Critical Factors in Pediatric Cultural Neuropsychology: Reflecting on the past 3 years and anticipating the future

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Disclosures
• I have no conflicts of interest or financial disclosures

Learning Objectives
1. Learners will be able to list the components of the ECLECTIC framework and describe ways to apply it in pediatrics.
2. Learners will be able to explain differences in bilingual education programs and identify ways to properly assess bilingual children in the United States.
3. Learners will be able to discuss considerations in pediatric teleneuropsychology with underserved populations.

What will we learn?

What this presentation is not
• Comprehensive discussion on these topics
• Broad overview of historical information in this area

What this presentation is
• Overview on the latest in these topics
• Provides the most critical or salient aspects in the recent development in these topics

Application of the ECLECTIC Framework
Fuji’s ECLECTIC framework conceptualizes factors for conducting culturally informed assessments.

**ECLECTIC Framework**

- **Education**: quantity and quality of education received, literacy, educational level of the caregivers
- **Culture & Acculturation**: balancing the individual characteristics of the child and family structure with that of the culture that surrounds them
- **Language & Language Proficiency**: use of instruments appropriate to the child and family’s language dominance
- **Economics**: consider the impact of economic instability
- **Communication**: culturally driven verbal and nonverbal markers
- **Testing Situation**: factors that make the child feel at ease: special attention to cultural familiarity with the environment and expectations during assessment
- **Intelligence Concept**: manner in which a culture understands intelligence and the manifestation of this as the values placed on behaviors, skills, and mode of interacting with others
- **Context of Immigration**: reasons for immigration to the United States, documentation status, accompanying trauma

Application in Pediatrics

- HNS 2019 Conference Poster by Moss and MacDonald
- Archives of Clinical Neuropsychology vol 34
- Case example:
  - Take away application: Consider child within their family context and the intersectionality of the parent-child dyad.

Why Autism?

- Affects approximately 1 in 54 children in the US (CDC, 5/2016)
- Global estimate 1 in 160 children
- Increased male to female ratio (~4.5:1)
- We do not have a specific cause
- Seen across all races, ethnic groups, socioeconomic strata, but...

Cultural Differences In Diagnosis

- Hispanic/Latina children are often:
  - misdiagnosed with ASD
  - diagnosed 2.5 years later than their White peers
- Black, Hispanic/Latina, and other racial/ethnic and linguistically-diverse minority youth are:
  - less likely to have a documentation of ASD in their school and health records
- Black youth are:
  - more likely to be misdiagnosed with conduct disorder and adjustment disorder instead of ASD
- Children from a Hispanic/Latina or Asian culture with an IQ in the intellectual disability range are:
  - less likely to be diagnosed with ASD
Take Aways

• Close examination of the potential interactions between culture, language, and environment and their symptoms
• Late diagnosis may require more intensive intervention to compensate for previous inappropriate or insufficient services or learning environments
• Consider how acculturation can impact social engagement (i.e., withdrawal) with peers or could be misattributed to poor adjustment in the new environment
  • Ask questions about the family’s neighborhood, language, and cultural practices/connections
• Determine the child’s dominant language and language proficiency prior to evaluation
• Barriers to communication require disentanglement of cultural differences from developmental ones

More Take Aways

• Consider that traumatic experiences may be associated with atypical behaviors and social interactions that need to be distinguished from symptoms of autism
• Immigration status in the U.S. may impact parents’ desire to seek evaluation for their child secondary to access to services as well as fears of how results can impact citizenship decisions.
• Document the educational level attained of the child and parent in reports, as well as how this could influence testing.
• Attempts should be made to understand a family’s cultural perception of behavioral and social norms that affect educational expectations.
  • Identify family’s knowledge, attitudes, and values re: child’s development and behaviors.

Bilingualism in Children

Levels of Bilingualism

• Level 1: Ability to understand a second language – passive bilingualism or receptive bilingualism
• Level 2: Ability to speak a second language fluently
• Level 3: Ability to read and write in two languages – biliteracy or balanced bilingualism
  • Non-balanced bilingualism – oral and written proficiency in one language and semi-proficiency in the other
  • Mixed bilingualism – divided levels of proficiency across both languages

Language Development

Cognitive and Language Development of Young Bilinguals

• May be different than monolinguals
• 3 types of bilinguals – simultaneous, sequential/successive, circumstantial
• Influenced by:
  • Exposure and opportunities to learn at home
  • SES and Parent education
Receptive Language

26-28 weeks gestation: sensitive to sound

A study examining preference and discrimination of languages of newborns found similar mechanisms for language acquisition (Byers-Heinlein, Burns, Wexler, 2010).

Between 1 and 3 months, babies can hear sounds of all languages spoken, but only develop prototypes for the ones they hear frequently.

Infants exposed to two languages from birth can process each language in a native manner phonetically – but this requires a live person with social interaction.

Between 6 and 12 months, babies can hear sounds of all languages spoken, but only develop prototypes for the ones they hear frequently.

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Simultaneous Acquisition

Does not differ from single language development

Starts even AT BIRTH

Similar acquisition of initial language milestones (i.e. babbling and first words) and grammar development at 2 years

No differences in size of vocabulary

Look at total language

Bilingual children pass through the same stage sequence at approximately the same age as their monolingual peers

Sequential/Successive Acquisition

Typically those who acquire L1 during infancy, and then L2 after age 3 when they transition to preschool

Age and extent of L2 exposure will impact the child’s ability to fully acquire that language

For some, L2 will become L1 and may have L1 attrition

Dependent on parent education, enriched environments, learning in the home (parents/siblings/extended family), socioeconomic status, community exposure

Research has shown that most children are capable of learning L2 after L1 has been established (typically age 3)

Simultaneous vs Sequential

Early bilingualism – before age 12; partial acquisition of L1

Late bilingualism – after a strong foundation in first language

Second language is mediated by the first

Simultaneous bilinguals have less language interference

Ability to acquire a spoken language without deliberate effort diminishes sharply around 12-14 years of age.

Grammar (mastery) is possible in all languages and at all ages, but more easily mastered during childhood.

There may be a critical period for accent.

BICS/CALP

BICS - Basic Interpersonal Communicative Skills

Surface fluency

Informal assessment

CALP - Cognitive Academic Language Proficiency

Formal assessment

Immigrant children often acquire peer-appropriate conversation within 2 years, but take 5-7 years to catch up academically

In mainstream classes – minimal support for academic language development – assumed you have it at the expected level

Bilingual Language Learning

Conclusions

- Brain is primed to learn more than one language
- Speaking one language at home and another language outside of the home, will not destroy child’s language development or L2 acquisition
- Normal process: Language is lost if not used
- Bilingualism is considered a natural ability – all typically developing children have the capacity
- No scientific evidence that bilingualism leads to language delay, but bilingual children can also present with a delay

What Affects Proficiency?

- Priority
- Consistency
- Attitude
- Ability

Markers of Bilingualism in School-Age Children

- Expect that a child will have a dominant language
- Balanced bilingualism is the exception to the rule
- This may change over time
- Theory of transfer – concepts in one language can be transferred directly towards another language without having to be re-learned
- Theory of suppression – constantly suppressing one language to speak another
- Children will mix both languages as they learn them - codeswitching
- “Silent Period” – transient to several months

English Language Learners in US
**Bilingual Education**

- One-way Immersion - students from predominantly one language group are taught through a second language (i.e., immersion). Primarily serve majority language (English) speakers.
- Heritage or Native Language - provides students the opportunity to develop higher levels of proficiency in their home or heritage language.
- Developmental/Maintenance/One-way Dual Language - primarily on instructing ELLs; preserving students’ ethnic language and culture while achieving bilingualism and biliteracy through balanced instruction in both languages.
- Two-way Dual Language/Two-way Immersion - ELLs and native English speakers are taught literacy skills and academic constructs in English and the partner language.

**Time Allocation**

- Two-way dual language have specific student ratios with balance among students close to 50/50 (50 percent native English speakers and 50 percent ELLs).
- Developmental and two-way dual language bilingual programs in the U.S. generally follow a 50/50 or 90/10 model.
- 90/10 will have a gradual transition to a 50/50 model over the course of several years.
- Balance language exposure by separating instructional time according to content area, course, teacher, day, week, or semester.
- Guided by research on CALP, students usually receive content-based instruction in the partner language for a minimum of six years (Blaker & Wright, 2017; Hakuta, 2011).
- Students are typically enrolled in the program during kindergarten or first grade and remain through elementary, with few programs continuing at the secondary level.

**Literature to Practice**

Table 3. List of practical recommendations relevant to the neuropsychological assessment of bilingual children in the U.S.

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<thead>
<tr>
<th>Recommendations</th>
<th>Details</th>
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<tbody>
<tr>
<td>1</td>
<td>Obtain a comprehensive history of the child's exposure to and use of language or cultures.</td>
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<td>2</td>
<td>Evaluate the child's language background, including both languages spoken at home and any other languages they may have been exposed to.</td>
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<td>3</td>
<td>Examine the child's ability to switch between languages or cultures.</td>
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<td>4</td>
<td>Assess the child's proficiency in both languages.</td>
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<td>5</td>
<td>Determine the child's language proficiency level and assess their ability to use both languages effectively.</td>
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<td>6</td>
<td>Compare the child's performance on standardized language assessments.</td>
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<td>7</td>
<td>Consider the child's cognitive development and identify areas for improvement.</td>
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<td>8</td>
<td>Evaluate the child's overall language proficiency and determine their readiness for bilingual education.</td>
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**Assessing Language Preference/Dominance**

- What language do they watch TV/listen to music?
- Do they read/write in their home language and how well?
- Languages spoken at home:
  - Languages spoken at home
  - How well do they speak the home language (include vocabulary and grammar)?
  - Do they read/write in their home language and how well?
  - If parent asks a question in the home language, in what language does patient respond?

**Treatment Recommendations/Interventions**

- Tips for Supporting Bilingual Language at Home:
  - Especially important for monolingual parents...
  - The earlier the better (younger brain requires less input), but there is no critical period (you may not have native accent, but can learn at any age)
  - More input = faster acquisition and greater proficiency
  - Need ongoing input in both languages
  - Provide a language-rich environment including books/toys
**Tips for Supporting Bilingual Language at Home**

- Consistency of input should be the goal
  - One Parent One Language approach
- Learn the language along with your child, but speak in the language you are fluent
  - Avoid mixing languages or using broken language
- Exposure to fluent speakers in different contexts (church, concerts, plays, travel, music, radio, T.V.)

**Teleneuropsychology Considerations**

**Private Practice Model**

- Pediatric Neuropsychology – first article was Harder et al (2020) validating home-based pediatric TeleNP
  - No significant differences
  - Favorable patient satisfaction
  - Valid, feasible, acceptable
  - Limitation of medical condition
- Special Edition in Dec 2020 Archives of Clinical Neuropsychology included 3 articles specific to pediatric TeleNP and an additional 2 related to diverse adult populations

**Consultation Model**

- Development of video-based pediatric TeleNP consultation in rural communities (Sherwood & MacDonald, 2020)
  - Triage and provide initial recommendations
  - Clinical decision tree
  - Video feedback
  - Limitation on equitable service and rural delivery

**Looking Ahead**

- Further application of ECLECTIC model
- Improvement of bilingual tests especially in young children and those with more significant impairments
- Research protocols in pediatrics to include bilingual children
- Expansion of HNS initiatives in Pediatrics
References


