Defining social communication in autism spectrum disorders: A scoping review
Amy Curtis Stone, BS(SLP)A, Brittany Reed, BS(SLP)A, Mary Jo Cooley Hidecker, Ph.D., CCC-A/SLPB, Brianio Di Rezze, MSc.C(OT)C, Lonnie Zwaigenbaum, MD, Peter Rosenbaum, MD

A Department of Speech-Language Pathology, University of Central Arkansas; B Department of Communication Sciences and Disorders, University of Houston; C School of Rehabilitation Science, McMaster University; D Department of Paediatrics, University of Alberta; E Department of Paediatrics, McMaster University.

Background
- Autism spectrum disorder (ASD) diagnostic criteria based on DSM-IV include social & communication skills.1
- Proposed collapse of social and communication into one criterion in DSM-V. Also propose a separate Social Communication Disorder.2
- Issue: What aspects of social communication in ASD differentiate levels of functioning?3
- It is unclear how clinicians and researchers define ‘social communication’.4
- Synthesizing treatment outcomes across social communication may be difficult.5
- This scoping review3,4 maps key concepts of ‘social communication’ in ASD.

Study Objective
- To conduct an exploratory scoping review4 of the literature to examine the defining characteristics of social communication construct in children with ASD.
- Research question: “How is social communication defined and operationalized for children with ASD?”

Methods
- Search Strategy
  - Iterative search strategy conducted with electronic bibliographic databases (e.g., CINAHL, ERIC, PsycINFO, & MEDLINE) with ‘ASD’ and synonyms as MeSH terms and ‘social communication’ as a keyword in the abstract or title.
  - Sources meeting inclusion criteria described “social communication” involving children and/or youth.
- Selection Process
  - Sources included primary research (e.g., descriptive, qualitative or quantitative) and other research and clinical work (e.g., theses, books).
  - Two reviewers independently assessed sources for descriptions of social communication. Any discrepancies were resolved by discussion.
- Charting the data
  - Data were charted by two reviewers (AC & BR) in a matrix listing descriptive information (e.g., professional area, diagnosis, age) and social communication definitions.
- Content Analysis
  - Charting process: Concepts from experts provided a starting point for discussions. Members discussed the definitions of social communication from the literature and examined themes. Themes were re-evaluated (relevance and theme development) as sources were reviewed.

Results

Descriptive Content Themes
- 155 sources: 136 journal articles, 11 books, and 8 theses met inclusion criteria.
- Age ranges within the sources: 36% infant/toddler (0-36 months), 42% preschool (3-5 years), 43% school-age (5-12 years), 23% adolescent (12-18 years), 9% adult (18+ years). (Some sources included more than one age range.)

From the review, 4 themes emerged. 37 sources (24%) contained >1 theme
- Theme 1: defined social communication through standardized assessments. Mostly used: SCQ, ADOS, ADI-R, Early Social Communication Scales; & Communication and Symbolic Behavior Scales (56% of articles)
- Theme 2: defined social communication as ‘social interaction skills’, i.e., eye contact, turn taking, topic maintenance, & appropriateness. Social interaction skills varied across sources. (27% of articles)
- Theme 3: defined social communication as synonymous with joint attention/joint referencing. Some sources defined this as sharing attention with another person. Some listed behaviors associated with joint attention, i.e., eye gaze, pointing & gesturing. (25% of articles)
- Theme 4: social communication lacked a definition; authors used ‘social communication’ without defining or operationalizing. (17% of articles)

Table 1: Number of sources categorized by profession mapped onto each theme

<table>
<thead>
<tr>
<th>Professional area</th>
<th>Theme 1 (n=85)</th>
<th>Theme 2 (n=48)</th>
<th>Theme 3 (n=41)</th>
<th>Theme 4 (n=26)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Education</td>
<td>3 4%</td>
<td>3 7%</td>
<td>2 5%</td>
<td>3 12%</td>
</tr>
<tr>
<td>Medical (but not Psychiatry)</td>
<td>14 16%</td>
<td>6 12%</td>
<td>2 5%</td>
<td>3 12%</td>
</tr>
<tr>
<td>Psychiatry</td>
<td>25 29%</td>
<td>8 17%</td>
<td>10 20%</td>
<td>3 12%</td>
</tr>
<tr>
<td>Psychology</td>
<td>26 31%</td>
<td>15 31%</td>
<td>15 37%</td>
<td>8 31%</td>
</tr>
<tr>
<td>Speech-Language Pathology</td>
<td>8 9%</td>
<td>23%</td>
<td>7 12%</td>
<td>1 4%</td>
</tr>
<tr>
<td>Other</td>
<td>9 11%</td>
<td>5 10%</td>
<td>4 10%</td>
<td>3 12%</td>
</tr>
</tbody>
</table>

Note: Professional area was determined by journal type or first author

Table 2: Number of sources categorized by diagnosis mapped onto each theme

<table>
<thead>
<tr>
<th>Diagnosis</th>
<th>Theme 1 (n=85)</th>
<th>Theme 2 (n=48)</th>
<th>Theme 3 (n=41)</th>
<th>Theme 4 (n=26)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Autism</td>
<td>80 94%</td>
<td>41 85%</td>
<td>36 88%</td>
<td>20 77%</td>
</tr>
<tr>
<td>Asperger</td>
<td>43 51%</td>
<td>19 40%</td>
<td>14 34%</td>
<td>18 69%</td>
</tr>
<tr>
<td>PDD-NOS</td>
<td>62 79%</td>
<td>25 52%</td>
<td>27 66%</td>
<td>13 50%</td>
</tr>
</tbody>
</table>

Note: Some sources contained more than one diagnosis

Discussion & Conclusions
- Based on the themes, social communication is a multi-faceted construct, which is not always specified clearly in the literature.
- Some sources focus on one aspect of social communication, but may exclude other characteristics from the overall concept of social communication.
- Overall, themes showed terms were used interchangeably to represent both conceptual and observable characteristics of social communication.
- Conceptual map of the construct of social communication is our attempt to illustrate the initial relationship between concepts of social communication; this will continue to be refined with subsequent analyses.

Future Directions
- Search procedure will be replicated using additional “social” terms to understand their relationship with social communication.
- Book reviews, internet sites of key ASD stakeholders, and further consultations with stakeholders will occur to shape themes and the emerging model.
- Standardized assessment items (Theme 1) are being linked to the WHO ICF-CY5 framework to consider possible components of social communication.
- Functional implications of the various definitions of social communication will be analyzed. This work will support the emergence of a unifying model to be used for the development of a function-based understanding of social communication to create a classification tool of ASD functioning.

References: