



# Accessing Hearing-Health Services for Deaf and Hard-of-Hearing Children During the COVID-19 Pandemic: Parent & Child Perspectives

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## Background

- March 11, 2020: COVID-19 as officially declared a pandemic by WHO <sup>(1)</sup>
- Large demand for remote consults, decreased face-to-face
- Explosion in the uptake of telehealth services occurred in Australia <sup>(2)</sup>
  - Before COVID-19, telehealth <1% of all consultations
  - During the second half of 2020, telehealth formed 28% of all federally-funded consultations in Australia
- Deaf and hard-of-hearing (DHH) children require regular access to specialised healthcare – including medical specialists, allied health and educational services
- Interested in how accessible healthcare services were for these children and their families in the context of COVID-19



## Aims

- To describe hearing-health service use during the early stages of the COVID-19 pandemic for deaf and hard-of-hearing (DHH) children
- To explore the experiences of DHH children and their families during the COVID-19 pandemic
- To highlight the challenges and facilitators of telehealth services for families of DHH children





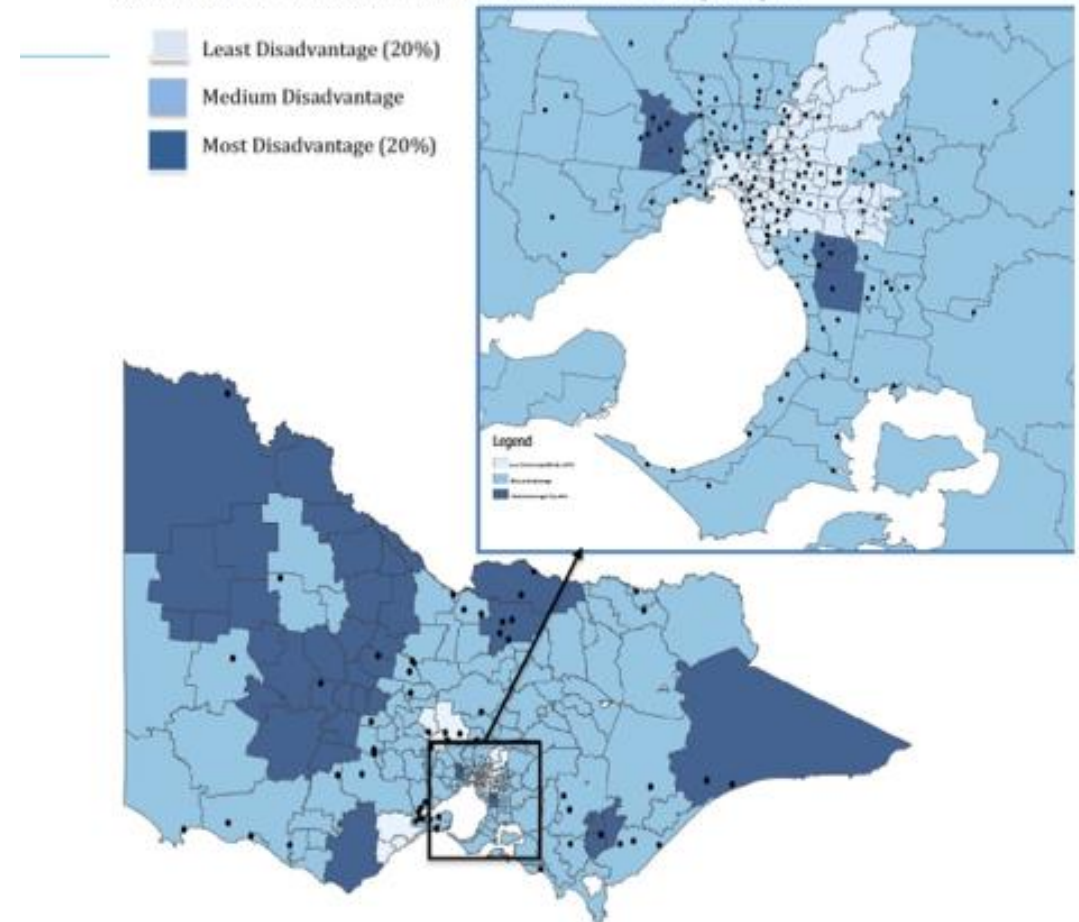


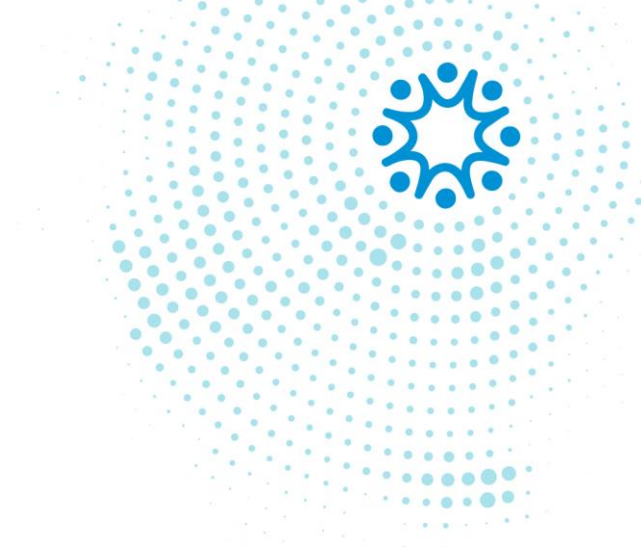
## Methods

### *Participants*

- VicCHILD: the Victorian Childhood Hearing Longitudinal Databank <sup>(3)</sup>
  - Currently more than 1150 families have contributed, with more families joining each month

Figure 2. Map of Victoria, Australia, by area of disadvantage (SEIFA index)\*  
Each dot indicates a suburb that includes 1 or more VicCHILD participant.





## Methods

### *Setting*

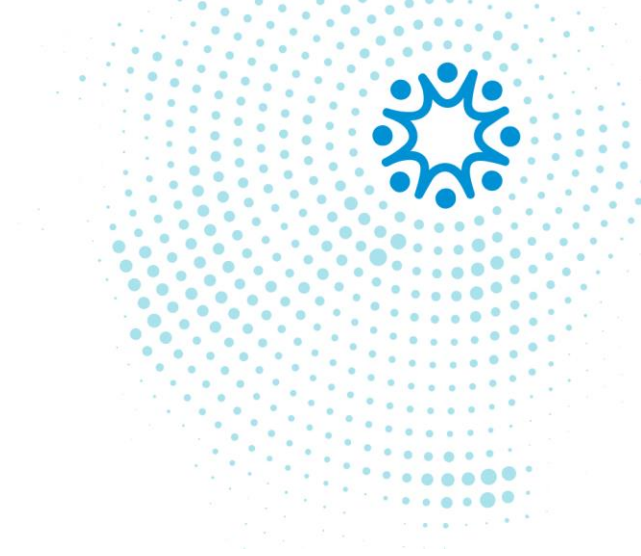
- In May 2020, a survey describing the impact of COVID-19 on access to health services was sent
- Surveys completed over a 4-month period
- Families were also asked to respond to an open-ended question:  
**“describe the impact of COVID-19 on your child’s use and access to services**  
→ Qualitative data was subsequently analysed



## Methods

### *Quantitative Data Analysis*

- Descriptive statistics used to summarise data
  - Type of service accessed
  - Frequency & mode of service access
  - Parent & child ease of access
  - Quality of service provided
- Services grouped into 3 categories:
  - 1) Audiology (diagnostic/rehab audiology, cochlear implant services)
  - 2) Allied health (early intervention, psychology and speech therapy)
  - 3) Medical (GPs, ENT, genetics, other specialists)
- Data was also summarised by child education level – i.e. pre-school vs school-aged children

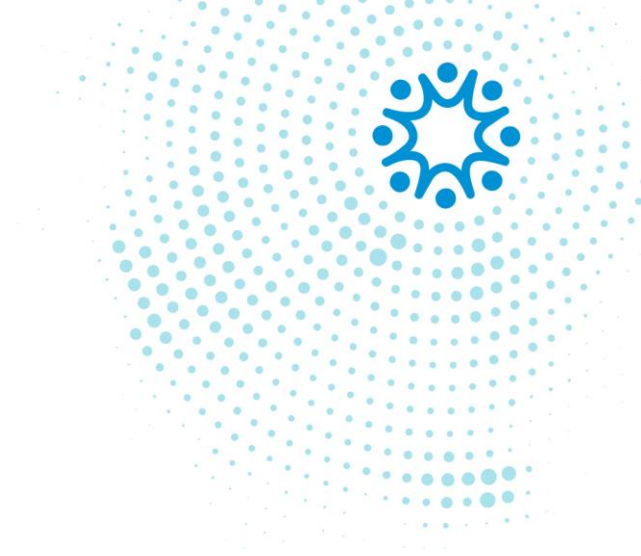


## Methods

### *Qualitative Data Analysis*

- Phenomenological methodology – exploring people’s lived experiences <sup>(4)</sup>
- Inductive/deductive approach for thematic analysis <sup>(5)</sup>
- Data collected from families enrolled in VicCHILD <sup>(3)</sup>
- Data collected and stored in Nvivo software





## Methods

- Codebook developed early on <sup>(6)</sup>
- Deductive codes generated from survey
- Inductive codes emerged organically from raw data
- Inter-coder reliability was tested after initial coding was completed <sup>(6)</sup>

# Results

## Survey Results

- 497 of 806 (61.6 %) families participated in the survey
- 449 of 497 (90.3 %) provided quantitative data
- 336 of 497 (67.6 %) provided qualitative data

		Responders (n = 497)	Non-responders (n = 309)
<b>Demographics: Child</b>			
	Age, years – mean (SD)	6.6 (4.0)	7.0 (3.7)
	Sex: male – n (%)	298 (60.0 %)	161 (52.1 %)
	SEIFA disadvantage index † – mean (SD)	1014.5 (69.6)	1006.0 (68.5)
	Remoteness area: regional – n (%)	96 (19.3 %)	55 (17.8 %)
<b>Hearing loss information</b>			
	Hearing laterality – n (%)		
	Unilateral	143 (28.8 %)	84 (27.2 %)
	Bilateral	320 (64.4 %)	204 (66.0 %)
	Unknown	34 (6.8 %)	21 (6.8 %)
	Hearing loss type – n (%)		
	Sensorineural	339 (68.2 %)	215 (69.6 %)
	Conductive	14 (2.8 %)	11 (3.6 %)
	Mixed	49 (9.9 %)	30 (9.7 %)
	Auditory Neuropathy Spectrum Disorder	39 (7.8 %)	27 (8.7 %)
	Atresia	19 (3.8 %)	4 (1.3 %)
	Unknown	37 (7.4 %)	22 (7.1%)
	Degree of hearing loss – n (%)		
	Mild	117 (23.5 %)	74 (23.9 %)
	Moderate	145 (29.2 %)	83 (26.9 %)
	Severe	84 (16.9 %)	55 (17.8 %)
	Profound	109 (21.9 %)	76 (24.6 %)
	Unknown	42 (8.5 %)	21 (6.8 %)



## Results: Key Findings

- Most families accessed ***allied health*** and ***medical services*** as often and easily as they did prior to the pandemic (with no differences between pre-school and school aged children)
- For ***audiology services***, a slight majority of families (both pre-school and school aged) accessed services less frequently but just as easily compared to prior to the pandemic



## Results: Key Findings

- ~25% (167 of 648) of parents reported difficulties in accessing services via telehealth, with ~50% of parents (347 of 665) reporting difficulties *for their children* in accessing services via telehealth
- Almost half (56%) of parents indicated that telehealth services were of worse quality when compared to in-person services
- Parents of pre-school children were less likely to report that telehealth met their needs at least moderately when compared to parents of school-aged children



## Results: The Challenges & Facilitators of Hearing-Health Service Access & Use

The Challenges	The Facilitators
1) Delay or difficulty in accessing services	1) Continuity of care
2) Anxiety related to COVID-19 exposure	2) Convenience of telehealth
3) Preferences of requirement for face-to-face	3) Increased/ease of access
4) Reduced quality of telehealth sessions	



# Results – The Challenges of Hearing-Health Service Access & Use



1. Delay or difficulty in accessing services

2. Anxiety related to COVID-19 exposure

3. Preference or requirement for face-to-face

4. Reduced quality of telehealth sessions

# Results – The Challenges of Hearing-Health Service Access & Use



1. Delay or difficulty in accessing services

2. Anxiety related to COVID-19 exposure

3. Preference or requirement for face-to-face

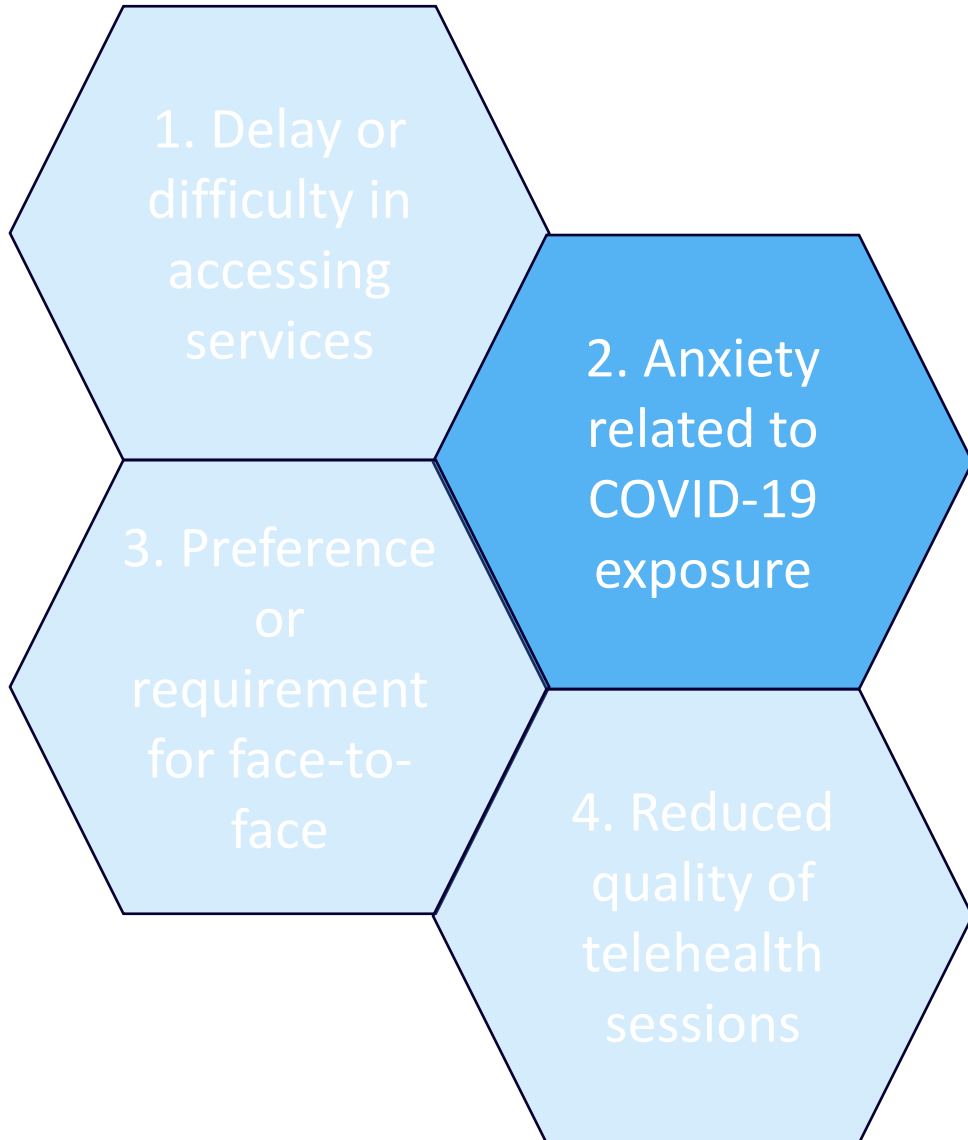
4. Reduced quality of telehealth sessions

## ***1 - Delay or difficulty in accessing services***

*“My child was due for a hearing test but it was postponed due to restrictions. We did have to see the audiologist as new moulds needed to be made. The wait time is longer on receiving the moulds too.”*

*“With home-schooling on it was not possible to get the hearing aid fixed. There are 3 kids in the house, and I would need to take them all out to access the service.”*

# Results – The Challenges of Hearing-Health Service Access & Use

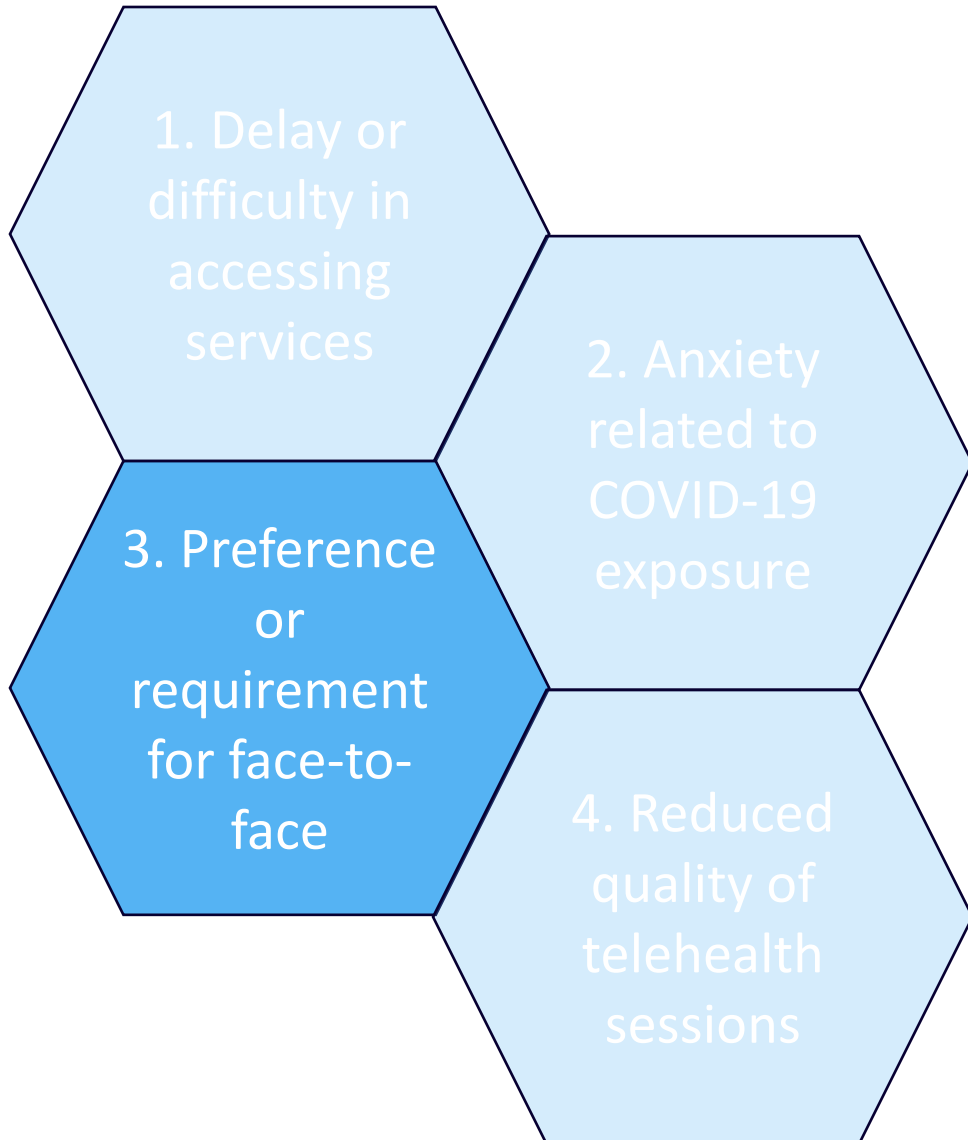


## ***2 - Anxiety related to COVID-19 exposure***

*“She was due to have her general hearing appointment right in the midst of Corona virus, and this was postponed. We had the option to have a face-to-face appointment if there was major concerns, but we opted to wait until it was safer to do so.”*

*“The biggest issue is immunisations and all our hearing related appointments were at the RCH and as my mother is immunodeficient I cannot risk going into hospitals right now. So he hasn't had a follow up with the ENT specialist or been to his audiology appointments.”*

# Results – The Challenges of Hearing-Health Service Access & Use

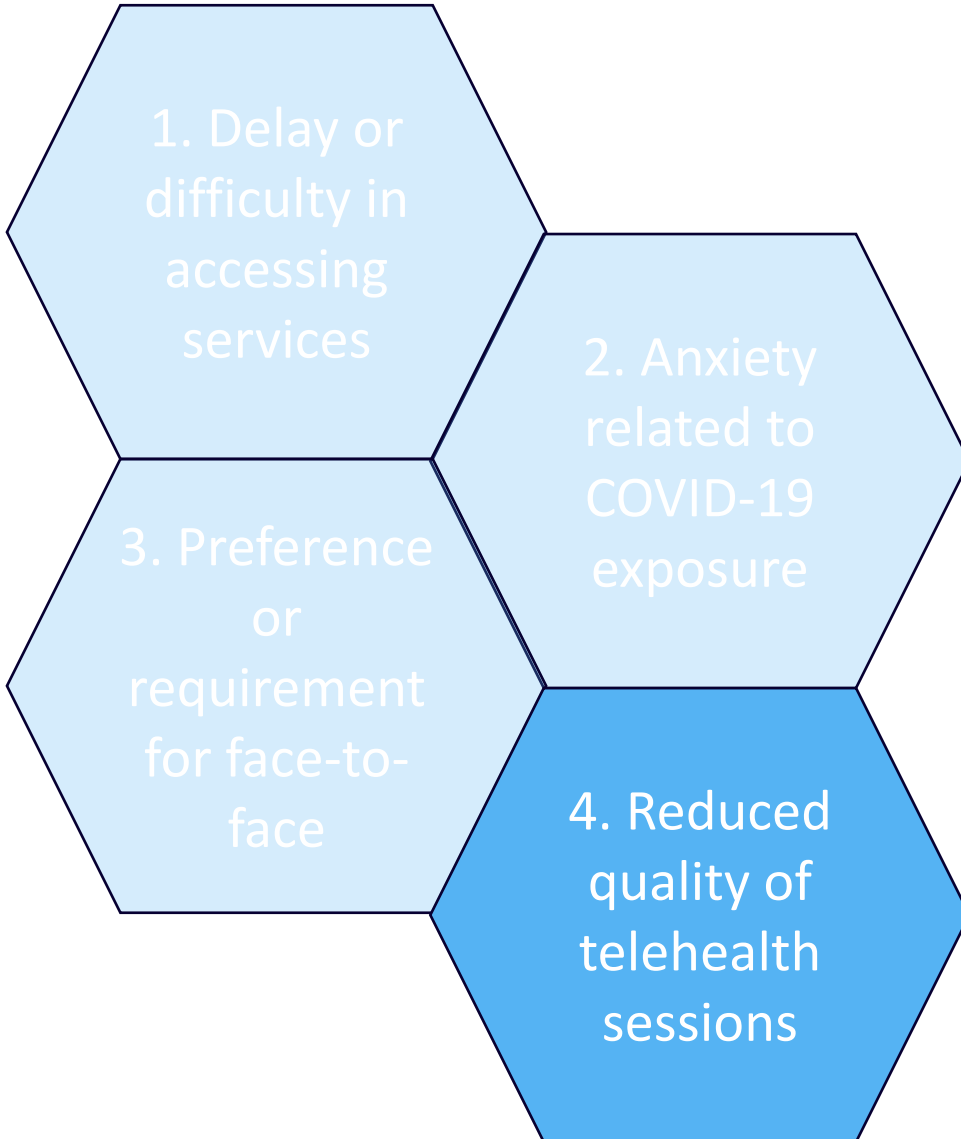


## **3 – Preference or requirement for face-to-face**

*“My child has not been able to access anywhere near the level required. As my child cannot verbally communicate, it is vital he has access to these services in order to continue his education. Without this his ability to communicate basic needs is greatly impaired. Whilst we still have access to a lot of services via telehealth, unfortunately much of what he requires is face-to-face.”*

*“We were able to have face to face meeting with Hearing Australia. Telephone conversations cannot replace face to face hearing check and device fit.”*

# Results – The Challenges of Hearing-Health Service Access & Use



## ***4 - Reduced quality of telehealth sessions***

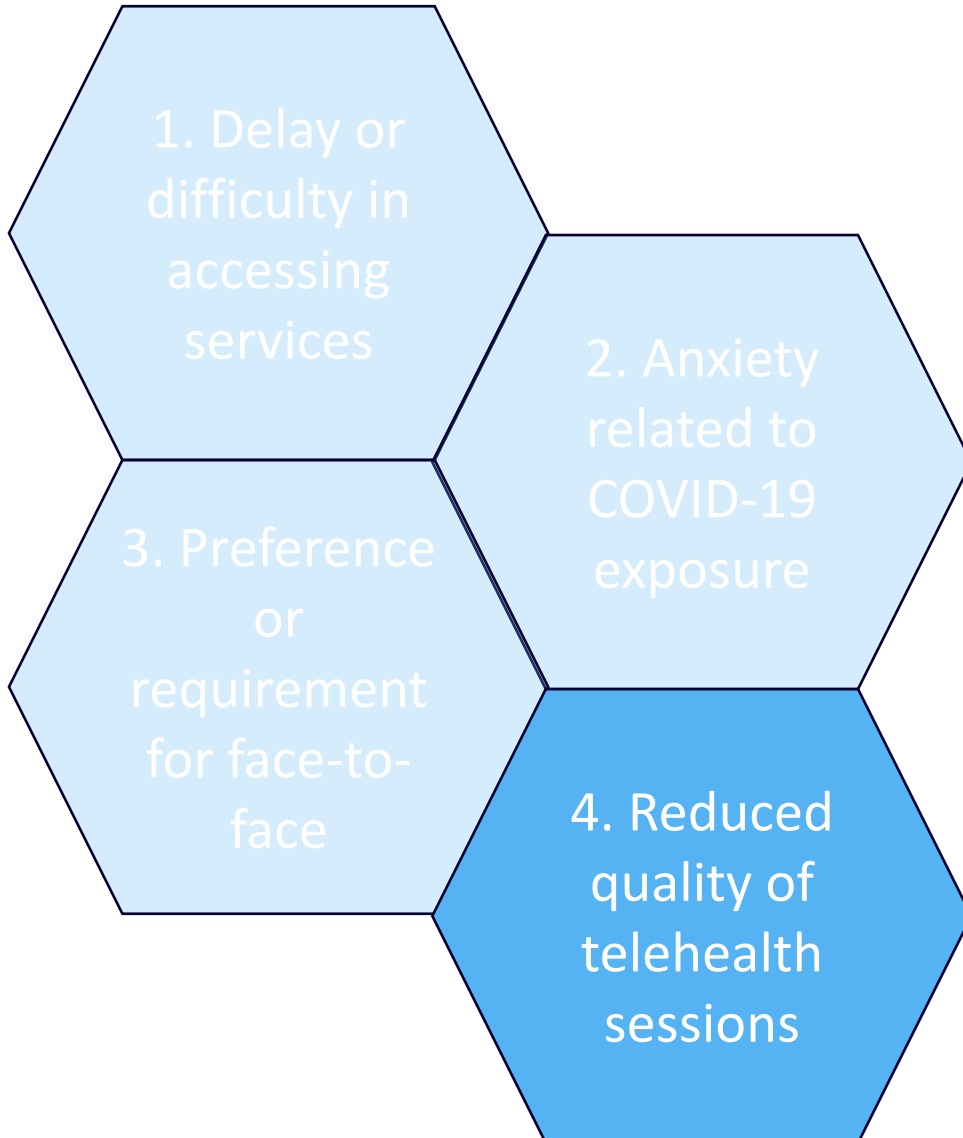
### ***a) Reduced attention span & ability to engage***

*“It is much easier to keep a three-year-old engaged in a face-to-face session. Video is just a face on a screen. She would rather watch Bluey”*

*“Unable to engage in play alongside speech pathologist as phone call service used over COVID-19 period and our son is only two and unable to carry out full conversations”*



# Results – The Challenges of Hearing-Health Service Access & Use



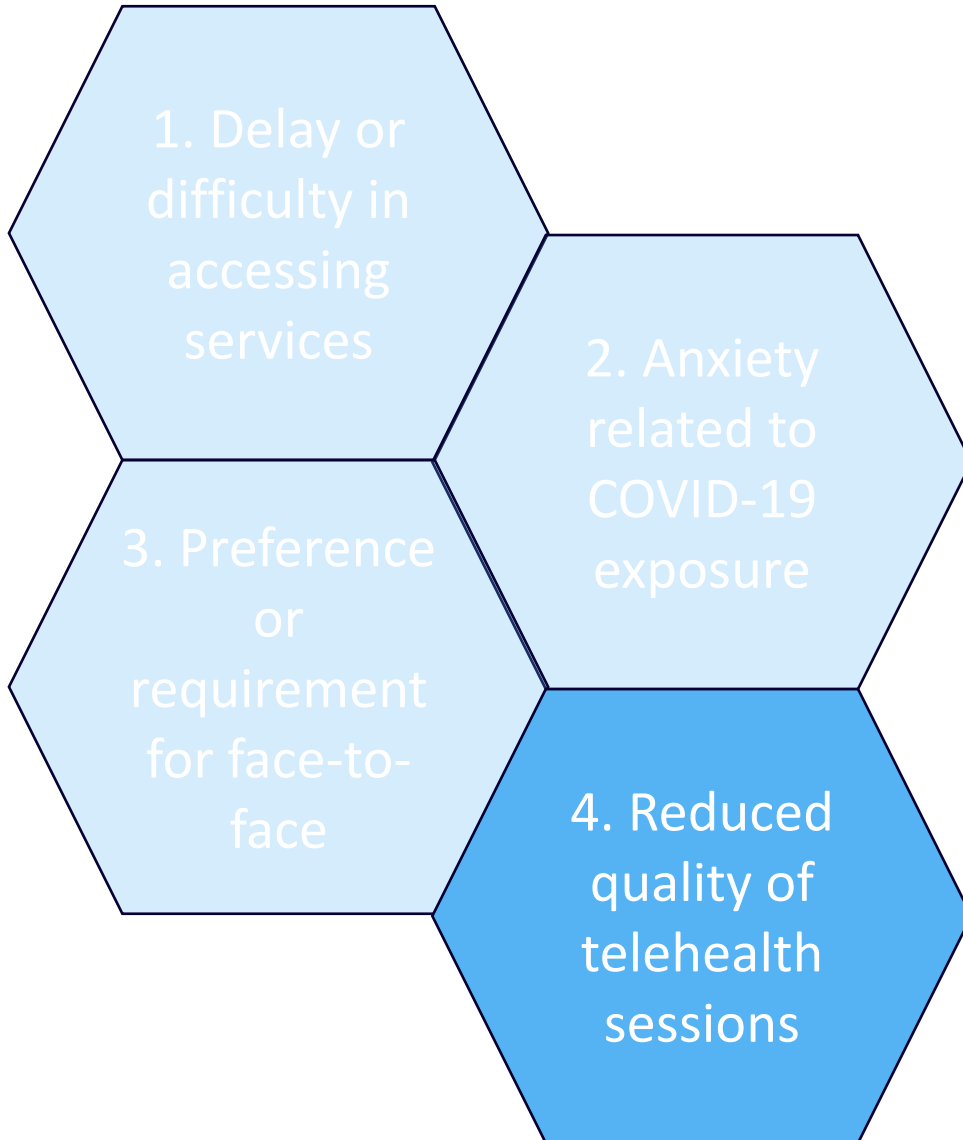
## **4 - Reduced quality of telehealth sessions**

### **b) Increased need for parental input or involvement**

*“Telehealth has been difficult to adapt to especially for my child.... It has also impacted from a therapy setting as more planning and setting up is required at home to adjust to activities.”*

*“He is young and can't sit still. She asked him numerous times to use the mouse to do this and that. I remind her he is only 2yrs old and she keeps asking so maybe she is used to older clients ? He just can't engage with her. She just decided to give us homework because she knows he can't pay attention to sessions. I just don't have time.”*

# Results – The Challenges of Hearing-Health Service Access & Use

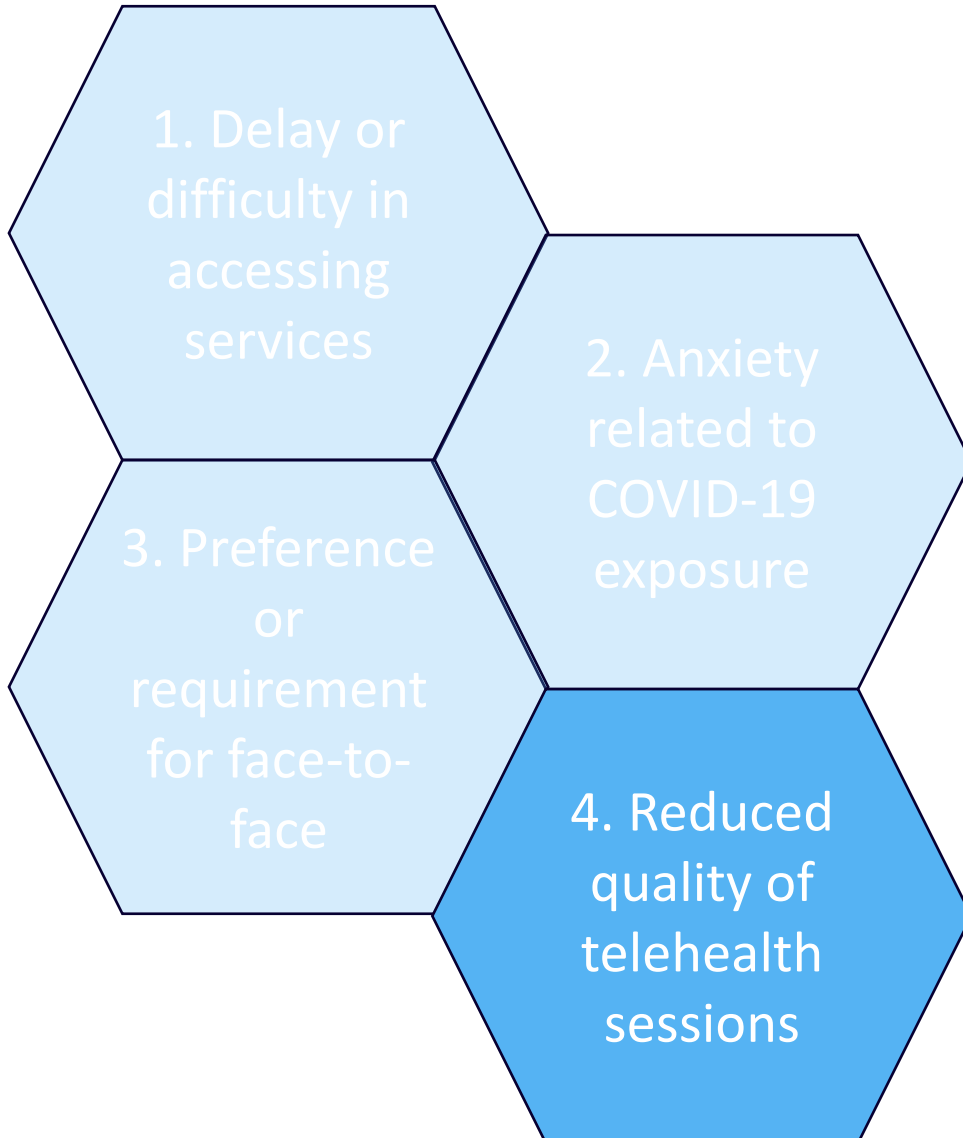


## **4 - Reduced quality of telehealth sessions** **c) Technical issues with telehealth**

*“The quality of online services while convenient is obviously not as good as it would be if in person due to sound quality”*

*“I think speech pathology is better quality face to face as it can be frustrating if the connection drops out and some activities are harder to do on the laptop compared to face to face.”*

# Results – The Challenges of Hearing-Health Service Access & Use



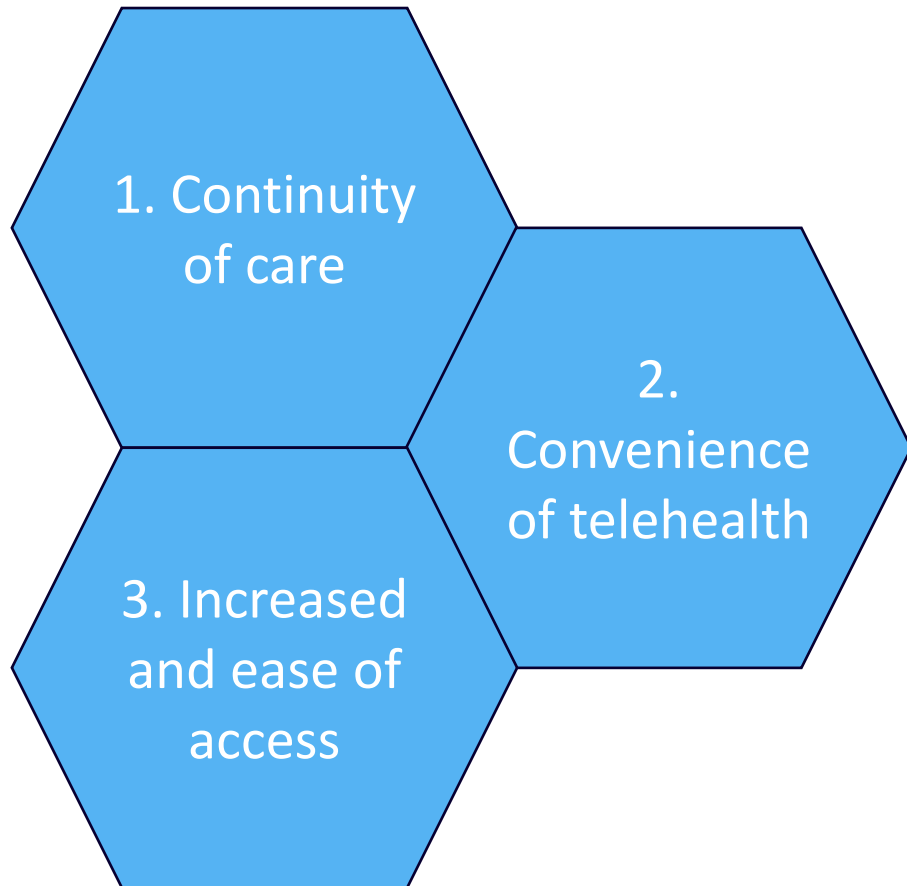
## ***4 - Reduced quality of telehealth sessions*** ***d) Lack of equipment or funding***

*“My child struggles as he does not have an iPad so must access services on my phone - the screen is too small.”*

*“My child has had no support as NDIS have made it very difficult to access an iPad for video conferencing. Hearing Australia have given my child a phonak touchscreen mic for childcare and this has helped her language development.”*

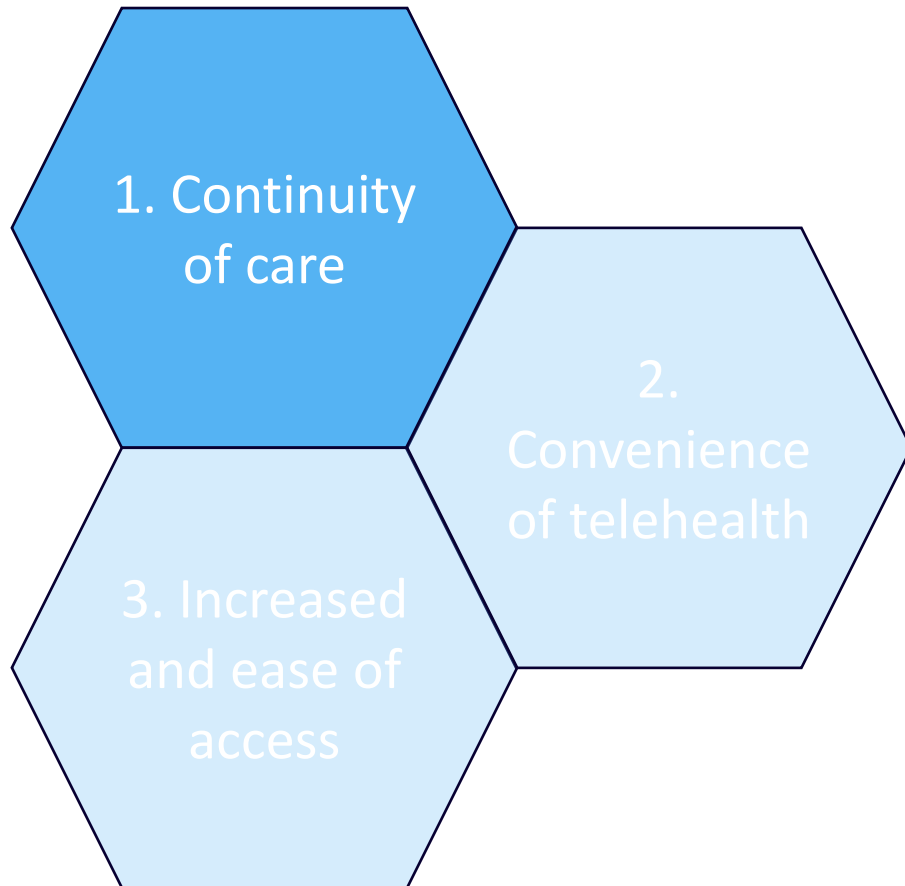


## Results – The Facilitators of Hearing-Health Service Access & Use





# Results – The Facilitators of Hearing-Health Service Access & Use



## 1. Continuity of care

*“Telehealth has been very helpful for the continuation of services, although not as beneficial as face-to-face.”*

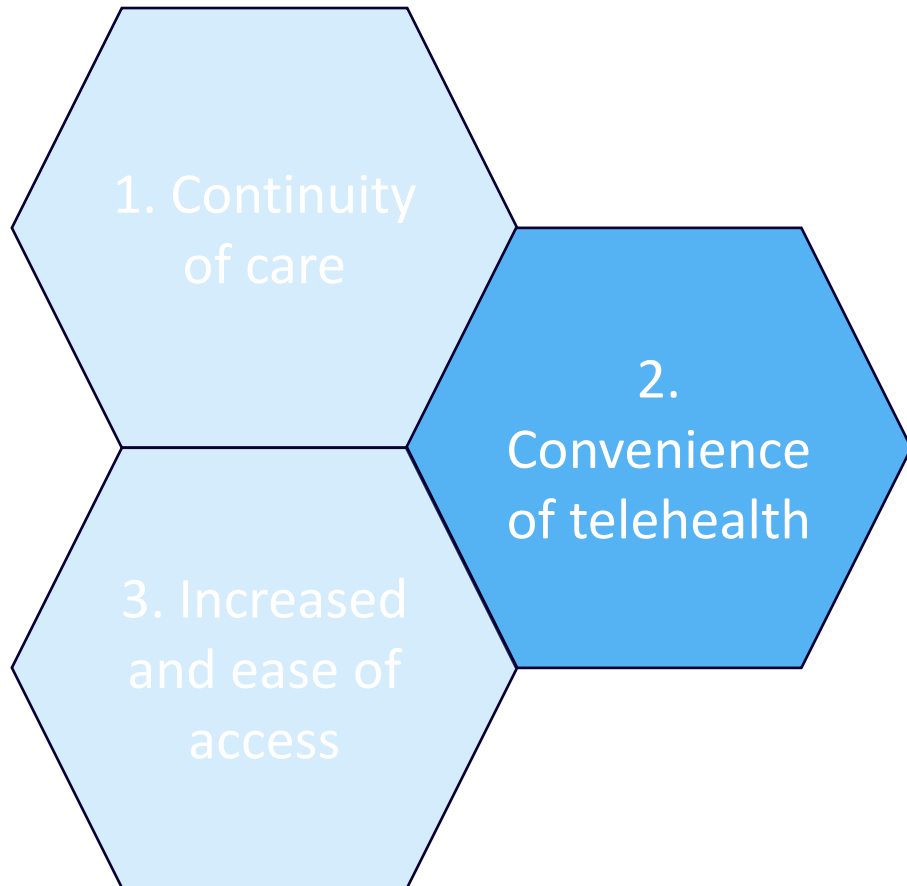
*“As we now live in country VIC we were directed to use the teleservice. This has been provided to us since last year so there has been no change for us.”*

*“Hearing Australia has been excellent and has greatly supported my daughter’s transition to home learning with the correct equipment.”*





# Results – The Facilitators of Hearing-Health Service Access & Use



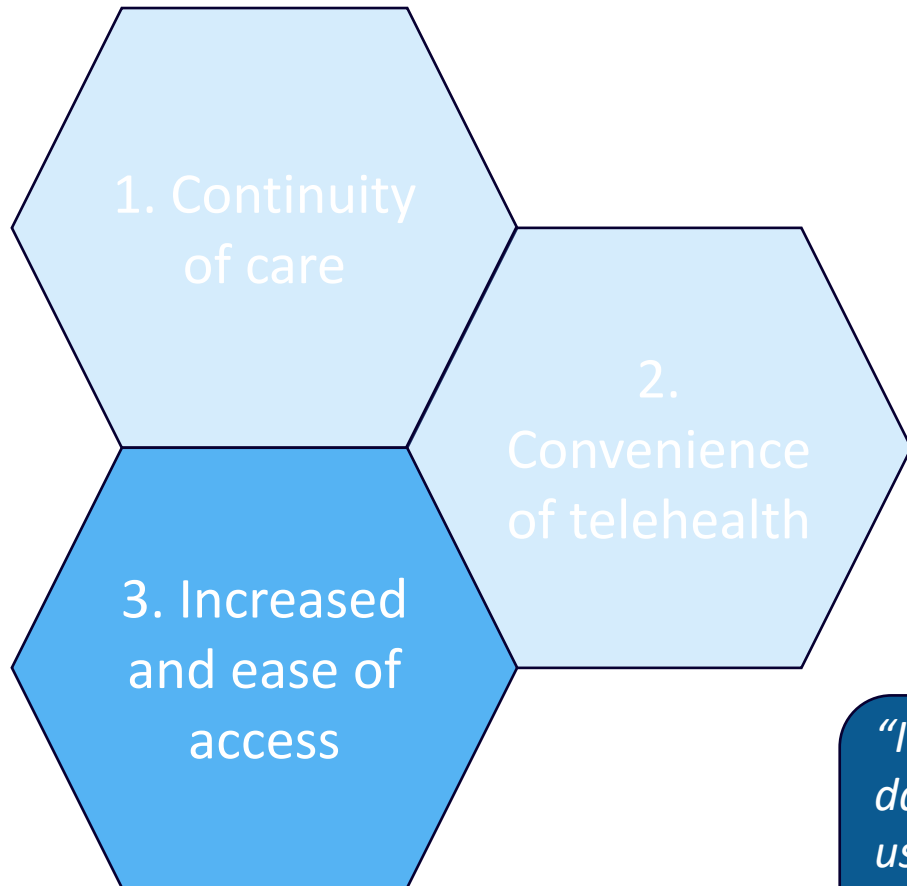
## 2. Convenience of telehealth

*“We increased speech therapy to counter the lack of schooling. The session quality is the same, and as a parent, I love it. I don't have the stress of travel, parking, or the stressed child going from school to her session. At home, we are much more relaxed, and I think it makes the sessions more effective for her.”*

*“In a way, this has been successful in a different way with the doctor being able to see him in his normal environment, which brings out different sets of behaviours.”*



## Results – The Facilitators of Hearing-Health Service Access & Use



### *3. Increased and ease of access*

*“Service provider been able to provide more appointments than usual which has been great for my child.”*

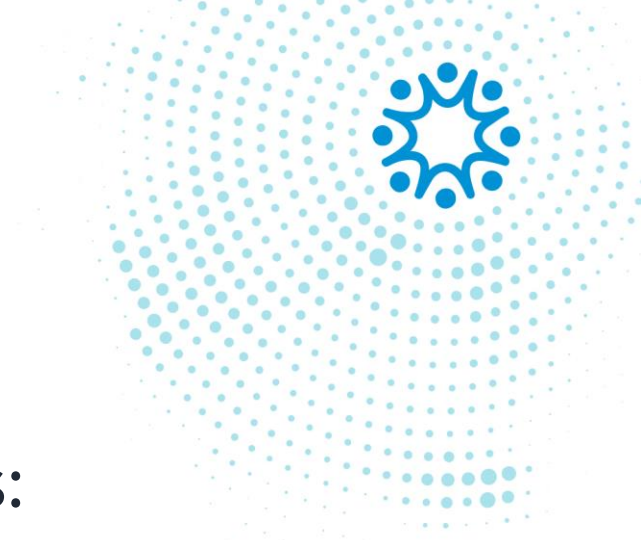
*“He has been depressed before and during the lockdown and has needed multiple telehealth calls with multiple agencies to assist. They have been wonderful.”*

*“In some ways the video services have been better for my daughter. She doesn't have screen time so true novelty of using a screen has been fun for her and she looks forward to the sessions. She is often more engaged in these sessions than face to face.”*



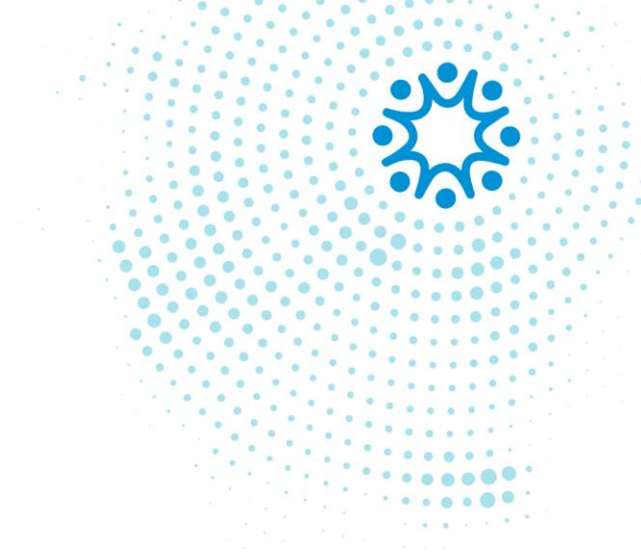
## **Discussion: *Main Difficulties***

- In-person-services were generally preferred, sometimes reported as necessary
  - Consistent for all categories of services, and for both pre-school & school aged children
- Difficulties with telehealth – ↓ quality
  - Shorter attention spans, distractions in home environment, technical issues



## Discussion: *Main Difficulties*

- Difficulties for participants in regional/remote settings:
  - DHH children in these settings are known to have reduced access to healthcare <sup>(7)</sup>
  - Travel costs, lack of specialised services, poor access to information and lower SES
- Longer waiting times during COVID-19
- Limited evidence on what training and education healthcare providers need or successful engagement via telehealth for DHH children <sup>(8)</sup>



## **Discussion: *Main Benefits***

- Allowed safe and remote access to services
- Great satisfaction for some with the quality of care via telehealth
- Incredibly convenient – reduced travel times and costs, especially for families in regional/remote areas





## The Applications of Telehealth in Paediatric Hearing Healthcare

- Infants that failed their newborn hearing screens - successfully evaluated, diagnosed and followed-up remotely <sup>(9)</sup>
- For children with hearing aids already fitted - telehealth provided parents with a platform to device troubleshoot, and ensured timely access to support & services <sup>(10)</sup>
- Physical examinations were entirely feasible and possibly even more efficient over telehealth <sup>(10, 11)</sup>



## Limitations & Strengths

### Limitations

- Potential for results to be skewed towards people who had strong views or worst experiences
- Generalisability of results

### Strengths

- Great sample size (n = 336)
- Double-coding to ensure inter-rater code reliability
- Diverse and rich array of perspectives and experiences that would have otherwise been missed with quantitative research



## Conclusion

- COVID-19 had an impact on children with hearing loss and their families in accessing hearing-related health services
- Whilst telehealth had its benefits and limitations, it is important to acknowledge its role throughout the pandemic - provided families with a safe way to stay connected, especially when no alternatives were available



## Conclusion

- Future research needed to address how telehealth can be used for children with hearing loss
- Improved internet connection speeds, video/sound quality, access to video-conferencing equipment, creating engaging software, increasing training and numbers of service providers that can deliver services and support remotely

# Acknowledgements



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# Thank you

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The Centre for Community Child Health is a department of The Royal Children's Hospital and a research group of the Murdoch Children's Research Institute.



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