ACTIVITY: Bias in Evidence-Based Assessment

Introduction

The following activity is designed for small group discussion to provide each learner with exposure to multiple perspectives. Three case samples are provided along with a blank template to craft additional cases. Instructors may find it especially useful to include scenarios encountered in their service area.

A SUM Tool template is provided below, as well as copied at the end of each case example.

Note: For the three cases provided, the professional focus of the case as written, SLP or Audiology. However, each may be modified to adapt to your students' needs.

Instructions

For each case example:

- Read the scenario
- Briefly outline (review or discuss) your assessment plan
- Then complete a SUM Tool to identify, understand, and mitigate potential sources of bias
- Finally, in your group, discuss how this may change your assessment plan

SUM tool

Instructions:

- First, first identify the potential sources of bias. List these separately. (first column: Sources of Bias)
- Second, for each source of bias, identify 1-3 potentials impacts if these biases remain unaddressed. (Middle column: Understand the Impact)
- Third, for each source of bias, list 1-3 actions you can take to minimize its impact on your assessment process (last column: Mitigate)

	Sources of Bias: List	Understand the Impact: Describe	Mitigate: What can you do?
1			
2			
3			
4			
5			

CASE 1: SLP FOCUS

3-year-old referred to private practice with concerns of delayed speech and language

Here's what you know prior to meeting the child and family:

- Demographics & Social History: 3-year-old girl, "Rosa", only child, Caucasian, parents with graduate degrees and work full-time, languages spoken in the home: English and Spanish (primarily Spanish-speaking paternal grandparents provide childcare in the afternoons 2x/week, 3:00 – 6:00 p.m.), Rosa attends a community, English-speaking preschool/daycare, 8:00 – 3:00 p.m., 5 days/week.

- <u>Medical History:</u> No concerns other than speech. Passed newborn hearing screening; growing normally, all developmental milestones met as expected.
- <u>Concerns:</u> Rosa is quiet and well behaved, though occasionally must be reminded to do things. Her speech is low and hard to understand by non-familiar listeners. Parents are concerned that she doesn't tell stories or engage in conversation like they see other children doing. The preschool teacher reports that Rosa is shy, but well-behaved and participates in all activities.

Step 1: Draft your assessment plan
<u>Assessment Plan:</u>
1. Clinical Interview (questions/probes)
2. Assessment Procedures (tests & tools)
3. Other

Step 2: Complete the SUM tool
<u>SUM tool</u>
- First, first identify the potential sources of bias. List these separately. (first column: Sources of Bias)
- Second, for each source of bias, identify 1-3 potentials impacts if these biases remain unaddressed. (Middle column: Understand the Impact)
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3			
4			
5			

Step 3: How may you revise your assessment plan based upon the sum tool results?

CASE 2: SLP FOCUS
Adult admitted to rehabilitation floor with post-COVID complications as well as muscle weakness and speech disturbance of undetermined cause

Here's what you know prior to meeting the patient:
- <u>Demographics & Social</u>: 73-year-old African American male, retired engineer, lives with his wife (aged 72), has 2 married children and 3 grandchildren: his son's family lives relatively close by, while his daughter's family lives out of state.
- <u>Medical History:</u> Overweight, medically controlled diabetes, received all available COVID vaccines when available, presented to the ED two weeks ago with cold symptoms, lethargy, overall weakness, confusion, and slurred speech. Admitted. Diagnostic work up: Initial imaging negative for signs or symptoms of hemorrhage or stroke. Diagnosed with COVID; trach placed

initially due to respiratory compromise, but now capped. Admitted to Rehab floor 2 weeks later with on-going muscle weakness, mild confusion, and speech disturbance.

- <u>Orders received:</u> SLP eval & treat.

Step 1: Draft Your Assessment Plan
<u>Assessment Plan:</u>
1. Clinical Interview (questions/probes)
2. Assessment Procedures (tests & tools)
3. Other

Step 2: Complete the SUM tool
<u>SUM tool</u>
- First, first identify the potential sources of bias. List these separately. (first column: Sources of Bias)
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	Sources of Bias: List	Understand the Impact: Describe	Mitigate: What can you do?
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Step 3: Discuss revisions to your assessment plan based upon the sum tool results

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CASE 3: AUDIOLOGY FOCUS
Adult pre-employment hearing test

Here's What You Know Prior to Meeting the Patient:
- <u>Demographics & Social History</u>: 27-year-old male, military veteran, Spanish is his first language, patient would like to take an auditory evaluation for employment with local police department
- <u>Medical History:</u> Normal hearing according to the World Health Organization (WHO, 2021), acoustic neuroma removed from the right VIIIth nerve, significant noise exposure
- <u>Concerns:</u> Patient complains of difficulty understanding speech in noisy environments

Step 1: Draft your assessment plan
<u>Assessment Plan:</u>
1. Clinical Interview (Questions/probes)

2. Assessment Procedures (Tests & Tools): For this example, assume that the following minimal test battery is required by the police department. You may add to this as needed:
   - pure-tone threshold test and the WHO (2021) guidelines for auditory function,
   - the American English Hearing in Noise Test (HINT) using the published norms from 2008
3. Other

Step 2: Complete the SUM tool
SUM tool
- First, first identify the potential sources of bias. List these separately. (first column: Sources of Bias)
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- Third, for each source of bias, list 1-3 actions you can take to minimize its impact on your assessment process (last column: Mitigate)

	Sources of Bias: List	Understand the Impact: Describe	Mitigate: What can you do?
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2			
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5			

Step 3: Discuss revisions to your assessment plan based upon the sum tool results

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Case X:
Blank template for additional case scenarios

Here's what you know prior to meeting the client/student/patient:
- Demographics & Social History:
- Medical History:
- Concerns:

Step 1: Draft your assessment plan
Assessment Plan:
1. Clinical Interview (questions/probes)
2. Assessment Procedures (tests & tools)
3. Other

Step 2: Complete the SUM tool
SUM tool
- First, first identify the potential sources of bias. List these separately. (first column: Sources of Bias)

- Second, for each source of bias, identify 1-3 potentials impacts if these biases remain unaddressed. (Middle column: Understand the Impact)
- Third, for each source of bias, list 1-3 actions you can take to minimize its impact on your assessment process (last column: Mitigate)

	Sources of Bias: List	Understand the Impact: Describe	Mitigate: What can you do?
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Step 3: Discuss revisions to your assessment plan based upon the sum tool results

Answer key

Some possible responses are listed below for your reference (not an exhaustive list).

sum tool – case 1: 3-YEAR-OLD WITH CONCERNS FOR DELAYED SPEECH & LANGUAGE

	Sources of Bias: List	Understand the Impact: Describe	Mitigate: What can you do?
1	Examiner Bias: Assumptions being made For example: That child is hearing normally That the child is or is not learning Spanish – do the grandparents really use a lot of Spanish with her? That the child's non-verbal skills must be fine because of her parent's education and no issued identified by the teacher.	Could cause me to miss something, leading to a misdiagnosis, inefficient or ineffective treatment plan, negative effect on learning outcomes, and wasted resources.	List the assumptions that I'm making. Then consider: How can I check these? Am I cutting any corners in my assessment because of these assumptions?
2	Reporting Bias: What if the teacher is overlooking signs of struggle because Rosa is so cooperative?	Could lead to misdiagnosis and/or dismissal of treatment recommendations as not needed.	Ensure that I complete a full assessment and don't assume all areas are intact. Consider how best to collaborate with and engage the teacher in the evaluation & treatment process.
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	Sources of Bias: List	Understand the Impact: Describe	Mitigate: What can you do?
1	Detection Bias Team is assuming a neurological insult as yet undetected via imaging (small stroke). (e.g., it was later found that this patient was in the very early stages of Parkinson's disease when he contracted COVID. He did not suffer a stroke.)	Could lead to a truncated assessment if a shortened "stroke protocol" is used. Could result in delayed treatment for an undetected underlying condition.	Ensure that I complete a comprehensive evaluation including speech, language, executive functioning, and swallowing skills. Actively contribute to the discussion in rounds by sharing my results and observations. This may help the medical team persist in investigating unusual symptoms that don't fit with the working diagnosis.
2	Cultural/Examiner Bias What if the team is assuming that: • as the pt is overweight, that he is not active? • as he is retired, is less cognitively engaged? (e.g., this pt was actually an avid reader, bridge player, & golfer).	Could lead to reduced expectations for the patient, thus artificially limiting his recovery.	Ensure that I don't skimp on the clinical interview. Make sure that I ask open ended questions so that I get a full understanding of the patient's previous functioning and his goals for returning home (what activities he strives to return to, etc.)
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sum tool – case 3: audiology

	Sources of Bias: List	Understand the Impact: Describe	Mitigate: What can you do?
1	Test language bias	No expected effect on pure-tone thresholds, possible language effect on speech-in-noise results	Consider using a speech-in-noise testing with the target speech in a more appropriate language
2	Limited frequencies for pure-tone threshold testing	WHO's method of auditory assessment may miss poor hearing sensitivity at 3.0, 6.0, and/or 8.0 kHz	Include these missing frequencies for pure-tone threshold testing
3	Only one ear considered for classification of pure-tone threshold results	WHO hearing classification may miss impact of single sided deafness	Do not base the assessment of auditory function on the results from only one ear.
4	No norms from WHO (2021)	The guidelines from the WHO for hearing classification are questionable.	Consider classification of auditory assessment on more than just the pure-tone threshold test
5	HINT normative sample most likely included individuals with a speech-in-noise disorder	Patient may be classified with normal speech-in-noise ability when a speech recognition in noise deficit is present.	Use a speech-in-noise test that was normed on individuals without the self-report of speech perception in noise difficulties.
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