Implementation Outcomes of a Social Intervention for Children with Autism in Public Schools

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Center for School Mental Health 2017
Playground Engagement

(Locke, Shih, Kretzmann, & Kasari, 2015)

![Playground Observation of Peer Engagement](image)

- **Percentage of Total Time Observed**
- **Categories**:
  - Peer
  - ASD
  - Joint Engagement/Games with Rules
  - Solitary
Social Network Inclusion

(Rotheram-Fuller, Kasari, Chamberlain, & Locke, 2010)

- Typical Peers
- Children with ASD

*p < .05
Importance of Working with Schools

- Interventions have largely been delivered in clinical and university-based settings
- Conducting research in partnership with schools
- Increases relevance to the setting, use of the intervention, positive outcomes for students
- Limits generalization and sustainment
Research to practice?

The 17-year odyssey

Priorities for research funding
Peer review of grants
Publication priorities and peer review
Research synthesis
Guidelines for evidence-based practice
Practice
Funding; population needs, demands; local practice circumstances; professional discretion; credibility and fit of the evidence.

Annu. Rev. Public Health. 30:151–74
Leaky Pipeline

- Few evidence based interventions ever make it to practice (Dingfelder & Mandell, 2011)
Barriers to Implementation

(Locke, Olsen, Wideman, Downey, Kretzmann, Kasari, & Mandell, 2015)
Pebbles, Rocks, and Boulders

( Locke, Wolk, Harker, Olsen, Shingledecker, Barg, Mandell, & Beidas, submitted)

- General implementation of evidence-based practices
  - Implementation Process, Staffing, Leadership, Support

- Specific to social engagement intervention
  - Staffing, Barriers, Facilitators
“I believe people fall into three categories: pebbles, rocks, and boulders. The pebbles are the “yes” people. They will walk over broken glass or fire to do whatever it is they have to do to get the job or keep the job because they ultimately love the job. The rocks are the people who will sit back and take pause, ask intelligent questions, poke holes in a theory, and question the new curriculum. And the boulders are the people who are not going to move.”
Current Study

- Stepped-wedge design
- Schools randomized to Remaking Recess with or without implementation support
  - Remaking Recess – 12 sessions during recess (30-45 minutes each)
  - Remaking Recess with Implementation Support – 12 sessions during recess plus three sessions with principals and key stakeholders
Remaking Recess (Kretzmann, Locke, Kasari, 2012)

School-based social engagement intervention to train staff during the recess period to facilitate social opportunities for children
Coaching

Didactic → Model → Feedback
A refined compilation of implementation strategies: results from the Expert Recommendations for Implementing Change (ERIC) project

Byron J Powell, Thomas J Waltz, Matthew J Chinman, Laura J Damschroder, Jeffrey L Smith, Monica M Matthieu, Enola K Proctor and JoAnn E Kirchner

Implementation strategy is a “method or technique used to enhance the adoption, implementation, and sustainability of a clinical program or practice” – Proctor, Powell, & McMillen (2013), p.2
Implementation Strategy

Identify and prepare champions

Tailor strategies
Implementation Support

- 3 Consultation Sessions
  - scheduling staffing during recess
  - building internal capacity
  - amending school-wide policies for recess
  - providing tangible support and resources
  - improving implementation climate
  - adapting and modifying the intervention to fit the needs of the school
  - embedding Remaking Recess within the school culture
Recruitment

Consort chart

School Districts Screened (n = 27)

Schools Screened (n = 55)

Schools Randomized (n = 12)

Baseline1, Baseline2, Exit, 6-week Follow-up

Schools with Remaking Recess Only (n = 6)
- School personnel (n = 13)
- Children with autism (n = 14)

Schools with Remaking Recess plus Implementation Support (n = 6)
- School personnel (n = 15)
- Children with autism (n = 17)
<table>
<thead>
<tr>
<th>Child Characteristics</th>
<th>Remaking Recess (Total N = 14)</th>
<th>Remaking Recess with Implementation Support (Total N = 17)</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>N</td>
<td>Mean/%</td>
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<tr>
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<td>Male</td>
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<td>100</td>
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<tr>
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<tr>
<td>White</td>
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<tr>
<td>Black</td>
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<td>Fifth grade</td>
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<td>School-Personnel Characteristics</td>
<td>Remaking Recess (Total N = 13)</td>
<td>Remaking Recess with Implementation Support (Total N = 16)</td>
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<tr>
<td></td>
<td>N</td>
<td>Mean/%</td>
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<tr>
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<tr>
<td>Gender</td>
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<tr>
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<tr>
<td>Teacher</td>
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<td>Other school personnel</td>
<td>10</td>
<td>76.9</td>
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</table>
Implementation Outcomes

- There were no differences between the groups


Acceptability

Implementation Climate

Adapted from Program Implementation Climate Scales (Dingfelder, 2012)
EBPAS Results

EBPAS:

- Appeal
- Requirements
- Openness
- Divergence

Self-Rated Fidelity

EBPAS Requirements predicted Self Rated Fidelity \((F=5.08, p<0.03)\)

Acceptability and Implementation
Climate did not predict fidelity
Organizational Readiness for Change

- Individual Factors
  - Staff Attributes
- Organizational Climate
  - Mission, Autonomy, Stress, Cohesion, Communication, Change

(Lehman, 2002)
## ORC Results

<table>
<thead>
<tr>
<th>Rater</th>
<th>Domain</th>
<th>Fidelity</th>
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<tr>
<td>Staff</td>
<td>Staffing</td>
<td>↑</td>
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<tr>
<td>Staff</td>
<td>Individual Growth</td>
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<tr>
<td>Staff</td>
<td>Organizational Adaptability</td>
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</table>
Implementation Fidelity

- Use and Quality of Intervention Delivery

Observer → Self-Report → Coach-Rated

Baseline 1, Baseline 2, Exit, 6-week Follow-Up

Each Week
Implementation Fidelity

Schools did not use any aspect of Remaking Recess prior to receipt of training

Fidelity increased over the six-week training and follow-up periods

Overall use and quality of intervention delivery was low
Discussion

Implementation fidelity is low

Individual-level factors may affect implementation in schools more strongly than organizational factors

District and school mandates to use EBPs may result in lower implementation

Teachers/staff ratings may be more proximal to understanding EBP implementation than principals
Child Outcomes

- Playground engagement
- Friendship
- Social network inclusion
Independent observers:
- Conducted observations: baseline1, baseline2, exit, follow-up

Timed interval behavior coding system

Engagement states
- Solitary and joint engagement

Playground Observation of Peer Engagement

<table>
<thead>
<tr>
<th>Int</th>
<th>State</th>
<th>Chi Initiations</th>
<th>Chi Responses</th>
<th>Comments (note affect, activity, atypical behavior, who the child engages with (aide, adult, peers) and anything of importance or interest)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Gen = I, Peer R = +, Peer NR = -</td>
<td>App Res = + Miss opp = -</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
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</tr>
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</table>

(Kasari, Rotheram-Fuller, & Locke, 2005)
Solitary Engagement

![Graph showing Solitary Engagement over time](image)

**Time Point**
- Baseline 1
- Baseline 2
- Exit
- Follow-up

**Legend**
- Yellow line: Remaking Recess Only
- Blue line: Remaking Recess with Implementation Support
Joint Engagement

- Remaking Recess Only
- Remaking Recess with Implementation Support
FRIENDSHIPS SURVEY

What is your name? _____________ Date: __________
School Name: _________________ Teacher Name: ________
Birthday: _____________________

Are you a BOY or a GIRL? (circle one)

1. Are there any kids in your class that you like to hang out with?
   Who are they? (Use first names only; plus last initial if needed)

2. Circle the names of the 3 kids you most like to hang out with.

3. Put a STAR * next to the name of the ONE kid you most like to hang out with.

4. Are there any kids in your class that you don't like to hang out with?
   Who are they? (Use first names only; plus last initial if needed)

5. Are there kids in your class who like to hang out together?
   Who are they?

Remember to think about Boys and Girls!

Remember to put yourself if you hang out with a group!

Draw a CIRCLE around each group!

Information We Get:

Friendship Nominations

Social Network Inclusion
Received Friendship Nominations

![Graph showing Friendship Nominations over Time Points]

- **Baseline 1**: Remaking Recess Only
- **Baseline 2**: Remaking Recess with Implementation Support
- **Exit**
- **Follow-up**

- Y-axis: Friendship Nominations
- X-axis: Time Point

The graph illustrates the comparison between Remaking Recess Only and Remaking Recess with Implementation Support across different time points, showing trends and changes in friendship nominations.
Social Network Inclusion

![Graph showing Social Network Inclusion over time points: Baseline1, Baseline2, Exit, Follow-up. The graph compares Remaking Recess Only and Remaking Recess with Implementation Support. The blue line represents Remaking Recess with Implementation Support, increasing from Baseline1 to Exit and then decreasing at Follow-up. The yellow line represents Remaking Recess Only, remaining relatively stable throughout the time points.]
Baseline 1 Social Network

Isolates: Posey (0), Bob (0), Annie (0), Chester (0)
Follow Up Social Network

Kevin (9) — 8.5 — Dan (8)

Posey (6) — 7.5 — Annie (9) — 8 — Sammy (7)

Lenny (7) — 8 — Sammy (7)

Bob (4) — 12 — Steve (12) — 12 — David (12)

Julie (9) — 10.5 — Cara (11) — 5.5 — Erica (5)

Colleen (10) — 10.5 — Chester (6)

Fred (6) — 6.5 — Brad (7)

Megan (9) — 10 — Wendy (9)

Cheryl (10) — 11 — Tina (12)

Johnny (12) ***

Nuclear
Discussion

- Remaking Recess improves peer engagement
- Remaking Recess may be necessary but not sufficient in improving friendship nominations and social network inclusion
- Implementation support may be needed
  - May change the classroom context and complement the ways in which Remaking Recess changes the playground context
Thank You!

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Determinants of Practice

- Factors that obstruct or enable changes in targeted professional behaviors or healthcare delivery processes.

Krause et al., 2014
The effects of deliberate and purposive actions to implement new treatments, practices, and services.

**Implementation outcomes**
- Acceptability
- Adoption
- Appropriateness
- Costs
- Feasibility
- Fidelity
- Penetration
- Sustainability

**Service outcomes**
- Efficiency
- Safety
- Effectiveness
- Equity
- Patient-centeredness
- Timeliness

**Client outcomes**
- Satisfaction
- Function
- Symptomatology

Proctor et al., 2011
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<th>Implementation Outcome</th>
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<tr>
<td><strong>Turnover</strong></td>
<td><strong>Use Train the Trainer Strategies</strong></td>
<td><strong>Sustainability</strong></td>
</tr>
<tr>
<td></td>
<td><em>Train designated school personnel to train others in new practices.</em></td>
<td></td>
</tr>
<tr>
<td><strong>Provider views EBP unfavorably</strong></td>
<td><strong>Audit and Provide Feedback</strong></td>
<td><strong>Adoption</strong></td>
</tr>
<tr>
<td>OR</td>
<td><strong>Collect and summarize data regarding implementation of the new program or practice over a specified time period and give it to administrators and school personnel to monitor, evaluate, and support implementer behavior.</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Provider habit (forgets to use EBP)</strong></td>
<td></td>
<td><strong>Penetration</strong></td>
</tr>
</tbody>
</table>
### Individual, School, District Levels

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**Implementation outcomes:**

- Acceptability
- Adoption
- Appropriateness
- Costs
- Feasibility
- Fidelity
- Penetration
- Sustainability
- Fidelity