and-i-mean-it-do-i-the-challenge-of-boundaries/>
- 5 <http://pilesowashing.blogspot.com.au/2010/07/once-speech-pathologist-always-speech.html>
- 6 <http://occamstypewriter.org/athenedonald/2015/02/11/i-wish-id-known-then-what-i-know-now/>
- 7 <http://www.duarte.com/blog/public-speaking-for-introverts-6-essential-tips/>
- 8 <https://studyskillstips.wordpress.com/2011/03/07/help-i-have-participation-anxiety/>
- 9 <http://deevybee.blogspot.co.uk/2012/03/cmon-sisters-speak-out.html>
- 10 <http://www.amazon.com/Why-Slow-The-Advancement-Women/dp/0262720310>
- 11 <http://pamelasnow.blogspot.com.au/2014/03/im-behaving-at-you-are-you-listening.html>
- 12 <http://www.foghound.com/blog/2015/04/27/learning-from-the-persuasion-scientists/>
- 13 <http://www.pluralpublishing.com/wp/?p=2310>
- 14 http://www.speech-language-therapy.com/index.php?option=com_content&view=article&id=25

Webwords 53 is at www.speech-language-therapy.com with live links to featured and additional resources, including the A to Z selection mentioned above.



Around the journals

Doeltgen, S.H., Bradnam, L.V., Young, J.A., & Fong, E. (2015). **Transcranial non-invasive brain stimulation in swallowing rehabilitation following stroke – A review of the literature.** *Physiology and Behavior*, 143, 1–9.

Chris Brebner

This is an excellent article which summarises the evidence for the relatively new area of non-invasive brain stimulation, a technique being used in swallowing rehabilitation. This article provides a descriptive review of the literature outlining the evidence that underpins this innovative technique in swallowing rehabilitation following stroke. Seventeen studies meeting the inclusion criteria were reviewed to explore the evidence. Particular consideration was given to the studies' participant samples, cortical representations that had been targeted by the brain stimulation, and the measures used to evaluate the outcomes. These studies show that non-invasive brain stimulation may be a useful additional technique to support post-stroke swallowing rehabilitation. In addition to summarising the key evidence in this area, the authors discuss the limitations of the current evidence, in particular the relative infancy of this area, the small participant sample sizes, and differences in the design of the studies designs that have been conducted. This paper also summarises the clinical implications of this research. A must-read for those working in swallowing rehabilitation following stroke.

Falkus, G., Tilley, C., Thomas, C., Hockey, H., Kennedy, A., Arnold, T., ... Earney, R. (2015). **Assessing the effectiveness of parent-child interaction therapy with language delayed children: A clinical investigation.** *Child Language Teaching and Therapy*, early online 1–11.

Tara Shem

Interventions that focus on the interactions between parents and their children are widely used by speech pathologists around the world. This article aims to address the lack of evidence, other than clinician report, on the effectiveness of such approaches. Eighteen parent-child dyads where the child was aged between 1;09 and 3;06 at initial referral participated in the UK-based study. Blind assessments pre and post intervention were conducted. The intervention used was a parent-child therapy regularly implemented for children in the clinical setting upon receiving an initial diagnosis of language delay. Results showed that after intervention, the children's mean length of utterance had increased, as had the proportion of child to parent speech. Additionally, there were significant changes in the ratings given in the parent rating scale. The authors state that their results show that there are benefits of an intervention that targets working with parents and children on their interactions. However, they acknowledge that further research is needed to determine whether these effects are maintained over time and whether there are benefits seen in the children's communication skills.

Hoff, E., & Core, C. (2015). **What clinicians need to know about bilingual development.** *Seminars in Speech and Language*, 36(2), 89–99.

Jess Young

This article is one in a special edition on language impairment in bilingual children. This excellent discussion paper summarises the key evidence for nine recommendations for clinical practice with bilingual children. The nine conclusions (including some myth busters) summarised are that: 1) speaking two or more languages does not confuse children; 2) two languages can be learned simultaneously, and need not be separated; 3) it takes longer for a child to become proficient in two languages in comparison with learning only one; 4) language dominance is not the same as having only one language; 5) the best way to determine a bilingual child's language learning capacity is to measure total vocabulary in both languages; 6) children's strengths in each language will vary; 7) as for monolingual children, the quality and quantity of input will influence language learning; 8) families should be encouraged to retain their home languages; and 9) there is great heterogeneity in bilingual language environments, thus bilingual children's language skills will also vary widely. A great read for all paediatric clinicians in our increasingly linguistically diverse nation!

What's new in aphasia?

Joanne Murray

Have you seen the new Australian Aphasia Rehabilitation Pathway (AARP) yet? It is a set of care standards designed for speech pathologists that aims to guide person-centred, evidence-based rehabilitation for people with aphasia. It was developed through national collaboration of speech pathology clinicians, researchers and people with aphasia and was launched in October 2014 at the Aphasiology Symposium of Australia. It consists of 82 best practice standards divided into eight core areas that cover the full spectrum of the rehabilitation journey for a person with aphasia from referral, through assessment, intervention, and enhancing the communicative environment. Each best practice standard is supported by a summary of the relevant scientific evidence, resources, and original references so it becomes almost a one-stop shop for current, relevant, evidence-based management ideas. The AARP fits nicely within the International Classification of Functioning, Disability, and Health (ICF) framework and addresses assessment and management of aphasia from an impairment perspective and via the social approach. It is therefore relevant for speech pathologists working across all health care settings from acute to community. The ultimate aim of the pathway is to improve the quality of patient management and optimise outcomes for our clients with aphasia, so take a look today at <http://www.aphasiapathway.com.au/>



Speech pathology resources

McPherson, K., Gibson, B. E., & Lepège, A. (2015). *Rethinking rehabilitation: Theory and practice*. Boca Raton, FL: CRC Press; ISBN 978 1 4822 4920 0; pp. 321. A\$177.90 (hbk), A\$140.95 (e-bk)

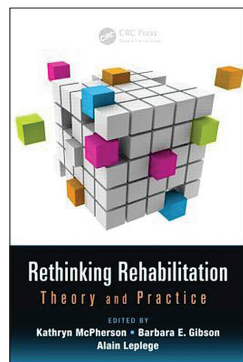
Deborah Hersh

As soon as I heard that this book was due for publication, I was keen to read it. I knew from its title and who its editors were that it would provide much food for thought for academics, students, and particularly practitioners working in rehabilitation. I had already read a number of papers by Professor Kathryn McPherson and her colleagues (for example, MacLeod & McPherson, 2007)

which had been insightful and provocative, and so I knew this book would provide an interesting resource for those wishing to explore their practice more deeply. In his foreword to the book, Professor Derick Wade describes it as “unusual” and suggests that the members of rehabilitation teams each pick a chapter and then bring it back for discussion to their colleagues. I agree. There is a lot for rehabilitation professionals to chew over in this book.

Section 1, “Rethinking the past and re-envisioning the future” has four chapters. The first explores the contribution of theory to rehabilitation, not in terms of adopting a single, all-encompassing theory, but rather a framework of theories at multiple levels. The second uses a historical perspective to provide a solid base for ideas about how rehabilitation might continue to evolve and develop. The third chapter challenges assumptions such as rehabilitation aiming for a return to “normal” (a cultural and social judgement), restoring quality of life (but then frequently assessing for that only on the basis of physical abilities), or focusing on independence without sufficient consideration of interdependence. Chapter 4 considers children’s rehabilitation and its relationship to “normal development” and typical milestones. Section 2, “Philosophy in action” contains five interesting chapters, which include new understandings of the mind/brain/body relationship, “therapeutic landscape” theory, the importance of social relationships within rehabilitation, and the recovery of self-identity. The final, third section, “Rethinking rehabilitation delivery, research, teaching and policy” includes another five chapters with creative ideas for improving rehabilitation, including a focus on outcome measurement and highlighting Indigenous perspectives (particularly a Māori perspective).

The editors of this book have invited prominent international academics and practitioners from across rehabilitation to contribute, for example, Professor Cheryl



Cott, physical therapist and social gerontologist; Professor Karen Whalley Hammell, occupational therapist; Professor Jacinta Douglas, speech pathologist, and others well known for their work on rehabilitation and goal setting such as William Levack, Richard Siegert, and William Taylor. I recommend this as a fascinating and thought-provoking resource, which deserves to be read, discussed, and even chewed over for a while to come.

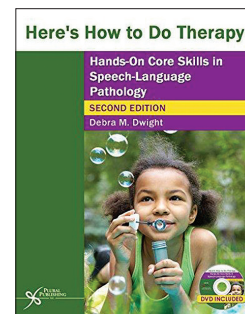
Reference

MacLeod, R. & McPherson, K. M. (2007). Care and compassion: Part of person-centred rehabilitation, inappropriate response or a forgotten art? *Disability and Rehabilitation*, 29 (20–21), 1589–1595.

Dwight, D. M. (2015). *Here's how to do therapy: Hands-on core skills in speech-language pathology* (2nd ed.). San Diego, CA: Plural Publishing. ISBN: 978 1 59756 565 3; pp. 387; US\$133.00; available from: <http://www.proedaust.com.au/heres-how-to-do-therapy-hands-on-core-skills-in-speech-language>

Suze Leitão

Here's How to Do Therapy is the recently released second edition of the practical text by Debra M. Dwight. It is part of the ‘Here's How Series’ by Plural Publishing – all written by experienced clinicians – which aims to teach clinical skills and knowledge using therapy vignettes and drawing on evidence-based techniques.



The author states that this text was prompted by the need to consider what speech pathology students need to know about therapy and how to teach these concepts. As such, this text is aimed at those involved in the clinical education and clinical supervision of student speech pathologists, as well as students themselves.

The book shifts focus between skills needed to teach student clinicians and skills that clinicians need to use with clients. It is founded upon principles of cooperative learning, interactive learning and the use of critical incidents in learning.

The early chapters introduce the therapeutic mindset and interaction in therapy and also cover basic considerations such as dress and grooming. Some of the information presented in these chapters is clearly designed for the American readership, such as the information on the various US laws that impact on speech pathology services.

Chapter 4 provides a broad introduction to learning theories; however, it does spend time discussing learning styles such as visual, auditory and tactile/kinaesthetic

which continue to be commonly drawn upon despite little scientific evidence as to their utility as an instructionally useful concept in differentiated instruction.

Chapter 6 is the core of this text and addresses 28 therapeutic specific skills ranging from expectations, enthusiasm and volume to more classically “clinical” skills such as shaping, feedback and prompting. Many of these therapeutic specific skills are illustrated in vignettes on the accompanying DVD.

The second half of the book contains 5 chapters, each of which outlines guided practice for therapy in the areas of language, articulation, voice, resonance and fluency. Two longer vignettes are also presented on the DVD.

The book’s strengths lie in its teaching of practical and clinical skills, and in this it fills a gap in the literature. It also presents these in a readable and interactive format, using examples, workshop forms for guided practice and a readable style. However, I found the book to be quite repetitive and some of the information presented in the earlier chapters, such as that on typical developmental expectations and learning theories, is covered in fuller detail in other broader introductory texts to speech and language development and disorders. The style of clinician interaction described in the text and illustrated in the DVD vignettes also may not appeal to an Australian audience which might find it too didactic in style. I am not convinced it will appeal to a wide range of Australian speech pathologists.

CALLING FOR EARLY CAREER RESEARCHERS!

Are you regularly reading the literature about an area of speech pathology practice? Would you like some journal editorial experience to add to your resume? Why not consider contributing to the *Journal of Clinical Practice in Speech Language Pathology* by reviewing new research articles in your area of expertise, for inclusion in ‘Around the journals’. For more information contact chris.brebner@flinders.edu.au or jcpslpeditor@speechpathologyaustralia.org.au

JCPSLP notes to authors

The *Journal of Clinical Practice in Speech-Language Pathology* is the major clinical publication of Speech Pathology Australia. Each issue of *JCPSLP* aims to contain a range of high quality material that appeals to a broad membership base. *JCPSLP* is published three times each year, in March, July, and November.

Issue	Copy deadline (peer review)	Theme*
Number 2, 2016	1 December 2015	National Disability Insurance Scheme
Number 3, 2016	13 April 2016	Creating Sustainable Services: Minority World SLPs in Majority World Contexts
Number 1, 2017	1 August 2016	Shared Decision Making

* articles on other topics are also welcome

General

Material submitted must be your original work. Any direct quotations or material used from other sources must be credited in full. If copyright clearance is required to use material included in your article, please supply evidence that this has been obtained.

Ethical approval

All manuscripts in which information about a person and/or organisation is presented must be accompanied by evidence of approval by an authorised ethics committee. This includes clinical insights, ethical conversations, manuscripts presenting the results of quality assurance and improvement activities within workplace settings, and research manuscripts.

Themes

Each issue of *JCPSLP* contains a set of articles relating to a particular theme, as well as a selection of articles reflecting broader speech pathology practice. The Editorial Board selects a theme for each journal, and these themes can be suggested by members of Speech Pathology Australia at any time. Manuscripts on any topic relevant to speech pathology practice can be submitted to *JCPSLP* at any time.

Length

Manuscripts must not exceed 3500 words (including tables and a maximum of 30 references). Longer manuscripts may be accepted at the discretion of the editor. It is highly recommended that authors contact the editor prior to submitting longer manuscripts.

Types of Submissions

When submitting your article to *JCPSLP*, please indicate the type of submission:

- **Tutorial:** Educational/narrative discussion on topics of interest to clinicians. This should include a brief overview of the current literature, as well as a section containing clinical implications.
- **Review:** Critical appraisal of the research literature in an area of research-practice that is relevant to practising speech pathologists.
- **Clinical Insights:** Articles that may be of primary clinical interest but may not have a traditional research format. Case studies, descriptions of clinical programs, and innovative clinical services and activities are among the possibilities.
- **Research:** Research articles with clear clinical relevance. These submissions will be judged on the review of the literature (including a rationale), methodology, statistical analyses, and a clear discussion directed to a clinical readership.

Peer review

Manuscripts submitted to *JCPSLP* undergo a double blind peer-review process. Regular columns (e.g., Webwords, Top 10, resource reviews) undergo editorial review. For peer-reviewed articles, *JCPSLP* uses a double-blind peer-review process, in which the anonymous manuscript is sent to two reviewers. The authors are provided with information from the review process. Often, authors are invited to revise and/or resubmit their work, as indicated by the reviewers.

Occasionally, the reviewers request to re-review the revised manuscript. In some instances, a paper will be rejected for publication. The editor's decision is final. The sentence "This article has been peer-reviewed" will appear after the title for all peer-reviewed articles published in *JCPSLP*.

Format and style

All submissions must be Word documents formatted in accordance with the following guidelines:

- All text should be 12 point Times New Roman, double spaced (except figures and tables), left justified.
- A maximum of five levels of heading (preferable 2-3 levels) should be used:
 1. Centered, boldface, uppercase and lowercase heading
 2. Left-aligned, boldface, uppercase and lowercase heading
 3. Indented, boldface, sentence case heading with a period. Begin body text after the period.
 4. Indented, boldface, italicised, sentence case heading with a period. Begin body text after the period.
 5. Indented, italicised, sentence case heading with a period. Begin body text after the period.
- Please use the terms 'speech-language pathology' and 'speech-language pathologist' (abbreviated to SLP) throughout article.
- Do not include images within the text of the article – send photos as separate attachments, digital images should be of high quality and preferably be sent as uncompressed TIF or EPS images.
- Use only one space after punctuation, including full stops.
- Use a comma before 'and' in a series of three or more items (e.g., "The toys included a ball, bucket, and puzzle")
- Clear and concise writing is best. Use short sentences and paragraphs and plain English. Please reduce bias in language as much as possible (i.e., avoid stereotypical terms, refer to participants, rather than subjects, and be sensitive to racial and ethnic identity).
- Reproduce any quotations exactly as they appear in the original and provide the page number(s) for the pages you have quoted from.
- References, which should be key references only, must follow the American Psychological Association (APA, 6th edition) (2009) style. For further details on correct referencing, visit <http://owl.english.purdue.edu/owl/resource/560/01/>.
- **Tables and Figures:** If there are to be tables or figures within your article, these should be presented on separate pages with a clear indication of where they are to appear in the article (in text indicate where the figure or table should be inserted). All tables and figures should be numbered. Figures should be presented as camera-ready art. Please ensure figures and tables appear at the end of your article with each table or figure on a separate page.

Documents to be submitted

1. Manuscript featuring:
 - a. Title
 - b. Author names and affiliations (will not be forwarded for peer review)
 - c. Up to 6 key words
 - d. Abstract (maximum 150 words)
 - e. Main body of text (**main body must not include any identifying information**)
 - f. Reference list (maximum 30)
 - g. Tables (if relevant)
 - h. Figures (if relevant)
 - i. Appendixes (if relevant)
 - j. Acknowledgements if relevant (will not be forwarded for peer review)
2. Author submission form (to be downloaded from *JCPSLP* website)
3. A colour photograph of each author (to be included in manuscript if accepted for publication)

Submitting your manuscript

Articles should be submitted electronically to the Editor, David Trembath at jcpslp@speechpathologyaustralia.org.au

