EMT for children with ASD: An international replication

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Overview of SA context and services for children with ASD

- Exact prevalence data for ASD in South Africa not well established likely to be similar to rest of the world.
- One big difference b/t LMIC and HIC is access to services.
- Approximately 85% of SA population has to access services in the public health sector.
- There is +/-135 000 children with ASD not receiving the specialized intervention services that they need (Bateman, 2013).
Overview of context in Western Cape and services for children with ASD

• Only 2 special schools in the Western Cape Province and approximately 5 specialized units within other full service/special schools.
• Within the Western Cape, there is a waiting list of over 500 (4yrs+) diagnosed with ASD who require intervention supports.
• There are roughly an additional 10 children diagnosed with ASD per week.
• On average, children will wait at least two years for school placement.
What is EMT?

- Enhanced Milieu Teaching (EMT) is a naturalistic language intervention which promotes functional use of new language in the context of every day interaction with competent role models (Kaiser & Trent, 2007).
EMT strategies

- Following the child’s lead
- Taking turns in play and conversation
- Contingent responding
- Expansions of the child’s language
- Modeling of specific language targets
- Eliciting and prompting strategies for teaching new language (Kaiser & Trent, 2007).
Video of EMT
The value of EMT

• Over 50 studies have demonstrated the effectiveness of EMT with children
  – from diverse racial and economic backgrounds
  – With a variety of language delays and disabilities (Kaiser & Trent, 2007; Hancock & Kaiser, 2012).

• EMT is effective, when implemented by parents, teachers and other professionals (Roberts et al., 2014).
Study aims

• We set out to answer the following research question in this study:
  – Does the introduction of enhanced milieu teaching (EMT) improve the spoken language performance of young children with an ASD?

• Spoken language performance was determined by:
  – the child’s number of different words
  – the child’s total number of spontaneous communicative utterances
Project design

• The project used a multiple baseline across participants design (Gast, 2010).
• Data is collected repeatedly before, during and after the intervention and visually plotted on a graph to display changes in each participant’s behavior relative to themselves.
• If the intervention brings about a positive change in the dependent variables across all of the participants the researcher is able to infer that the intervention is effective.
Participants

<table>
<thead>
<tr>
<th></th>
<th>P1</th>
<th>P2</th>
<th>P3</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age at study onset</strong></td>
<td>7,2</td>
<td>5,11</td>
<td>7,9</td>
</tr>
<tr>
<td><strong>Gender</strong></td>
<td>Male</td>
<td>Male</td>
<td>Male</td>
</tr>
<tr>
<td><strong>Number of siblings</strong></td>
<td>2</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td><strong>Ethnicity</strong></td>
<td>Black African</td>
<td>Indian</td>
<td>Indian</td>
</tr>
<tr>
<td><strong>CARS</strong></td>
<td>40</td>
<td>34</td>
<td>32.5</td>
</tr>
<tr>
<td><strong>PLS 4 Receptive (Raw scores)</strong></td>
<td>24</td>
<td>33</td>
<td>29</td>
</tr>
<tr>
<td><strong>PLS 4 Expressive (Raw scores)</strong></td>
<td>30</td>
<td>30</td>
<td>30</td>
</tr>
<tr>
<td><strong>Other interventions concurrent with the study</strong></td>
<td>Speech and OT (30 mins/week)</td>
<td>Speech and OT (30 mins/week)</td>
<td>Speech and OT (30 mins/week)</td>
</tr>
</tbody>
</table>
Multiple Baseline Example

Sessions
Visual Analysis

• Stable baseline
  – Minimal variability
  – No increasing trend
  – Low rates

• Establish an effect in intervention
  – Increasing trend
  – An increase in level
  – Increased variability
Primary outcome data: number of different words

![Graph showing changes in number of different words over sessions for three participants.](image-url)
## Cumulative number of Different Words

<table>
<thead>
<tr>
<th>Participant</th>
<th>Baseline</th>
<th>Intervention</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participant 1</td>
<td>23</td>
<td>101</td>
</tr>
<tr>
<td>Participant 2</td>
<td>45</td>
<td>89</td>
</tr>
<tr>
<td>Participant 3</td>
<td>48</td>
<td>121</td>
</tr>
</tbody>
</table>
Secondary outcome data: Spontaneous communicative utterances

![Graphs showing data for different participants over sessions. Each graph plots the number of spontaneous unprompted utterances against the number of sessions. The graphs are labeled with the names of the participants: Participant 1, Participant 2, and Participant 3. The y-axis represents the number of utterances, ranging from 0 to 30, and the x-axis represents the number of sessions, ranging from 5 to 60. The baseline and intervention phases are indicated on the graphs. The graphs show variations in the number of utterances across sessions for each participant.]
Parent beliefs

Important of intervention goals

1. I believe my child's language learning is a high priority.
2. It is important that my child can tell me his wants and needs.
3. It is important that my child can tell me things that interest him.
4. I want my child to initiate communication to me more frequently.
5. I would recommend this intervention to a friend who was concerned.

Acceptability of strategies

6. I believe that play is an appropriate time to teach language.
7. I believe that the intervention my child completed was worthwhile.
8. I want my child to continue receiving this intervention twice a week at school.
9. I want to learn how to use this intervention with my child at home.

Outcomes are meaningful

10. This intervention has helped my child's communication skills.
11. It is easier now for my child to tell me his wants and needs.
12. It is easier now for my child to tell me things that interest him.
13. I believe that this treatment helped my child to better control his or her behavior.
14. Once therapy began, I believe that my child's difficulties reduced.
15. I believe this treatment was valuable in treating my child.
What is EMT’s value in low resourced settings?

- EMT is a good example of the consultative service delivery model, as proposed by Moonsamy (2015).
- The role of the health care professional (SLT) would therefore shift from direct agent of change to consultant and collaborator (Moonsamy, 2015).
- Benefits to professionals: EMT makes efficient use of the limited resources by training others to implement EMT outside of school and clinic context.
- Benefits to families: Training parents or community workers to support children with an ASD, allows for families to access to intervention at a higher dosage than the family may otherwise be afforded.
Some potential next steps?

• Looking at training parents to implement EMT
• Understand the challenges that parents may face to implement EMT:
  – *contextual factors* (access to homes in the community; transport costs to clinic/schools for sessions)
  – *language factors* (the mismatch between therapist’s language and that spoken by families; appropriate early language targets for SA languages)
  – *cultural factors* (acceptability and ease of using play as a vehicle to teach language; identification of home routines within the SA context)
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References

References

