

Parents' Beliefs, Self-Efficacy, and Involvement Relevant to Their Child's Hearing Loss

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Introduction

- Results from the Outcomes of Children with Hearing Loss (OCHL) study
 - Optimal language input and hearing device use = optimal language outcomes for children with HL
 - For infants and toddlers, device use is highly variable and consistent use is difficult to establish (Walker et al., 2015).
 - Similarly, there is high variability in the quantity and quality of the linguistic exposure children are exposed to (Ambrose et al., 2014).
- Long-term goal: develop evidence-based strategies for helping caregivers optimize these two domains



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Parental Self-Efficacy (PSE)

- PSE refers to parents' beliefs in their ability to perform a parenting task successfully (e.g., feeding, discipline) (Bandura, 1977)
- PSE can differ for different parenting tasks
- PSE is malleable (Benedetto & Ingrassia, 2018)
- PSE is tied to parent characteristics that are, in turn, tied to child outcomes (Mouton, Loop, Stevenart, & Roskam, 2018)
- Low SES → increased likelihood of low PSE → heightened risk for poor outcomes associated with low PSE (Coleman & Karraker, 2003)



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PSE of parents of children with HL

- DesJardin (2003): Scale of Parental Involvement and Self-Efficacy (SPISE)
- For mothers of children with HL, PSE pertaining to supporting their child's speech and language was related to:
 - How often mothers' reported engaging in at-home activities designed to support their child's speech and language development (DesJardin, 2003)
 - How often mothers were observed to use higher-level language strategies, which in turn was related to children's language skills (DesJardin & Eisenberg, 2007).
- On average, PSE for supporting their children's auditory and language skills was relatively high for infants (12-24 months of age) and was lower for preschoolers (36-48 month of age) (DesJardin, 2017).



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PSE in Early Intervention

- Ideally, EI providers would coach and collaborate with caregivers, using a coaching model that seeks to build PSE and provide parents with the necessary skills to support their child's development.
- Given that PSE for a task may change over time and parents may need additional and varied support as their children gain language skills, professionals working with families of very young children with hearing loss need better ways to recognize the kinds of support parents may require throughout their years in early intervention.



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Revisiting the SPISE (DesJardin, 2010)

- How much do you feel that you can positively affect your child's:
 - listening development?
 - speech development?
 - language development?
 - ability to express his or her thoughts?
 - overall early development?
- How much do you feel that you know about and are able to:
 - check and put on your child's hearing aids or cochlear implant on a daily basis?
 - do speech/language activities/techniques with your child at home in daily routines?
 - adjust the settings of your child's hearing aids (volume) or cochlear implant (programs) on a daily basis?
 - check your child's listening skills using the six Ling sounds (a, oo, ee, s, sh, m) on a daily basis?
 - help your child develop sounds
 - help your child develop words



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Revisiting the SPISE

- Goals
 - Learn more about specific tasks parents that were strengths for parents and areas in which they needed support or guidance
 - Differentiate between knowledge and confidence
 - Identify beliefs parents hold that might influence their behavior



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SPISE - Revised (SPISE-R)

- Sections
 - Beliefs: 8 items with a cut point for "concerning"
 - Knowledge (10 items: 5 for hearing device, 5 for language development)
 - Confidence (10 items: 5 for hearing device, 5 for language development)
 - Actions (7 items: hearing device, 5 items: language development, 3 items: intervention)
 - Device Use



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SPISE-R: Beliefs

Belief	Rule
1. If children are given the right supports, they can overcome the effects of hearing loss.	≤4
2. The quality of my child's service providers will have a big impact on how my child develops.	>#3
3. How my family talks to and interacts with my child will have a big impact on how my child develops.	<4
4. No matter what we do as a family, my child's development will be delayed compared to children with normal hearing.	≥4
5. My child's hearing devices help him/her learn to communicate.	<4
6. If people see my child wearing his/her hearing device(s), they will judge my child or family.	≥4
7. If I keep my home too quiet, my child won't learn to listen in noise.	≥4
8. If children wear their hearing device(s) all the time, they will become overly dependent on them.	≥4

Likert scale ranging from 1 ("not at all") to 7 ("a great deal").



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SPISE-R: Knowledge, Confidence, Actions

KNOWLEDGE: Parents must learn a lot of new information and skills when their child has a hearing loss. This process takes time. We are interested in how much you currently <u>know</u> about each topic.	CONFIDENCE: Knowledge alone doesn't always make us confident or comfortable doing something. We may need more time or practice to build confidence. Please indicate how <u>confident</u> you are in your ability to do each thing.	ACTIONS: We know daily lives are busy. There are many responsibilities that parents have. It is not possible to always do everything we would like to do each day. Given other responsibilities, we are interested in how often you are able to <u>do</u> the following things.
How to manage my child's hearing device(s) Strategies to use to keep my child's hearing device(s) on him/her	Determine if my child's hearing device(s) are working okay Put and keep my child's hearing device(s) on him/her	Daily listening checks on my child's hearing device(s) Make sure I, or someone else, puts my child's hearing device(s) on immediately a) after he/she wakes up b) if they fall off or my child takes them off
The sounds, words, or sentence types my child should be learning to say	Help my child learn to say new sounds, words, or sentences	Use strategies during our daily activities to help my child learn to say new sounds, words, or sentences

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SPISE-R: Device Use

- Questions used to calculate percent of the day the child is awake with devices on
- How often does your child wear their hearing device(s)
 - At home
 - In the car
 - In daycare or school
 - When cared for by family or friends outside the home
 - Playing outside
 - On outings (e.g., store, zoo, children's museum)

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Research Questions

1. Do the knowledge, confidence, and actions sections of the SPISE-R have sufficient internal consistency?
2. What do parents' responses to the beliefs, knowledge, and confidence items tell us about parents' needs and strengths?
3. Are child characteristics (current age for CI, current age for HA, better-ear hearing category for HA, age at confirmation of HL, type of hearing device) or parent education level associated with parents' beliefs, knowledge, or confidence?
4. Are parents' beliefs, knowledge, or confidence related to parents' actions, children's hearing device use, or children's language abilities?

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SPISE-R Study: Method

- Recruited locally for longitudinal study or nationally for online survey
- 72 respondents
 - Child age: 4-36 months
 - Device type
 - CI = 33%
 - HA = 67%
- Online participants: Developmental Profile-3



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Results: RQ1 – Internal consistency

- Knowledge: Cronbach's alpha = 0.89
- Confidence: Cronbach's alpha = 0.92
- Actions: Cronbach's alpha = 0.92



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Results: RQ2 – Parents' strengths & needs

Belief	Agreement level			concerning
	M	SD	Range	
1. If children are given the right supports, they can overcome the effects of hearing loss.	5.83	1.52	1-7	15%
2. The quality of my child's service providers will have a big impact on how my child develops.	5.82	1.27	2-7	7%
3. How my family talks to and interacts with my child will have a big impact on how my child develops.	6.49	0.95	3-7	3%
4. No matter what we do as a family, my child's development will be delayed compared to children with normal hearing.	2.47	1.51	1-7	29%
5. My child's hearing devices help him/her learn to communicate.	5.89	1.62	1-7	18%
6. If people see my child wearing his/her hearing device(s), they will judge my child or family.	3.24	1.65	1-7	47%
7. If I keep my home too quiet, my child won't learn to listen in noise.	3.03	1.66	1-7	43%
8. If children wear their hearing device(s) all the time, they will become overly dependent on them.	1.79	1.21	1-6	14%



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Results: RQ2 – Parents’ strengths & needs

Score	Knowledge			Confidence		
	M	SD	Range	M	SD	Range
Device use subsection score	5.31	1.07	3.40-7	5.29	1.12	3.00-7
Language development subsection score	5.30	1.26	2.40-7	5.50	1.19	2.00-7
Total section score	5.30	1.08	3.00-7	5.40	1.08	2.5-7

Knowledge and confidence scores were highly correlated ($r = .085$)



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Results: RQ2 – Parents’ strengths & needs

- Knowledge: 3 lowest scores
 - how to do the Ling 6-Sound Test (ah, ee, oo, m, sh, s)
 - the sounds, words, or sentence types my child should be learning to say
 - what my child can and cannot hear with his/her hearing devices
- Confidence: 3 lowest scores
 - find out if my child is hearing okay by using the Ling 6-Sound Test (ah, ee, oo, m, sh, s)
 - help my child hear and understand new speech sounds or sounds in his/her environment
 - help my child hear by making changes in his/her environment



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Results: RQ3 – Parent & Child Characteristics

SPISE-R Item/Score	Characteristic
1. If children are given the right supports, they can overcome the effects of hearing loss.	Parent Ed
4. No matter what we do as a family, my child’s development will be delayed compared to children with normal hearing.	Parent Ed HL for HA
5. My child’s hearing devices help him/her learn to communicate.	
6. If people see my child wearing his/her hearing device(s), they will judge my child or family.	
7. If I keep my home too quiet, my child won’t learn to listen in noise.	HL for HA
8. If children wear their hearing device(s) all the time, they will become overly dependent on them.	
Knowledge	Device Type
Confidence	

Not related: current age for CI, current age for HA, age at confirmation of HL



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Results: RQ4 - Outcomes

SPISE-R Item/Score	Outcome
1. If children are given the right supports, they can overcome the effects of hearing loss.	
4. No matter what we do as a family, my child's development will be delayed compared to children with normal hearing.	
5. My child's hearing devices help him/her learn to communicate.	Device Use
6. If people see my child wearing his/her hearing device(s), they will judge my child or family.	
7. If I keep my home too quiet, my child won't learn to listen in noise.	
8. If children wear their hearing device(s) all the time, they will become overly dependent on them.	
Knowledge	Actions, Device Use
Confidence	Actions, Device Use, Language

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Results and Clinical Implications

- Knowledge and confidence levels were associated with self-reported action levels and hearing device use.
- Confidence levels were also associated with children's language scores.
- EI providers should seek to boost parents' knowledge and confidence as an intervention strategy that may ultimately affect children's outcomes.

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Results and Clinical Implications

- Lower parent education level and degree of HL for children with HAs were associated with belief that HL would lead to inevitably poorer outcomes.
 - Strong beliefs could result in parents being disincentivized to take actions that could positively impact their child's learning.
- Greater degrees of HL for children with HAs was also a risk factor for a concerning score for "If I keep my home too quiet, my child won't learn to listen in noise."
 - Strong beliefs could lead to parents not reducing background noise in their home, which is problematic given the difficulty this group of children faces in learning from speech in noisy situations (Fintzso-Hieber & Tillman, 1978).

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Clinical Implications

- The SPISE-R may be helpful for
 - starting discussions with parents' about their beliefs
 - identifying areas of strength and need for families
 - identifying when there are gaps between knowledge and confidence
 - identifying situations in which device use could be improved
 - facilitating discussions of barriers to actions other than beliefs, knowledge, and confidence



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Ways to Build Self-Efficacy in Parents

- Build your own sense of efficacy about topics concerning hearing devices and hearing loss. Use a variety of sources, including parents.
- Encourage parents to observe a new skill, practice the skill with help and on their own, and then teach another person how to do the skill during sessions (e.g., putting in hearing aids, changing batteries).
- Talk to parents about what they know and don't understand. Make a plan to address the things they don't YET understand.
- Praise new learning and new skills acquired – make sure they get applied and used.
- Identify things that families are good at doing, focus on these strengths to improve areas of challenge.



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Questions?

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