Methodology: Systematic Review and Meta-analysis of the AAC Literature for People with Autism Spectrum Disorder or Intellectual Disabilities who have Complex Communication Needs through 2020

Appendix B

Title and Abstract Inclusion/Exclusion Coding Sheet

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Authors Contribution Statements using Contribution Roles Taxonomy (CRediT)

Authors were listed alphabetical order by tier with an explanation of the contributions that are indicated for each tier by using CRediT (Allen et al., 2019).

Tier 1: Ganz, Pustejovsky, Reichle, Vannest (Principal Investigators)

Tier 2: Pierson, Wattanawongwan (Project staff)

Tier 3: Chen, Foster, Fuller, Haas, Hamilton, Sallese, Smith, Yllades (Additional staff or investigators who contributed substantively)

Jay B. Ganz: Conceptualization (lead); formal analysis (supporting); funding acquisition (lead); investigation (supporting); methodology (lead); project administration and supervision (lead); writing - original draft preparation (lead); writing - review and editing (lead).

James E. Pustejovsky: Conceptualization (supporting); data curation (equal); formal analysis (lead); funding acquisition (equal); investigation (supporting); methodology (equal); project administration and supervision (equal); resources (equal); software (lead); visualization (lead); writing - original draft preparation (supporting); writing - review and editing (equal).

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### Appendix B

**Title and Abstract Inclusion/Exclusion Coding Sheet**

<table>
<thead>
<tr>
<th>Variable</th>
<th>(1) Interventions</th>
<th>(2) Participants</th>
<th>(3) Outcomes</th>
<th>(4) Study designs</th>
<th>(5) Language</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Code</strong></td>
<td>+wrong drug</td>
<td>+wrong pop type</td>
<td>+wrong outcome</td>
<td>+wrong study design</td>
<td>+foreign language</td>
</tr>
<tr>
<td><strong>Description</strong></td>
<td>Studies must report the results of an augmentative and alternative communication (AAC) intervention. AAC includes both unaided (e.g., natural gesture, manual sign, sign language) and aided systems (e.g., from low- to high-tech applications) to supplement or replace conventional speech for people with complex communication needs (CCN). We will include manual sign language, low-tech (e.g., picture-point, exchange-based, picture exchange), high-tech (e.g., speech-generating device[SGDs, ], voice output communication aid[VOCA], tablet-computer AAC apps), and use of multimodal approaches (more than one communication mode). Display types</td>
<td>One or more participants with, or instructor providing instruction to a person with an intellectual and developmental disability (IDD), such as autism spectrum disorder (ASD), intellectual disability (ID), or other developmental disabilities (DD: e.g. Down syndrome) who have co-occurring complex communication needs (e.g., minimally- or non-verbal), mental retardation, cognitive disability, severe and profound.</td>
<td>Social-communicative and/or challenging behavior outcomes. Communication behaviors dept. Measure(s) include AAC (e.g., speech-output, vocal output and/or AAC), (including word approximations). Note: unaided includes natural gestures that may be accompanied by related body movements and facial expression. Communication focused on and involving involving academic subjects should be included</td>
<td>a single-case experimental designs (SCED) or between-groups design. Communication focused on and involving involving academic subjects should be included</td>
<td>(single-case experimental designs demonstrating 3 or more replications to demonstrate effect: multiple baseline, multiple probe, withdrawal/reversal, multielement/alternating treatment with a baseline phase, and the abovementioned embedded within others).</td>
</tr>
<tr>
<td>Include visual scene and/or grid displays</td>
<td>feasibility/acceptability), include</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Include functional communication training (FCT), mention of functional communication training/intervention; include mention of intervention for complex communication needs (CCN).</td>
<td>Challenging behaviors whose function is to mediate the actions of others and will include behavioral forms such as tantrums, repetitive speech/echolalia, physical aggression, screaming, and other disruptive behavior.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Exclusion

| Approaches to AAC that have been thoroughly discredited in the literature (e.g., facilitated communication, rapid prompting method, supported typing) will be excluded. Interventions that do not supplement or replace conventional speech. | Includes no participants with IDD who have complex communication needs; or Participant’s data cannot be disaggregated from the excluded participants. | Exclude Studies that involved only interaction with a computer and no human-to-human interaction |
| For example, use of a tablet-based app is not AAC if only used as a teaching tool, but not to provide a means of communication to supplement or replace speech | Other than SCED/between-group. | No social-communicative and/or challenging behavior outcomes addressed in the study. |
| Intervention to establish an activity schedule, visual | |

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**APPENDIX B: TITLE/ABSTRACT CODING SHEET**
schedule, or task analysis with no apparent AAC applicability.