

Phonak

Field Study News

Could teleaudiology be the answer for teens?

A project conducted in the United Kingdom explored the potential for using teleaudiology with teenagers to increase their engagement. For Phonak, this service is called Remote Support and is accessible in the myPhonak app. Twenty participants aged 11 to 19 years old with a bilateral mild to severe hearing loss took part. These participants all had frequently or repeatedly missed audiology appointments at a large pediatric National Health System (NHS) department in England. Participants were offered two remote audiology sessions. Feedback was extremely favorable and both teens and audiologists felt there was potential for remote support to be incorporated into routine service delivery. The findings of the study suggest that remote support is attractive for teens and might increase their engagement in audiological services.

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Introduction

Challenges related to compliance with prescribed or recommended treatments during adolescence have been noted for a wide range of conditions. Issues relating to the immediate benefit of an intervention and the need for control have been identified as significant factors (Taddeo *et al.* 2008). In audiology, it is also recognized that as teenagers begin to develop their identity and grow in independence, they can often become resistant to wearing their hearing technology and may disengage from audiological services. Key themes for this disaffection and non-compliance include: low self-esteem, feeling isolated, and social anxiety about cosmetic appearance (Elkayam and English, 2003).

Telehealth is the use of telecommunications to deliver healthcare outside of traditional facilities to overcome the challenges of distance and barriers to access healthcare (Darkins and Cary, 2000; WHO 2018). Technology is a large part of everyday life for teenagers, indeed during the ages of 14 to 15 years teenagers feel most confident using digital devices (Ofcom, 2014). Teenagers routinely and confidently use technology for learning, social networking and personal communication. Given that the motivation and engagement for using technology is higher for teenagers, accessing services via Telehealth may capitalize on this interest and their need for greater sense of control. As a result, this style of service delivery could motivate disengaged teens and sustain their involvement in audiological care.

A 3-phase project conducted over 46 months in the United Kingdom explored the challenges and benefits of using remote support with teenage hearing aid users. The project was part of a service quality improvement program within the hospital.

Phase 1 of the project, conducted across a number of sites, explored attitudes towards remote support from engaged teen hearing aid users, their parents, Teachers of the Deaf (ToD) and audiologists with an interest in remote support.

Phase 2 used a case study approach carried out at a single large NHS Trust, focused on the potential of remote support as a motivational tool to re-engage teenagers who had stopped attending or often missed clinical audiology appointments.

Phase 3 examined the mid- to longer-term impact of using remote support with 11 teenagers from phase 2.

This paper will largely focus on **Phase 2** of the study.

Methodology

Participants

All participants had at least two unexplained "did not attend" and/or cancelled audiology appointments and their families had not responded to communication attempts made by the hospital. Participants were from a large pediatric NHS department which covered a culturally diverse catchment area in the United Kingdom.

Twenty young people with bilateral mild to severe hearing loss in the age range of 11 to 19 years old participated.

Procedures

Information was gathered via pre-session baseline questionnaires from participants, parents and ToD. The questionnaires explored issues including attitudes towards and familiarity with mobile technology, feelings about hearing loss, attitudes towards and use of amplification, and support/-contact from ToDs. Further information about participants' experiences with amplification and services was gathered from their clinical case notes and reports from service providers.

Participants were offered two remote sessions which were delivered by four audiologists. The audiologists and participants scheduled their remote support appointments via phone, text messaging or email, with the second remote support session typically being scheduled after a month of the first session. The sessions included ongoing care such as dealing with features, fine tuning, checking on changes made to the programs or updates, setting goals for hearing aid usage, giving instructions and checking data logging. Hearing aids were connected to Phonak Target Version 3.3 via iCubes and tablet devices, which were shared amongst the teenagers. Locations for the teens' sessions were left to their discretion, however, stable Wi-Fi internet access was required.

Post-remote support session data was also gathered from feedback forms, transcripts of text and smart message communication. The clinicians and participants also recorded their immediate assessment of the session's performance and efficacy in a short form after each remote session.

Results

Feedback from pre-session baseline questionnaires

Participants had all been fitted with either Phonak Sky, Spice or Nathos hearing aids but had not had their hearing tested or hearing aids acoustically verified prior to their involvement in the project due to their non-attendance at clinic appointments. Hearing aid usage for all participants was variable, as was the educational placement and support

each of them received from their ToD. Participants' homes or schools were reported as being between 2 and 25 miles away from the clinic and estimated journey time ranged from under an hour to two hours.

The data collection of participants' early experiences showed similarities which included:

- Families had inconsistent or complicated experiences with audiology services (including lengthy assessment periods, late or uncertain diagnosis and sometimes uncoordinated multiple professional inputs).
- Students had histories of relocation to different audiology services, schools or countries.
- Signs of disengagement emerged around the age of 9 to 10 years and became more significant as children transitioned to secondary school which coincided with a change or reduction in support from the ToD.
- Frequent breakages and losses of hearing aids, with complaints about devices.

The teenage participants were asked to complete the sentence, "When I wear my hearing aids I feel...". Eleven teenagers responded positively and only four expressed concerns while the remaining five gave neutral answers. Seven teenagers commented that they didn't like their hearing aids but understood that the hearing aids helped them and three students expressed that they really liked their hearing aids. Nine students felt "OK" about their hearing aids and one student reported he received "a little" benefit when using his hearing aids.

Student feedback from remote sessions

The length of remote sessions ranged from 7.5 to 90 minutes with the average length being approximately 40 minutes. One student did not continue with their session following a technical failure involving a frequently interrupted internet connection during the first remote support session. Two students who also experienced technical difficulties persevered reluctantly with the session but did not accept a second session. These students agreed to have their data used in the project. One student requested a third session to follow up on hearing aid adjustments that were made in the previous session. In total thirty-seven sessions were completed and feedback was provided by nineteen out of the twenty students.

Student session feedback was overwhelmingly positive from the study (figure 1). Students reported that they felt relaxed during their sessions and received good care from their audiologist. Both students and audiologists commented that overall communication seemed more relaxed and friendlier than in conventional face-to-face clinic appointments.

Forms were returned by seventeen out of the twenty students with the remaining three students providing verbal feedback. In total twenty-seven forms were returned, some forms included feedback from both sessions.

	Disagree (%)	Neither agree nor disagree (%)	Agree (%)	Strongly agree (%)
I felt comfortable with the equipment used	0	4	43	53
I was able to hear my audiologist clearly	7	18	39	36
There was enough technical support for my appointment with the audiologist	0	7	54	39
My relationship with the audiologist was the same in this session as it is when I am in the clinic with them	0	21	43	36
I could talk easily to my audiologist	0	14	43	43
The session met my needs	0	4	57	39
I received good care during my session	0	11	46	43
My audiologist was able to understand any problems or challenges I had	7	11	29	53
I felt relaxed during the session	7	4	36	53
I would recommend this type of session to other young people	0	7	21	72
I would rather have my audiologist appointment in this way than travel to see my audiologist in the clinic	7	4	7	82
I like the device (tablet) given to me to use in today's session	0	0	71	29
I could easily use the device (tablet) used in today's session	0	0	32	68

Figure 1. Participant responses to each statement from the feedback forms.

Audiologist feedback from remote sessions

Thirty-six feedback forms were returned by the clinicians. The study results show that teens previously disengaged with clinic-based audiology services responded favorably to

remote sessions. Both teen participants and clinicians predominately gave favorable responses regarding the remote sessions. It is also promising that the teenagers accepted the invitation to participate in the study despite a history of non-attended clinic appointments.

The project highlights the need for a balance between remote support and face-to-face clinic appointments. The mid- to longer-term benefits of the study showed increased autonomy, ownership and proactivity of the teenagers during the study period.

Considerations for implementing remote support

Stable and reliable connectivity was felt to be absolutely critical for the teenagers' engagement in remote support. If connectivity was lost mid-appointment and could not be restored, programs that had been changed were lost. But more importantly the teenagers reported feeling 'disillusioned' with the session resulting in reduced outcomes. Another factor which influenced the efficiency of the session was the language proficiency of the teen. This suggests that success of remote support is dependent on a teen's language and literacy skills. It was interesting to note that the length of the sessions correlated to outcomes, with longer interactions yielding more successful outcomes when clinicians matched their communication in terms of vocabulary and structure.

The audiologists reported that there could be challenges in getting the tone of communication correct and did not want some written statements to appear blunt to the teenager. By providing appropriate communication training to the audiologists delivering the sessions these challenges could be addressed effectively.

If remote support were to be used in routine service delivery, teen patients would need to understand the commitment to the session and importance of punctuality. The study showed those teenagers with shorter histories of non-engagement from their audiology service were easier to engage with than those who have gone longer without seeing an audiologist, emphasizing the importance of early intervention.

Audiologists generally felt that overall the relationships with the teens were positively affected and it was possible to establish a good rapport with the student even if they had not met them personally in clinic prior to the remote session. The teen participants demonstrated willingness and ability to initiate contact and be proactive in communication with increased independence. Audiologists felt well-disposed towards the potential for teleaudiology to be successfully incorporated into routine service delivery.

This study identified that the Remote Support feature implemented into Phonak Audéo™ Marvel hearing aids and the myPhonak app could give teens added value and increase their engagement in their hearing healthcare.

References

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Authors and investigators

Principle investigator



Gwen Carr is an Honorary Senior Research Associate at the UCL Ear Institute. With a background in deaf education and pediatric audiology, Gwen was for many years Head of Sensory Services in a metropolitan authority in England, and then spent four years as Director of UK Services and Deputy CEO of the U.K.

National Deaf Children's Society, before joining the England Newborn Hearing Screening Programme as Deputy Director.

Author



Ananya Venkatesan received her BSc (Hons) Audiology degree from the University of Leeds, England and worked as an adult and pediatric audiologist before moving to Switzerland to join Sonova as an Audiology Manager.

Lead audiologist



Keiran Joseph completed a BSc in Audiology at the University of Bristol followed by an MSc in Neurosensory Sciences (Audiology) at the University of Manchester. He is a registered Clinical Scientist and is currently Clinical Lead for Paediatric Audiology at St Thomas' Hospital in London. The paediatric

audiology service at St Thomas' is one of the largest paediatric services in the UK supporting a birth rate of over 26,000 and having over 8000 appointments attended each year. Prior to joining the paediatric team at St Thomas' he has worked across adult, paediatric and vestibular audiology.