Problem-solving Intervention for Caregivers of Children with Mental Health Problems

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About 1 out of 5 children in the US have mental health problems, and mothers are usually their primary caregivers
(National Institute of Mental Health, 2001)

Primary caregivers of children with mental health problems have higher levels of burden and/or depressive symptoms compared to caregivers of children without mental health problems
(Duchovic, Gerkensmeyer, & Wu, 2009)
Building Our Solutions & Connections (BOSC) Intervention

The BOSC Intervention is a cognitive-behavioral problem-solving intervention (PSI), adapted from the Improving Mood-Promoting Access to Collaborative Treatment (IMPACT Program)

Figure 1: BOSC Intervention Model
Study Purpose

- To determine the feasibility, acceptability, & preliminary estimates of effect sizes for the Building Our Solutions and Connections (BOSC) intervention when compared to a wait list control (WLC) group
Study Hypotheses

a) At least 75% would complete at least 7 of the 9 PSI

b) Satisfaction ratings of the BOSC PSI would be at least 3.0 on a 4-point scale for 80% of participants
Study Hypotheses

c) Compared to the WLC group, BOSC participants would report higher perceived personal control, improved problem-solving attitudes and skills, lower perceived burden, and less depression
Research Design

- An experimental design with an intended randomization of 66 primary caregivers to either the BOSC or WLC group
Intervention Description

- BOSC began with a 1-hour face-to-face training session with their intervener, followed by up to 8 weekly 30 minute telephone interventions
7 Problem-solving Steps

1. Evaluate outcomes from previous week
2. Select & define a problem
3. Establish realistic & achievable goals
4. Generate solution alternatives (brainstorm)
5. Examine pros and cons
6. Evaluate and choose solutions
7. Implement caregiver-selected alternatives
Sample Inclusion Criteria

- Participants:
  - were the primary caregiver of a child between ages 11 and 16 years who received mental health services in the past year
  - lived with the child for at least 20 of the past 24 months
  - were either a biological, adoptive, or foster parent, a relative, or guardian of the child & were ≥ 21 years old
  - met a cut-off score of ≥ 10 on PHQ-9 depression screen and/or ≥ 2.5 on Burden Assessment Scale
Sample Exclusion Criteria

Participants endorsed having been told by a mental health professional that they had schizophrenia, bipolar disorder, substance abuse, or psychosis.
Random Assignment

Randomization was blocked and stratified by

- level of child behavior problems (i.e., >64 vs. ≤64 on CBCL Total Behavior Problems T-score),
- caregiver depression (≥10 vs. ≤10 on PHQ-9) and
- burden (≥2 vs. ≤2 on PES), resulting in 6 strata
Data Collection

- Data collectors were blinded to group assignment

- Data collection for both groups occurred at:
  (a) baseline
  (b) the week after the last of 8 weekly BOSC telephone interventions
  (c) 3 months after BOSC group completed intervention
  (d) 6 months after completing BOSC group intervention
Data collection occurred in stratified randomly assigned cohorts of 2 to 10 primary caregivers.

After the BOSC group completed the 3-month post-intervention data collection in a particular cohort, the WLC group began the intervention.

The WLC group cohorts had follow-up data collection the week after completing the 8 weekly calls and (at the same time) the BOSC group cohort completed a 6-month post-intervention data collection that provided an opportunity to examine if improvements were maintained over time.
Instruments: Measuring Outcomes

(a) Demographics
(b) Child Behavior: CBCL
(c) Personal Control: Pearlin Mastery Scale
(d) Problem Solving: Social Problem Solving Inventory
(e) Depressive Symptoms: Beck Depression Inventory-II
(f) Burden: Parent Experiences Scale
(g) Acceptability of Intervention: Client Satisfaction Questionnaire-9
(h) Process & dosage of BOSC: Interveners’ notes & length and number of telephone calls
Statistical Methods

- Two-sample t-tests, chi-square, & Fisher’s exact tests used to compare demographic, screening & baseline variables between groups and subjects who dropped out prior to DC 3 & those completing study

- ANCOVA used to test for group differences on each outcome variable

- Separate models were fit at DC 2 and DC 3

- Each model adjusted for baseline value of the outcome measure, baseline BDI, PES, Total CBCL, Total SPSI, & Personal Control scores
Partial eta was used to estimate effect size using SPSS

- Small = ≤ .08
- Medium = .09 - .24
- Large = ≥ .25
Results

- 61 participants, 26-69 years; Average age = 42.7
- 97% female (n = 59), 57% Caucasian (n = 35), 39% African American (n = 24), 1% each Pacific Islander (n = 1), and 1% (n = 1) biracial
- Qualification into the study: 36 (59%) high burden, 3 (5%) high depression; 22 (36%) both high burden and depression
- No differences between groups based on
  - Demographics (age, sex, race) or
  - Baseline BDI, PES, Total CBCL, Total SPSI, & Personal Control scores
  - Those who dropped before DC3 & completed study
Results

- **H1**: At least 75% completed at least 7 of 9 PSI
  - **Findings**: BOSC (n = 30); 18 (60%) completed at least 7 of 9 PSI while 8 (of these 18) completed 8 PSI.

- **H2**: Satisfaction ratings of the BOSC PSI would be at least 3.0 on a 4-point scale for 80% of participants.
  - **Findings**: Mean rating at DC 2 or end of 8th PSI = 3.5. 21 (78%) scored at least 3
**Results**

- **H3:** Compared to the WLC group, BOSC participants would report higher perceived personal control, improved problem-solving attitudes and skills, lower perceived burden, and less depression

  - **Findings:** Effect sizes were small at DC2; Effect sizes approached medium for personal control and burden at DC3.
  - No differences between groups at DC1, DC2, and DC3
## Results

### Primary Analyses

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<th>Data Collection 2</th>
<th>Data Collection 3</th>
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<td>(BOSC  n=26; WLC n=28)</td>
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<td>Total SPSI-R:L Raw Score</td>
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Primary Data Analysis

Conclusion:
- PSI has little or no impact on (1) problem solving attitudes and skills or (2) on depression
- PSI may have some potential effect on personal control and burden
Figure based on entire sample (BOSC n=30; WLC n=31)

Parent Experiences Scale/Burden

- BOSC
- Wait-List
Figure based on entire sample (BOSC n=30; WLC n=31)

Pearlin Mastery Scale/personal control
Figure based on entire sample (BOSC n=30; WLC n=31)

Beck Depression Inventory
Figure based on entire sample (BOSC n=30; WLC n=31)

Total SPSI Raw Score
Post Hoc Analysis

Question:
- Were effect sizes different between depressed and non-depressed caregivers (depressed PHQ-9 ≥ 10)

Findings:
- Depressed caregivers had medium to large effect sizes for depression, total problem-solving raw score, and burden
- Non-depressed caregivers had little or no effect size

Conclusion:
- The intervention appears to have the greatest effects on caregivers who were depressed
# Effect Sizes: Depressed and Non-Depressed Caregivers

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<tr>
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<td><strong>.06</strong></td>
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<tr>
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Post-hoc Analyses: Compliers with Depression

- **Question:**
  - What are the effect sizes based on $n = 19$ participants (6 BOSC and 13 WLC) who were both depressed at baseline screening and complied with the protocol (i.e. completed 7 of 9 intervention sessions)

- **Findings:**
  - At DC3, medium effect size for burden (.21) and large effect size for personal control (.59)
  - Effect size for depression approaches medium (.08)

- **Conclusions:**
  - Depression may improve with time and longer treatment duration
  - Efficacy of intervention increased with greater compliance
## Effect sizes: Compliers with Depression

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<td>1.07</td>
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Summary of Findings

- PSI has effect on personal control and burden for depressed caregivers

- Interventions help if participants comply, but highly speculative given the small sample size in this post-hoc analyses

- These findings indicate that the BOSC intervention may be beneficial
Contributions of Study

- Research Implications
  - Further research with a larger sample size is needed to
    - validate current findings
    - Determine who benefits from PSI
    - Determine the role of burden
    - Examine if children benefit

- Practice Implications
  - Even with small sample size, PSI helped caregivers with depression