Rigorous, Responsive, & Responsible: Intervention Research with Children in Urban School Community-Contexts

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INTERVENTION RESEARCH MODEL

THEORETICAL & EMPIRICAL FRAME
- Target group/context
- Intervention content, structure, delivery
- Evaluation methods

SUMMATIVE RESEARCH
- What works?
- For whom?
- How? Under what conditions?

FOCUS FOR TODAY

FORMATIVE RESEARCH
- Intervention development & adaptation
- Mixed method, multi-informant, iterative
SUMMATIVE RESEARCH INTERVENTION STAGE

Efficacy Effectiveness "Dissemination"

- "Controlled" (RCT)
- "Real world" (RCT or quasi-experiment)
- "Scaling up" or "transporting" to systems/structures: adoption, implementation, sustainability (various designs)

*** Hybrid models + theory-based evaluation design

Flay et al., 2005; Mrazek & Haggerty, 1994; Birckmayer & Weiss, 2000; Atkins et al., 2007
Underlying Premises of my Research

- Ground it in real kids who live in families, classrooms, schools, and neighborhoods

- Consider the entire continuum of intervention from promotion/prevention to treatment

- Methodological rigor must be matched by the responsiveness and responsibility of the intervention design and evaluation methods

*Know your/my limits and what you/I don’t know*
Developmental-Ecological Theory
(+ Community Psychology Principles)

Bronfenbrenner & Morris, 1998
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*Know your/my limits and what you/I don’t know*
Intervention Continuum (Public Health)

- **Universal**: Programs designed to reach all children/settings and provide a base for positive health and development.
- **Targeted**: Programs that target children/settings with early signs of difficulty or who may be at risk for later problems.
- **Intensive**: Programs designed to impact children/settings with intensive needs beyond what will be impacted by universal or targeted efforts.

Nastasi, 2004; Weist, 2005
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*Know your/my limits and what you/I don’t know*
The Three Rs

Rigor

- inappropriate/inadequate methods
- appropriate/sound methods

Responsiveness

- university-oriented; irrelevant
- community-oriented; relevant

Responsibility

- lacking theoretical/ethical grounding
- theoretically- and ethically-grounded

Cappella, Massetti, & Yampolsky, in press
Underlying Premises of my Research

- Ground it in **real kids** who live in **families**, **classrooms**, **schools**, and **neighborhoods**

- Consider the entire continuum of intervention from **promotion/prevention** to **treatment**

- Methodological **rigor** must be matched by the **responsiveness** and **responsibility** of the intervention design and evaluation methods

*Know your (my) limits and what you (I) don’t know*
“We have a smile on our face, but inside we think they’re mean. If you say something to them, they could tell a lot of people and then no one will be your friend.”

**Social Relationships Program (SRP)**

Targeted peer group program to prevent social aggression (i.e., nasty rumors, malicious exclusion) and resolve conflicts

**Targeted:**
- Content (social aggression)
- Population (5th grade girls)
- Outcomes (cognitive & behavioral)

**Guided by:**
- Empirical studies
- Theoretical models
- Formative research
SRP:
Program Development & Evaluation

Theoretical & Empirical Frame
- Gender/Age Prevalence
- Correlates & Functions
- Social Learning Theory
- Social Interactional Theory
- Evaluation Theory

Evaluation Study
- Random Assignment
- Wide Sampling
- Comparison Program
- Multiple Reporters
- Mixed Method

Formative Research
- Principal Interviews
- Teacher Interviews
- Student Interviews
- Pilot Study

Cappella & Weinstein, 2006
## Empirical Frame: SRP Structure & Content

<table>
<thead>
<tr>
<th>Research</th>
<th>SRP</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Importance of broader peer group to outcome</td>
<td>• Focus on <em>multiple perspectives</em> of peers within social conflicts</td>
</tr>
<tr>
<td>• Gender and age differences in prevalence and experience</td>
<td>• Target <em>female</em> 5\textsuperscript{th} grade students in <em>within-gender</em> groups</td>
</tr>
<tr>
<td>• Emerging understanding of correlates and functions</td>
<td>• Curriculum content focuses on…</td>
</tr>
<tr>
<td>▫ Empathy</td>
<td>▫ Empathic understanding</td>
</tr>
<tr>
<td>▫ Social information processing</td>
<td>▫ Social problem-solving</td>
</tr>
<tr>
<td>▫ Instrumental and reactive social aggression</td>
<td>▫ Both instrumental and reactive social aggression</td>
</tr>
</tbody>
</table>

Crick, 1995; Dodge & Coie, 1987; French et al., 2002; Paquette & Underwood, 1999; Pepler & Craig, 1995; Rys & Bear, 1997; Underwood, 2003; Xie et al., 2002; 2003
Theoretical Frame: SRP Structure

Social Interactional Theory

- Paquette & Underwood, 1999
- Grotpeter & Crick, 1996
- Craig & Pepler, 2000
- Xie et al., 2002

Social Learning Theory

- Bandura, 1973
- Huesmann & Eron, 1984
- Craig, Pepler, & Atlas, 2000

School

Peers

Within-Gender
Theoretical & Empirical Frame: SRP Content

ABCD Model of Development (encompasses multiple theories)

- Emotional Awareness
- Cognitive Understanding
- Behavioral Skills

PATHS; Greenberg & Kusché, 1993; Greenberg et al., 1995
SRP:
Program
Development &
Evaluation

Theoretical &
Empirical Frame
Demographic
Contextual
Correlates & Functions
Social Learning Theory
Social Interactional Theory
Evaluation Theory

Summative Research
Random Assignment
Wide Sampling
Comparison Program
Multiple Reporters
Mixed Method

Formative Research
Principal Interviews
Teacher Interviews
Student Interviews
Pilot Study
Evaluation Design

- Random assignment + wide sampling
- Comparison program: *Reading Club (RC)*
  - Matched SRP in structure, not content
  - Allowed study of curriculum content
  - Designed to advance reading skills
- Multiple reporters (teachers, peers, self)
- Mixed method (quantitative, qualitative)
- Short-term longitudinal (fall, spring)
- Outcome and fidelity measurement

Cappella & Weinstein, 2006
## Participants

<table>
<thead>
<tr>
<th>N = 134 female students</th>
<th>Urban fringe, northern CA</th>
</tr>
</thead>
<tbody>
<tr>
<td>▫ SRP = 70</td>
<td>1 public school district</td>
</tr>
<tr>
<td>▫ RC = 64</td>
<td>6 elementary schools</td>
</tr>
</tbody>
</table>

Ethnically diverse

- Caucasian 26.1%
- African-American 25.4%
- Latina 23.9%
- Asian 18.7%
- Other 6.0%

Average age = 10.5 years old

- Average school size 476
- 13 teachers
  - Average class size 30
  - 5th grade or combined 4/5, 5/6

Low-middle income families

- 37% free/reduced price lunch
Measures

*Demographic*: Student and School-Level

*Wechsler Individual Achievement Test (WIAT)*: Basic Reading Subtest

*Fidelity Measures*: Weekly Session Summary + Group Experience Form

*Social Aggression Problem-Solving Scenarios*

- Hypothetical scenarios from multiple perspectives within relational conflict
- "What do you say or do?" Responses recorded verbatim; Coding manual: Prosocial/ Assertive (+1); Neutral/Unsophisticated (0); Antisocial/Aggressive (-1)
- Adequate interrater reliability (Cohen’s kappa = .75-.83)

*Children’s Social Behavior Scale – Revised*

- Peer-report & Teacher-report
- Aggression Perpetration (Relational & Overt) & Prosocial Behavior
- Continuous data: Frequency with which child used behavior

*Empathic Behavior Scale – Short Form*

- Teacher-report

The Psychological Corporation, 1992; Galen & Underwood, 1997; Lochman & Dodge, 1994
Highlights of Results

- Implementation quality high
- Overall program impact on social problem solving from multiple perspectives (victim & follower)
- Program impact on teacher-reported prosocial behaviors for students with high social problems at the start
- Curriculum content important: RC participants improved reading achievement at higher rates than SRP participants

*No significant findings for peer report social behaviors or teacher report social aggression perpetration
Quality of Social Problem-Solving: Victim and Follower Perspectives

Bar chart showing adjusted mean quality of strategy for different scenarios:
- Victim: Gossip
- Follower: Exclusion
- Follower: Gossip

Key:
- SRP: Yellow bars
- RC: Green bars

Significance levels:
- p<.01; d=.62
- p<.05; d=.40
- p<.05; d=.42
Quality of Social Problem-Solving: Perpetrator Perspective (Students with High Baseline Social Problems)

Adjusted Mean Quality of Strategy

p<.05; d=.90

Potential Perpetrator Perspective
Teacher-Reported Empathic and Social Behaviors:
(Students with High Baseline Social Problems)

Empathy and Social Behaviors

Empathic Behaviors

Prosocial Behaviors

SA Perpetration

Adjusted Mean Teacher Rating

p<.10; d=.60
p<.05; d=.62
p<.10; d=.29

SRP
RC
Discussion

1. Impact on *Positive* Social Behaviors
   - Matched emphases in program curriculum
   - Easier to add prosocial strategies than remove antisocial ones?
   - Need intervention components at multiple levels

2. Discrepancy by Reporter (Teacher & Peer)
   - Different contexts in which behavior is observed
   - Different definitions of behaviors
   - Power of reputation among peers

3. Cognitive versus Behavioral Change
   - Emphasized in program
   - Self-report measure
   - Cognitive change may precede behavioral change

CPPRG, 1999; Greenberg et al., 2003; Webster-Stratton & Hammond, 2003; Gregory & Cappella, 2008; Greenberg & Kusché, 1993; Stevahn, Johnson, Johnson, Oberle, & Wahl, 2000
SRP In Sum

**CURRENT PROGRAM:**

1. Systematic process of developing and studying a targeted, small scale program in schools
2. Focus on peer group and multiple perspectives within girls’ social conflicts
3. Impact on social problem solving and prosocial behaviors, particularly among those with social problems at the start

**NEXT STEPS:**

1. Sustainable integration of intervention into broader multi-level programs in schools
2. Contextual-level analyses: Peer social networks and classroom climate
Where Does This Intervention Study Fall?

Efficacy

Effectiveness

“Dissemination”

Family

Peers

School/Class

Child

Intervention Continuum

Universal

Targeted
Links to Learning (L2L)

New mental health service model bridging …

- Prevention and treatment in schools
- Achievement and mental health
- School and community

… focused on …

- Academically struggling schools in high poverty urban neighborhoods
- Sustainable mental health services

Cappella, Frazier, Atkins, Schoenwald, & Glisson, 2008
Need for New Model

- Schools are de facto providers of social services for youth (provide 70-80% of psychosocial services); Teachers as unacknowledged mental health providers
- Unmet psychosocial needs of children and families overwhelm the resources of schools and undermine their capacity to educate children
- Few mental health service models are effective, sustainable, and integrated into high poverty school settings
- Prevention program implementation is often inconsistent, treatment remains separate, and the business of schools – learning – is not the primary goal

Burns et al., 1995; Rones & Hoagwood, 2000; Foster et al., 2005
Schools as a Context for Mental Health

Academic achievement linked with:

- Enhanced sense of competence or self-concept
- Social emotional adjustment
- Supportive relationships with peers, teachers, parents

Particular instructional strategies predict mental health:

- Individual or class-wide tutoring promotes learning and social-emotional outcomes
- Peer assisted learning approaches can improve time on task and social competence

Rohrbach et al., 2003; Roesser & Eccles, 2000; DuPaul & Eckert, 1998
Links to Learning (L2L) Overview

- Unite key adults in children’s lives around learning
- Link community mental health providers with teacher leaders and parent advocates to support teachers and parents to promote children’s learning
- Focus on children in grades K-5 in high poverty Chicago Public Schools identified with disruptive behavior disorders
- Compare classroom- and home-based model focused on children’s learning with clinic-based mental health services
- Sustain program through fee-for-service Medicaid billing
Empirical and Theoretical Base

Ecological theory
- Interacting contexts of development
- Focus on natural settings where children live

Public health models
- Universal → targeted → intensive
- In high need settings, prevention is first priority

Diffusion of innovation theory
- Influential peers are instrumental as change agents
- Innovative interventions are initiated by opinion leaders in a social network

Empirically-based predictors of learning
- Classroom = instructional method; classroom management; family outreach; teacher-student relationships
- Home = Communication about learning; Home routines

Bronfenbrenner, 1979; Weist, 2005; Rogers, 1983; Valente & Davis 1999
Links to Learning Intervention Model

Mental Health Providers

Leader Teachers
- Teachers
  - Effective Instruction
  - Classroom Management
  - Family Outreach

Parents
- Communication
- Home Routines
- Academic Support

Parent Advocates

School Behavior

Academic Performance

Home Behavior
L2L Research Design
(NIMH R01MH073749)

- Longitudinal field experiment
  - **3 years**: 2+ year intervention & ½+ year follow-up
  - Random assignment at school level to intervention (L2L) and control conditions (enrolled in clinic services)

- Multi-informant, multi-method
  - **Parents** (child behavior; family stress, support, services, etc.)
  - **Teachers** (child behavior, achievement; work life, climate, etc.)
  - Classroom **observations** (emotional support, instructional support, classroom organization; on- & off-task behavior)
  - **School records** (grades, test scores, attendance, discipline)
  - **Individual assessment** (reading achievement)
  - **Implementation fidelity** (content, quality, dosage)
# Curriculum Content

## Classroom: Predictors of Learning

<table>
<thead>
<tr>
<th>Instructional Method</th>
<th>Classroom Management</th>
<th>Family Outreach</th>
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<tbody>
<tr>
<td><strong>Universal</strong></td>
<td>Peer Tutoring</td>
<td>Good Behavior Game</td>
</tr>
<tr>
<td><strong>Targeted</strong></td>
<td>Individual Tutoring</td>
<td>Self-Monitoring</td>
</tr>
</tbody>
</table>

## Family: Home Environments that Support Learning

1. Communication about Learning (parent-child and parent-teacher)

2. Home Routines that Support Learning
   - Focus on Homework Completion
   - Focus on Reading Development
## Participants

<table>
<thead>
<tr>
<th>N = 170 students</th>
</tr>
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<tbody>
<tr>
<td>▫ L2L = 100</td>
</tr>
<tr>
<td>▫ Control = 70</td>
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African-American = 100%

Free lunch = 100%

All students met criteria by teacher- and/or parent report for 1 or more Disruptive Behavior Disorder (ADHD, ODD, and/or CD)

<table>
<thead>
<tr>
<th>Chicago Public Schools</th>
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<tbody>
<tr>
<td>7 elementary schools</td>
</tr>
<tr>
<td>▫ &lt;33% state reading test scores</td>
</tr>
<tr>
<td>▫ &gt;85% African-American</td>
</tr>
<tr>
<td>▫ High poverty neighborhoods</td>
</tr>
<tr>
<td>▫ Within 1 SD of mean CPS school size</td>
</tr>
</tbody>
</table>

78 K-5th grade teachers

3 Community MH Agencies
Preliminary Findings

- L2L is **feasible** to implement in high poverty schools
- Families and teachers are **satisfied** with support
- Early indications (6 months) that L2L students are **remaining stable or improving slightly** in problem behaviors and academic achievement; *control students are getting worse*

**BUT...** addition of 9 new schools in Cohort 2 interrupted by:

1. ethical issues related to control condition
2. intensity of implementation + cuts in grant budget

Experimental design ➔ Quasi-experimental design
CURRENT PROGRAM:
1. Feasible and sustainable model for delivering mental health services in urban communities
2. Integration of universal (prevention) and targeted (intervention) strategies
3. Focus on learning closes school/agency divide

NEXT STEPS:
1. Impact on students
2. Focus on peers as resources (alongside parent advocates and leader teachers)
3. “Drill deeper” into urban classroom context (see postscript)
Where Does This Study Fit?

Efficacy

Effectiveness

“Dissemination”

Family

Peers

School/Class

Child

Intervention Continuum

Targeted

Universal

Rigor

Responsiveness

Responsibility
Postscript:

Know your limits and what you don’t know

Intervention research in schools:

- Helps us to understand what we do not know (a lot!)
- Provides opportunity for collection of rich data

BUT also:

- Takes a LONG time
Basic Research within Intervention Research

Lead to an interest in:

- Unpacking the dynamic and interacting influence of peers and teachers in children’s classroom experiences

- Utilizing measurement and analytic advances to gain a more precise and accurate assessment of classroom social, emotional, and instructional processes that relate to child outcomes
Intervention Research Sub-Study: Measurement Innovation

**Classroom Observation**
(teacher-driven emotional & instructional environment)

**Peer Sociometric Nominations**
(student social & academic characteristics)

**Social Network Methods**
(student-driven classroom social relationships)

Assess association between teacher-led classroom interactions and characteristics of students positioned across classroom social system.
Measures: Social Networks

**Cognitive Social Structures** (Krackhardt, 1987; Neal, 2008)

Assesses presence or absence of relational tie: “Who does _____ hang out with often?”

1. **Individual data symmetrized** (Borgatti et al., 2002)
   - Average value of report of tie from Rob to Kiara & Kiara to Rob

2. **Whole class data aggregated using binomial test**
   - # of respondents needed to endorse a tie to exceed random chance (considers total # of respondents in each classroom and underlying probability of any child endorsing any tie)

3. **Normed network degree centrality**
   - Percentage of students in the classroom with whom an individual child spends time (between 0-100)
Measures: Peer Nominations

- Unlimited nominations
- Items developed and tested previously
- Positive descriptors (focus for this study)
- Standardized by classroom

**Prosocial Behavior** (Crick & Grotpeter, 1995)
- 3 items: e.g., “Who says or does nice things for other classmates?” (α = .85)

**Academic Orientation** (Lease et al., 2002)
- 2 items: e.g., “Who tries hard to do good school work?” (α = .77)
Measures: CLASS (Pianta et al., 2007)

- 2-hour observations by researchers trained to reliability
- Morning literacy instruction
- Scores averaged across 4 recording periods (scale from 1-7)

**Emotional Support** ($\alpha = .85$)
- Positive Climate
- Negative Climate
- Teacher Sensitivity
- Regard for Student Perspectives

**Classroom Organization** ($\alpha = .84$)
- Behavior Management
- Productivity
- Instructional Learning Formats

**Instructional Support** ($\alpha = .91$)
- Concept Development
- Quality of Feedback
- Language Modeling
KEY:
- Girls
- Boys
- Prosocial Behavior
- Academically Oriented Behavior
- Low Prosocial Behavior
- Low Academically Oriented Behavior
- Relational Aggressive Behavior
- Overt Aggressive Behavior
- Victim of Aggression

Teacher ID: 5008
Classroom: 2nd Grade
CLASS Dimensions:
- Low Emotional Support (3.69)
- Classroom Organization (3.75)
- Instructional Support (2.16)
Conclusions

• Maximize rigor, responsiveness, and responsibility while maintaining patience as we strive to reach that goal

• No intervention is all things to all people

• When intervention is grounded in theory, research, and real lives, studies produce both fundamental and applied knowledge

• Beyond knowledge, intervention research provides support to people and settings that can make a meaningful difference in their lives
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