

MULTIPLE STAKEHOLDER PERSPECTIVES ON TELETHERAPY DELIVERY OF SPEECH PATHOLOGY SERVICES IN RURAL SCHOOLS: A PRELIMINARY, QUALITATIVE INVESTIGATION

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ABSTRACT

The objective of this study was to investigate stakeholders' views on the feasibility and acceptability of a pilot speech pathology teletherapy program for children attending schools in rural New South Wales, Australia. Nine children received speech pathology sessions delivered via Adobe Connect® web-conferencing software. During semi-structured interviews, school principals ($n = 3$), therapy facilitators ($n = 7$), and parents ($n = 6$) described factors that promoted or threatened the program's feasibility and acceptability. Themes were categorized according to whether they related to (a) the use of technology; (b) the school-based nature of the program; or (c) the combination of using technology with a school-based program. Despite frequent reports of difficulties with technology, teletherapy delivery of speech pathology services in schools was highly acceptable to stakeholders. However, the use of technology within a school environment increased the complexities of service delivery. Service providers should pay careful attention to planning processes and lines of communication in order to promote efficiency and acceptability of teletherapy programs.

Keywords: Rural, school, service delivery, speech pathology, telepractice, telerehabilitation

BACKGROUND

Delivery of allied health services to rural and remote communities presents a major challenge in many countries. The lower population density of rural and remote communities, coupled with their increased distance from metropolitan and regional centers has resulted in allied health services in Australia being predominantly delivered by clinicians based in larger regional centers or "hubs." Allied health professionals travel extensive distances to provide outreach services to people living in small rural and remote communities (Dew et al., 2013). With demand for services outstripping availability of health professionals, the reality is that people living in rural or remote areas often receive infrequent services or none at all (Dew et al., 2013). Verdon et al. (2011) found that people living in 98.6% of rural localities in New South Wales, and Victoria, Australia did not receive speech pathology services at the ideal frequency of at least a weekly service. Further, people living

in nearly one-third of these rural localities were judged to live beyond a reasonable travel distance of 50 kilometers to weekly speech pathology services.

Innovative use of technology may form part of the answer to address this gap in services (Dew et al., 2013). Ongoing improvements in the availability and reliability of broadband Internet connections offer the prospect for services to be delivered from a distance via the Internet to children and their families. However, despite Internet-based services increasingly becoming a part of everyday life for many individuals within the Western world, research into the effectiveness of telepractice in allied health is inconsistent at best. To date, teletherapy implemented using structured procedures and well-defined populations has been found to have similar outcomes to interventions delivered in-person. These include, for example, speech therapy for adults with voice and swallowing difficulties (Mashima & Brown, 2011), motor speech (Hill et al., 2006) and stuttering disorders

(Carey et al., 2010), occupational therapy to improve community participation in people with cancer (Hegel et al., 2011), and outcomes for adult neurological patients (Hoffmann & Cantoni, 2008). Unfortunately the results gained in such discrete treatment programs do not readily translate to interventions for people with diverse speech and language difficulties and their families.

More recently, there has been increasing attention given to teletherapy delivery of speech pathology services within school settings, particularly from the United States where nearly half of speech-language pathologists provide school-based services (Bureau of Labor Statistics U.S. Department of Labor, 2014). Recent studies suggest that children may make similar progress regardless of whether services are delivered via teletherapy or in the in-person mode (Gabel, Grogan-Johnson, Alvares, Bechstein, & Taylor, 2013; Grogan-Johnson, Alvares, Rowan, & Creaghead, 2010; Grogan-Johnson et al., 2013). School-based teletherapy delivery for speech pathology is also perceived positively by stakeholders including parents, teachers, and administrators (Crutchley & Campbell, 2010). Speech pathologists have suggested that teletherapy delivery within the school setting may afford certain advantages, including increased opportunities for collaboration between clinicians and school teachers (Tucker, 2012). However, it is unknown how such findings apply to telepractice in other locations, and whether positive perceptions of teletherapy are maintained within communities without a strong tradition of speech pathology involvement in schools.

To extend speech pathology service provision into rural communities, Royal Far West, a non-government children's health service based in Sydney, Australia, piloted a speech pathology service delivered via teletherapy to children who attended schools in rural New South Wales, Australia. In this program, called the Come N See (CNS) program, children identified as having speech and/or language difficulties via in-person assessments received a maximum of twelve 30-minute speech pathology teletherapy sessions on a fortnightly basis (i.e., every two weeks) between February and August 2013. Children attended CNS teletherapy sessions at their school, and were supported during sessions by a parent or therapy facilitator nominated by the school (i.e., parent volunteer, teacher, teacher's aide). The objective of this preliminary study was to investigate key stakeholders' (i.e., parents, school principals, and school staff) views on the feasibility and acceptability of the CNS program in delivering speech pathology services to children with communication difficulties attending schools in rural areas.

METHODS

The study was approved by The University of Sydney, Human Research Ethics Committee.

RECRUITMENT

As part of usual service delivery, speech pathologists from Royal Far West conducted initial in-person assessments with children attending one of six schools located south of Tamworth, New South Wales (Australian Standard Geographical Classification [ASGC] classification of RA2 inner regional area [$n = 1$] or RA3 outer regional area [$n = 5$]), who had been identified by their classroom teachers or parents/carers as having speech and/or language difficulties. Children whose assessment results established the presence of communication difficulties were invited (a) to participate in the pilot speech pathology teletherapy program, and (b) to participate in its evaluation for research purposes. Parents/carers were provided written information and consent forms about the study from their school principal or classroom teacher. The parents of nine children consented to participate in the research. Children's demographic and clinical details are presented in Table 1.

Table 1. Demographic and Clinical Details for Child Participants ($n = 9$)

Age mean (range)	9:10 (7:1 – 12:7)
Gender	
Male	8
Female	1
AGSC Remoteness Area classification for school location	
RA2 (inner regional)	1
RA3 (outer regional)	8
Distance of residence from school (km)	
Living in town	5
<20	1
20-49	1
>50	2
Type of communication goals established	
Speech only	3
Language only	3
Speech and language	2
None established	1

At the conclusion of CNS, parents/carers whose children participated in the evaluation of the program were invited to attend an interview about their experiences. Principals and therapy facilitators at each of the six schools that participated in the program were also invited to attend an interview. A total of six parents, three principals and seven therapy facilitators were recruited for interviews about their experiences with CNS.

PROGRAM DESCRIPTION

The CNS teletherapy program was implemented using Adobe Connect®, an online platform for web-based

conferencing, which connected a speech pathologist at a desktop computer based at Royal Far West, Sydney, to a web-cam equipped laptop or desktop computer in the child's school. Participating schools were provided with two headsets with headphones and microphones for use during sessions. A therapy facilitator ensured the technology was working and sat with the child throughout each session. A total of 99 teletherapy sessions were scheduled with the nine children participating in the study.

Table 2 presents details on the teletherapy sessions conducted ($n = 79$), and the therapy outcomes achieved in the CNS program, measured using the Goal Attainment Scale (GAS) (Kiresuk & Sherman, 1968).

Table 2. Come N See Teletherapy Sessions and Therapy Outcomes Achieved

Teletherapy sessions – $n(\%)^a$	
Conducted as scheduled	79 (80%)
Cancelled due to child failure to attend	16 (16%)
Cancelled due to persistent difficulties with technology	4 (4%)
Length of session (mins) ^b – mean (SD)	29.02 (4.91)
Number of teletherapy sessions attended per child ^b – mean (range)	9 (7-11)
Problems with technology reported – $n(\%)^c$	
Nil	22(27%)
Poor connection	24(29%)
Disconnection	4(5%)
Webcam	10(12%)
Headphones	1(1%)
Noise	3(4%)
Other	10(12%)
Missing data	9(11%)
Adult who attended session with child ^{c, d}	
Teacher's aide	36(43%)
Teacher	14(17%)
Parent	35(42%)
None	1(1%)
Goal Attainment Scaling (GAS)^e	
Established therapy goals – n [mean (range)]	16 [2.3 (range 1-5)]
Goals achieved to at least an expected level (i.e., GAS score of 0, +1 or +2) – n (%)	11 (69%)
Children achieving at least one therapy goal to expected level – n	6
Children achieving all therapy goals to expected level – n	4
GAS T score ^f – mean \pm SD (range)	57.70 \pm 18.93 (30 - 74.81)
Children attaining GAS T score > 50 – n	5

^a Based on $n = 99$ scheduled teletherapy sessions

^b Based on $n = 79$ teletherapy sessions conducted as scheduled

^c Based on data from $n = 83$ teletherapy sessions, including 4 sessions that were cancelled or cut short due to persistent difficulties

^d Percentages total >100% as 2 sessions had both a parent and teacher/teacher's aide present.

^e Based on data from $n = 7$ participating children for whom therapy goals were established and for whom final review assessment data was available

^f A T-score of 50 indicates that goals are, on average, achieved (Lannin, 2003)

DATA COLLECTION

Interviews were conducted in-person at the child's school ($n = 14$) or via telephone ($n = 2$) by the second author who was not involved in program delivery and who had no previous contact with the parents, schools or treating speech pathologist in the current study. Interviews were recorded using a digital voice recorder. Interviews were conversational in style, with broad, open-ended questions used to explore participants' perspectives of the CNS teletherapy program. A semi-structured question guide was used to ensure a range of issues related to teletherapy were discussed, including (a) their experiences with CNS, (b) their perceptions of the benefits and disadvantages of using technology in the delivery of therapy services, (c) teletherapy implementation processes, (d) barriers to, and enablers of, teletherapy, and (e) their opinions as to whether children's communication skills improved over the course of CNS. This question guide was not used prescriptively so as to ensure that interviews were flexible and responsive to the key issues relevant to and identified by each participant.

DATA ANALYSIS

Interviews were transcribed verbatim and a qualitative, thematic analysis was used to identify key topics and concepts related to participants' experiences with, and perceptions of CNS and teletherapy. Transcripts were read and re-read, and initial codes generated using an inductive approach to identify data relevant to the research question. Constant comparison within and across participants' interview transcripts allowed the identification of common and contrasting perspectives, and facilitated the synthesis of concepts identified during initial coding into broader themes. Transcripts were analysed separately by two authors with discrepancies resolved by consensus.

RESULTS

There was considerable agreement in experiences with, and perceptions of, CNS and teletherapy as reported by parents, principals, and therapy facilitators, therefore results for the stakeholder groups will be presented together. Stakeholders concurred in their belief that the CNS program was a highly acceptable service delivery model, and all reported improvements to children's communication skills. Parents who attended their child's teletherapy sessions reported they had also gained skills in supporting their child's communication. In individual interviews, stakeholders described factors that promoted or threatened the acceptability of the program. Themes were categorized

according to whether they related to (a) the use of technology; (b) the school-based nature of the program; or (c) the combination of technology with the school-based program features. Finally, stakeholders identified potential strategies for enhancing the acceptability and feasibility of the CNS program.

THE USE OF TECHNOLOGY

ACCESS

The central reason for the acceptability of CNS to stakeholders was the ability to provide a service that children would otherwise not be able to access. This was primarily attributed to the use of technology in the delivery of services. The improved access provided by CNS meant that even though stakeholders generally believed that in-person services were ideal, they considered teletherapy an acceptable alternative. One school principal described how CNS improved access:

There are parents too who, one, they can't afford to take their kids to a speechie; two, they don't have access to a speechie; three, they've got to wait a long time. We're providing that service here for them....In a perfect world you'd have somebody come in here and sit with the kids and have it here, but that's not going to happen.

Parents appreciated that teletherapy enabled children to access speech pathology without requiring extensive travel, saving costs related to time and fuel. Stakeholders believed that eliminating the need for extensive travel increased the consistency with which a service could be provided. One principal commented, "Doing it online, it's probably more ongoing, more regular. Whereas if they had to travel they definitely wouldn't go once a fortnight or once a week, something like that. It's too far to travel."

CONFIDENCE AND SATISFACTION WITH TECHNOLOGY

Despite the frequency with which minor problems with technology were reported (61/83 sessions, see Table 2), stakeholders were generally satisfied with the technology, and expressed the belief that occasional problems with technology were to be expected. Therapy facilitators indicated that it often took several weeks to troubleshoot technology issues and to set up a reliable system; however they said that their confidence with technology increased over the duration of CNS.

CHILDREN'S RESPONSE TO TECHNOLOGY

Stakeholders believed that teletherapy was a good fit for children as it built on their natural interest in technology. One therapy facilitator remarked,

Kids are like a sponge when it comes to technology anyway. They're just drawn to it. So they love the headphones, they love the little microphone thing, they love the interaction with the mouse and those sort of games.

In fact, stakeholders valued the opportunity provided by CNS for children to have the unique experience of communicating with someone at a distance over the Internet, and they believed that this promoted the program's acceptability to children. One parent said, "[My daughter]'s never had the experience of talking over the Internet before so it was a new experience....It's great for her because it's opening up her eyes as well as to what actually goes on in cities."

Stakeholders did not express concerns that technology interfered with the development of rapport between speech pathologists and children, including those who were shy or who were initially reluctant. Rather, stakeholders repeatedly reported the establishment of strong therapeutic relationships through attention to children's personal interests and use of interactional online activities. Stakeholders suggested that technology was a motivating tool that facilitated, rather than hindered, children's engagement in therapy. One parent, who described her daughter as shy and reserved, observed, "[My daughter] loves her. [She] always talks about [the speech pathologist] at home and '[the speech pathologist] said this' and '[She]'s proud of me.' The interaction with my [daughter] is great."

PRIVACY

Parents and school staff alike believed that the privacy afforded by the use of technology for service delivery enhanced its acceptability to children. One therapy facilitator said, "As far as their other classmates know, they're just coming up to do some work on the computer." Stakeholders believed that the enhanced confidentiality offered by teletherapy was also important to families, particularly as maintaining privacy while accessing in-person speech pathology services within a small rural community was reported to be a challenge. One therapy facilitator commented,

[Rural communities] can be tight the wrong way too. "Oh your child's getting, oh," and instantly they've got something wrong with them. There's that fear of perception as well as that tight-knit support. So a small community can work against you as much as it works for you...I do think it is a benefit...no-one except me and the parents and the kids in the town know.

Interestingly, stakeholders did not describe any threats to the acceptability of the program that related exclusively to the use of technology. Instead, threats related specifically to the school-based nature of the program, or were related to the combination of using technology within a school-based program.

THE SCHOOL-BASED NATURE OF THE PROGRAM

The school-based nature of the program was perceived to make a specific contribution to the acceptability of the program to stakeholders. Stakeholders appreciated that CNS utilized existing infrastructure within a school setting, providing services within a comfortable and familiar learning environment while minimizing time children were withdrawn from class.

ACCESS

Stakeholders believed that locating the program within the school environment also contributed to increased access to speech pathology services, overcoming distance, time and cost barriers for families. Working parents, for instance, noted that their child was able to receive therapy without them having to take time off work to drive to the speech pathology clinic. One parent commented that she was able to arrange her work so as to attend her child's teletherapy sessions during her lunch break. Children whose parents worked on remote properties were able to receive speech pathology support even though their parents were unable to attend with them. When asked about other options for accessing speech pathology, one mother remarked, "[Travelling for services] would cost you money as well as time. It's hard work mate....the time thing is the biggest thing. The fact that he's been able to do this [at school] is just phenomenal."

Aside from addressing physical access barriers, stakeholders said that CNS also overcame access barriers related to parental knowledge of and attitudes towards communication and speech pathology. Principals and therapy facilitators noted that some families within the school community lacked an understanding about the implications of communication disorders, while others faced complex family issues, and as a result did not have the capacity, nor see the need, to actively seek access to speech pathology. However, principals and therapy facilitators believed that knowledge and attitude barriers were successfully addressed by making speech pathology services readily available within the school environment. One therapy facilitator who had worked for years as a teacher said,

We can ask parents to take their children to speech therapists if there is one available, which we haven't had for three years. But parents of these children often do not do that, so even though some of the parents in this program really didn't show a lot of support, but the children are getting the support that they need, through Royal Far West and through our school. And I guess that's probably the main thing because if we were just to rely on the parents to take their children to speech therapy, it just doesn't happen.

Thus, stakeholders expressed the belief that the CNS program promoted equity of access to speech pathology services within rural communities, which was facilitated by the location of the program within the school environment.

SCHEDULING OF SESSIONS

Threats to the acceptability of the CNS program described by stakeholders were issues related to the scheduling of sessions and withdrawal of children from class, both which related exclusively to the implementation of the program within the school environment. Some principals indicated that they prioritized classroom core literacy and numeracy lessons, so CNS sessions needed to be scheduled outside of these times. Stakeholders also reported that the timing of sessions, whether they coincided with lunch breaks, or involved withdrawal from class during children's favorite lessons, influenced some children's willingness to attend. Similarly, stakeholders indicated that sensitivity to how children were withdrawn from class was required in order to encourage attendance. A therapy facilitator commented:

One of the children didn't like being pulled out of class. He felt that he was different, whereas one of the other kids thought they were special, "I get to do this." And I think it was a little bit to do with the structure and the timing of that because he really loved writing but he got pulled out in a writing session....There's got to be some flexibility in those time slots.

WORKING IN PARTNERSHIPS

Principals, therapy facilitators and parents all described CNS as a partnership, and believed that best outcomes were achieved through strong links between schools, families and clinicians. Thus, having the program located physically within the school was seen as a benefit of the program. Parents reported their preference for the CNS program to be located within schools rather than the family home. One parent remarked, "It's probably my preference to keep them in the school for the simple fact that it's that environment."

However, barriers were described that made the realization of such partnerships a challenge. For instance, although stakeholders believed in the value of teacher collaboration in promoting children's communication development, time constraints, teaching responsibilities and the cost of teacher release were regularly cited as barriers to direct teacher involvement in the program. Similarly, principals and therapy facilitators described difficulties working in partnership with parents who did not attend sessions, particularly those who, due to a lack of understanding about communication and speech pathology, were not actively involved. One parent who did not regularly attend her son's teletherapy sessions noted, "I don't know what it is that I need to [do]. I don't know what is terribly wrong with my child. I don't know what it is that is lacking. My line of thought is what is the skill?"

USING TECHNOLOGY WITH A SCHOOL BASED PROGRAM

Stakeholders described ways in which the combination of the use of technology within the school environment further promoted the acceptability of the program. Yet, their descriptions suggested that this combination also increased the complexity of the challenges faced.

FINDING AN APPROPRIATE SPACE

Although stakeholders believed there were key benefits in the location of teletherapy services within schools, they also reported threats to the acceptability of CNS which related to practical aspects of the location. Finding a quiet and private space that met minimal technology requirements was often made difficult due to lack of available space within small, rural schools. Therapy facilitators often reported that during early stages of the program, their role involved locating a more appropriate space for teletherapy sessions. In one school, a quiet, private space was not able to be identified, which had a major effect on their perceptions of the program's feasibility. The principal commented:

Most people probably have a lovely little counsellor's room where they could go and you could set it up but we just don't have that here. We don't even have a principal's office. That office there is the hub, parents come in, visitors come in, the phone rings constantly, so it probably wasn't that good of an area to do it in... unfortunately that's all we had.

WORKING IN PARTNERSHIP AT A DISTANCE

The challenges of working in partnerships within the context of a school-based program utilizing technology appeared to be further exacerbated by the speech

pathologist's lack of physical presence within the school. As a result, much of the success of the program was dependent on the pivotal role of therapy facilitators in facilitating and maintaining good working partnerships between families, teachers, and the speech pathologist.

However, therapy facilitators' ability and readiness to adopt this role varied considerably. In the current study, therapy facilitators included volunteer parent helpers, teachers' aides, Learning and Support teachers, and Aboriginal Education officers. Therefore, there was much variation in their experience in working with children with communication difficulties and in their roles within the school. There was also little consistency in their expectations of their role in CNS. Therapy facilitators who worked in a paid capacity within schools frequently described their role as facilitating communication between the classroom teachers, families and the clinician, and communicated about children's therapy goals and progress to classroom teachers. They often saw it as part of their role to complete follow up practice of speech and language activities with children outside of sessions, incorporating practice incidentally or during scheduled appointments during the school day. Those who worked in learning support and who understood the relationship between children's speech pathology goals and the wider school curriculum were able to make adjustments to the curriculum accordingly and pass relevant information onto teaching staff. These therapy facilitators often commented that observing and participating in sessions had helped them to develop knowledge and skills that could be employed with other students. An ideal situation was described by a therapy facilitator who had also had extensive experience in learning support. She recounted,

When I said to his teacher he's got significant language difficulties, well his report card last year didn't say that, well yes, and then his teacher came and observed a lesson and then there's that carry over now into the classroom. So she may, instead of giving him a set of three instructions in a row, she might be limiting them to just one instruction at a time.

However, not all therapy facilitators had the experience or capacity to make these connections to the school curriculum. As a result, they did not communicate insights about children's progress to classroom teachers. Others saw their role as merely setting up technology and providing a space for teletherapy. Some did not have a role within the school that included the capacity to work individually with children, so were not able to do follow up practice with children; others described attempts to complete follow up activities with children, but were not adequately supported to do so by the school.

STRATEGIES FOR ENHANCING ACCEPTABILITY

Stakeholders provided suggestions on how the acceptability of CNS may be promoted, while maintaining the benefits of combining the use of technology within the school environment to provide speech pathology services. Principals believed that adopting a capacity building approach with teachers and other relevant school staff could better support the development of strong partnerships with teachers and facilitate their involvement, albeit indirectly, in CNS. They suggested that teachers needed to not only be kept informed about children's intervention goals and progress, but also required clear explanation of how therapy goals related to the curriculum. They believed that teachers also needed to be provided with strategies to support children's communication that could be implemented with the whole class. One principal suggested that learning support staff could be provided with professional learning opportunities via teleconferencing so that they in turn could support teachers to address the individual learning needs of children with communication difficulties in the classroom:

If the learning and support teacher can adjust the curriculum and have that training through [organization name removed], even if it's an overview of speech pathology that gives them a little bit better understanding of how to work with kids with speech difficulties, then they can then use their up-skills to adjust the curriculum and then pass that onto the programs for the teaching staff.

Stakeholders agreed that it was important to support family participation from the outset of the program if possible, which may facilitate their longer term involvement. One principal stated:

Having them come in the initial assessment phase and actually have the parents meet the speech pathologists and the clinicians and actually express their concerns and have the clinicians explain to the parents what the issues are and what they're going to do to fix it and things like that, I think just keep them informed as much as possible....And then if the parents are involved in that initial phase too they're probably more likely to then support it more at home.

Stakeholders' comments highlighted the importance of clearly defining and negotiating the roles of parents, teachers, therapy facilitators and clinicians in the partnership. Accounts of positive experiences of working in partnerships were underscored by clear lines of communication within the partnership. One mother recalled, "[The principal]'s been brilliant. I'm able to ring him and say, 'Look, [the speech pathologist] has suggested we try this.' 'Great. Yeah, let's do it.' Fantastic, fantastic....The communication's been great." In contrast, another mother commented, "His teacher has no idea what's been going on

here, so there is a big missing link of communication happening.”

DISCUSSION

Consistent with other research (Crutchley & Campbell, 2010; Grogan-Johnson et al., 2010), stakeholders in the current study reported high levels of satisfaction with teletherapy. Research has also suggested that disparities exist between clinicians' and clients' perspectives on teletherapy, with therapists often displaying more negative attitudes than stakeholders (Dunkley, Pattie, Wilson, & McAllister, 2010) which may impact on clinicians' willingness to adopt teletherapy (Tucker, 2012). Stakeholders in our study indicated that the benefits of teletherapy delivered within the school setting far outweighed any perceived disadvantages. The combination of use of technology within the school environment not only addressed barriers related to distance and waiting lists, but also helped to address barriers related to existing community knowledge of and attitudes towards communication and speech pathology.

Despite the promise of improved access via teletherapy, stakeholders indicated that certain threats to acceptability required further attention. Specifically, the challenges of working in partnerships within the school environment appeared to be exacerbated by the clinician's lack of physical presence in the school. Families not engaged with schools were still unlikely to access therapy for their child or be engaged in the therapy process as therapy partners. Principals and therapy facilitators described challenges to engaging families who faced complex issues, which were at times related to broader socioeconomic factors. These findings underscore the importance of adopting a place-based approach to service delivery in rural areas (Dew et al., 2013), acknowledging that teletherapy may need to be embedded within a broader strategy that builds capacity within local communities.

In spite of the frequent reports of difficulties with technology in the current study, teletherapy was still considered an acceptable service delivery model to stakeholders. Indeed, stakeholders did not report any threats to acceptability that specifically related to the use of technology. Lack of reliable technology has been cited as a critical barrier to telepractice implementation by speech pathologists (Tucker, 2012), and clinicians' beliefs about the difficulties inherent in using technology for service provision may outweigh their perceptions of the potential gains (Dunkley et al., 2010). However, findings in the current study suggest that service users may not consider technology failures an insurmountable barrier. Attention to service users' perspectives of teletherapy may help to influence clinicians' views and willingness to trial teletherapy. It also

may influence clinicians to weigh up the drawbacks of occasional difficulties with technology against the potential benefits to service users of accessing a speech pathology service via technology, particularly when there are no practical service alternatives.

Similarly, risks to ensuring client privacy and confidentiality in teletherapy have been described (Wade, Elliott, & Hiller, 2012) and potentially may further dissuade clinicians from adopting teletherapy. However, in the current study, stakeholders did not report any concerns about online privacy. Stakeholders appeared to be more concerned about protecting their privacy within local towns, and accessing services without the knowledge of other members of the community. Knowledge of the potential for teletherapy to be superior to in-person services in promoting this aspect of client confidentiality, while not discounting other risks that may exist, may further assist clinicians and service providers to adopt more balanced insights into the potential benefits of teletherapy, consistent with stakeholders' perspectives.

Stakeholders were consistently supportive of teletherapy approaches to service provision, despite the fact that most believed that in-person speech pathology was preferable and potentially more effective than comparable interventions delivered via teletherapy. In fact, there is little evidence for the superiority of in-person versus teletherapy delivery of intervention (Mashima & Doarn, 2008), although there is evidence that the outcomes from teletherapy may be at least equal to those gained from in-person services (Gabel et al., 2013; Grogan-Johnson et al., 2010; Grogan-Johnson et al., 2013). The fact that stakeholders were supportive of, and willing to accept a model of service delivery that they considered less effective, further speaks to the critical service delivery gaps existing for rural and remote communities. In contrast, current telepractice regulations require that services delivered via technology must be equivalent in quality to services delivered in-person (American Speech-Language-Hearing Association, n.d.). Further research is required to compare client outcomes achieved from in-person interventions with those delivered via teletherapy to ensure that rural communities receive equitable access to services with their metropolitan counterparts.

Finally, stakeholders suggested that implementation of teletherapy within rural school settings must incorporate processes that support the development of partnerships at a distance, including attention to lines of communication. Service providers need to ensure that sufficient time and preparation is allocated to schools and clinicians to establish positive working relationships, and negotiate roles and responsibilities between children, parents, principals, therapy facilitators, and teachers. The current findings suggest that therapy facilitators in particular play a critical role in promoting the feasibility of teletherapy programs within schools (Tucker, 2012). However, given the range of individuals who may act within that role, service providers

may need to respond flexibly in recognition of their heterogeneous training and support needs.

FUTURE RESEARCH AND LIMITATIONS

The current study focused on a small pilot study of teletherapy delivered by one speech pathologist in a small geographical region within New South Wales, Australia, therefore it is not known how well findings generalize to other teletherapy programs, speech pathologists, client groups, and geographical areas.

CONCLUSIONS

The promising findings of the current study suggest that a comprehensive, generalist speech pathology program delivered via teletherapy to a heterogeneous school-aged client population was both feasible and acceptable to school principals, therapy facilitators and parents living in rural communities. These findings provide new insights into the potential for the combination of the innovative use of technology within the school environment to assist in addressing inequities in speech pathology service provision for children living in rural and remote communities. However, this combination of program features also appears to increase the complexities associated with the program, which need to be effectively addressed in order to promote program acceptability and feasibility. In addition, this study sheds new information on the feasibility of teletherapy for speech pathology beyond discrete treatment programs for well-defined populations.

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