Paediatric Hearing–related Quality of Life:

Singapore context

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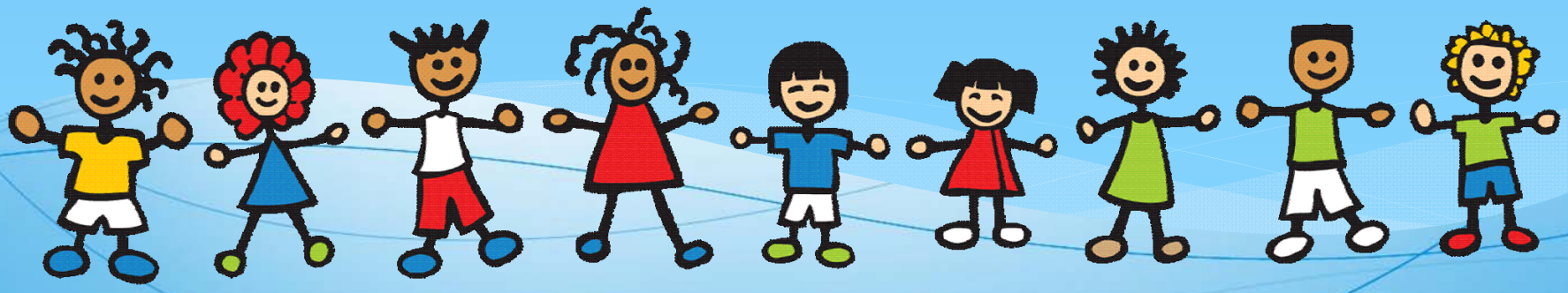
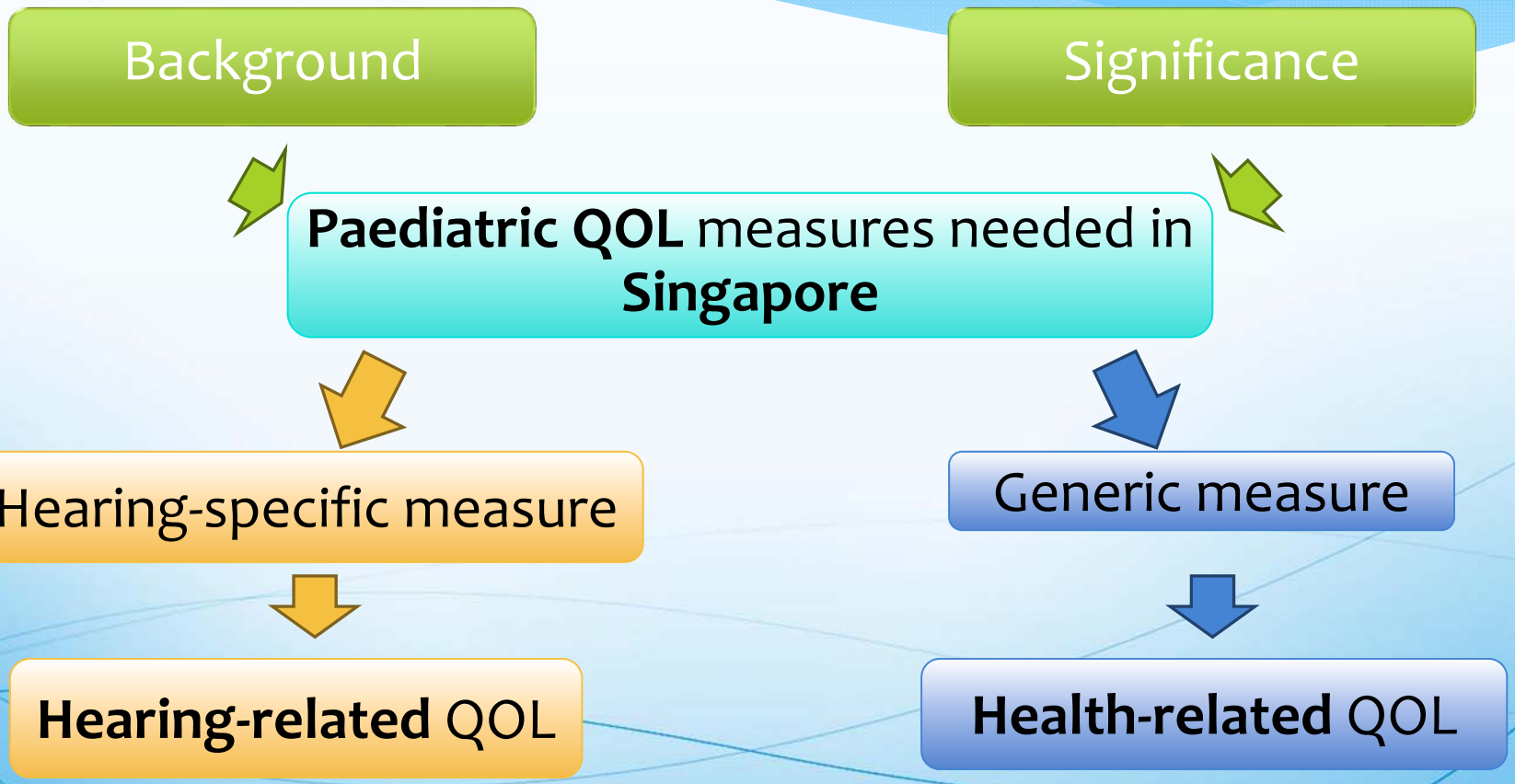


Background & significance

Background	Significance
UNHS: **4 per 1000** born with hearing loss[2]	**Considerable incidence** of childhood hearing loss[2]
Dire consequences of hearing loss on child's **overall development** and **family** functioning[3,6]	•**Identify** and **manage** children and families with poorer perception of well-being[1,4]
Lack of **current measures** and **research** [5,6]	•Functional assessments **do not** assess quality of life (QOL)[6] • **1st** of such study done in *Singapore*

Peadiatric QOL measures



Objectives

Hearing-related QOL

Health-related QOL

* 1. To investigate **hearing-related QOL** ratings for Singaporean hearing-impaired children using **hearing aids (HAs)** and/or **cochlear implants (CIs)**.

* 2. To investigate **health-related QOL** ratings for both **normally hearing (NH)** and **hearing-impaired (HI)** Singaporean children and their families.

Hypotheses

1. NH vs. HI

NH group will have better child health-QOL scores

2. HA vs. CI

Health and **hearing-QOL** scores between groups: significantly different

3. HI groups

Child **hearing-QOL scores** and **audio+demo variables:**

significant relationships

4. NH & HI

Parent-child responses:

significant correlations

5. HI groups

Health vs. **hearing-related QOL:**

No significant correlation

Methods

Cross-sectional study

80 families

44 NH families

22 HA families

14 CI families

	HA(n=22)		CI(n=14)		NH(n=44)	
	M	SD	M	SD	M	SD
Age (years)	10.2	4.4	8.0	4.4	7.4	3.7
Experience with HA (months)	55.8	40.0	43.8	46.1	-	-
Experience with CI (months)	-	-	34.2	32.0	-	-

Subject criteria:

- Children between **2 to 18 years** old, born and raised in Singapore.
- **No** *significant medical problems* and/or *developmental delays*.
- **HI children** worn hearing device for **≥6 months.**

Methods (questionnaires)

Hearing-related QOL

80 families

Health-related QOL

Cochlear™

PedsQL™

44 NH families

22 HA families

14 CI families

Children using Hearing Device(s) QOL (CuHDQOL)[5]

Parent-reported

1. Generic Core Scales (**GCS**)[1]
2. General Well-being Scale (**GWS**)[1]
3. Family Impact Module (**FIM**)[1]

•Parent-reported

•Child self-reported GCS and GWS (child 5-18 years)

•Questionnaires took **<20 minutes** to complete.
• Recall time: 1 month

Results (Hypothesis 1)

1. NH vs. HI

NH group will have better child health-QOL scores

NH vs. HA | **Multiple linear regression** | NH vs. CI

PedsQL questionnaire Subscale &total	NH vs. HA B	NH vs. HA p
GCS (parent-reported)		
Emotional	-9	
Social	-1	
School	-1	
Total	-8	
GWS (parent-reported)		
Well-being	-1	
Health	-24	
FIM (parent-reported)		
Total FIM	-10.6	**0.023**
Total health QOL	-10.7	**0.027**

HI children had ***poorer perceptions*** of their *health and overall well-being* than their **NH peers.**

PedsQL questionnaire Subscale &total	NH vs. CI B	NH vs. CI p
ported)		
Social	-13.4	**0.033**
ed)		
Physical	-13.0	**0.005**
Social	-16.8	**0.031**
Total	-11.8	**0.018**
ported)		
Health	-19.4	**0.039**
FIM (parent-reported)		
Total FIM	-16.7	**0.003**
Total health QOL	-16.1	**0.005**

Hypothesis 1 supported

Results (Hypothesis 1)

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Hypothesis 1 supported

Results (Hypothesis 2)

2. HA vs. CI

Health and **hearing-QOL** scores between groups: significantly different

Hearing-related QOL | HA vs. CI | **Health-related** QOL

CuHDQOL questionnaire Subscale &total	HA vs. CI	
Parent-reported		
Parent perspectives and expectations		
Total	-9.1	**0.033**

	HA vs. CI	
	B	p
cal	-13.8	**0.005**
otal	-10.7	**0.042**

CI group scored **significantly lower** than **HA** group

Hypothesis 2 supported

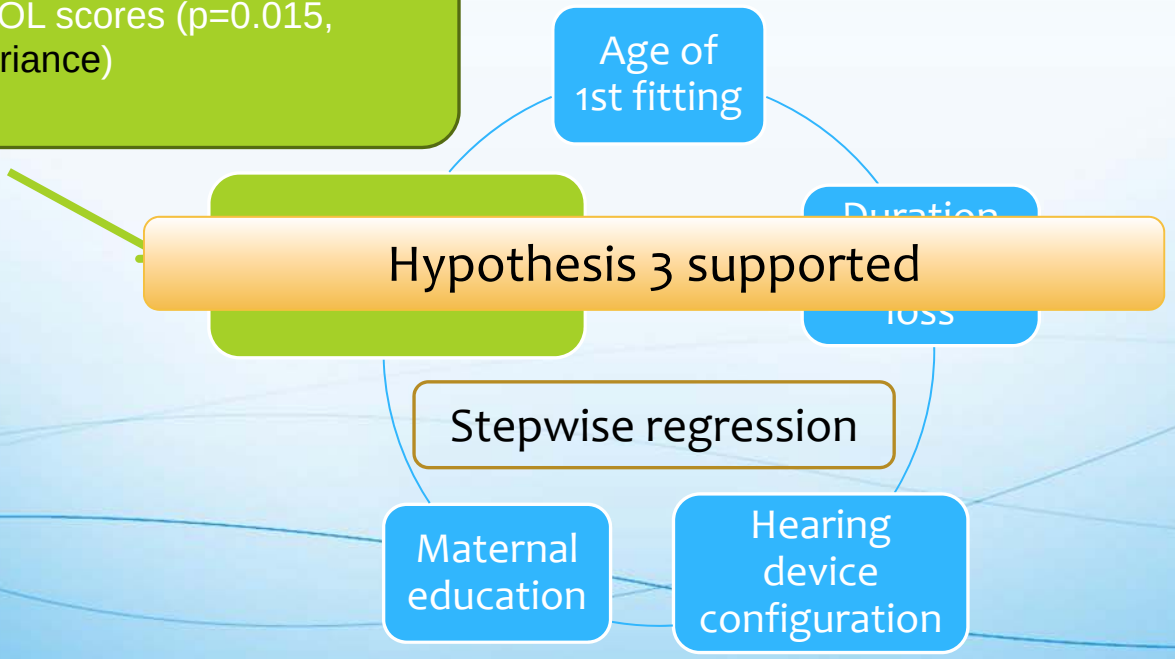
Results (Hypothesis 3)

3. HI group

Child **hearing-QOL scores** and **audio+demo variables:**

significant relationships

Significant predictor of hearing-related QOL scores (p=0.015, 16.2% variance)



Results (Hypothesis 4)

4. NH & HI

Parent-child responses: significant correlations

Pearson correlation

	r value/ sig. (2-tailed)	NH	HA	CI
GCS	Physical	**0.**		0.25/0.27
GCS	Emotional	**0.**		-0.004/0.99
GCS	Social	**0.7**		0.38/0.31
GCS	School			0.39/0.30
GCS	Total score	**0.6**		0.28/0.46
GWS	Well-being	**0.47***/0.045	0.44/0.13	0.10/0.82
GWS	Health	-0.36/0.88	**0.56***/0.048	0.16/0.70

Parent-child agreement: NH group higher than **HI groups.**

Hypothesis 4 partially supported

correlation is significant at 0.01 level.

Results (Hypothesis 5)

5. HI group

Health vs. **hearing-related QOL:**

No significant correlation

- Parent-reported **total GCS** scores and **total CuHDQOL** scores were compared.

Pearson correlation

- Significant **positive moderate correlations** were observed:
  - r= 0.359*, p= 0.031

Hypothesis 5 not supported

Conclusion

	Significantly better ratings	
Study groups	Health-related QOL	Hearing-related QOL
NH		N.A.
HA		
CI		

	Significant correlations	
Study groups	Parent-child responses	Health and hearing-related QOL
NH		N.A.
HI		

Family income: only SES predictor of *hearing-related QOL*.

Clinical recommendations

1. **parent** and **child-reported,**
2. **hearing-specific** and **general-health QOL** measures to ***compliment functional measures*** to provide more ***individualised*** and ***better informed*** clinical care.

Future research (Singapore context)

- **Child-reported** hearing-related QOL measures
- **National level** paediatric hearing-related QOL study
- **Cross-cultural comparison** of hearing-related QOL outcomes

Acknowledgments

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