Effects of Check & Connect
On Attendance, Behavior, and Academics: A Randomized Effectiveness Trial

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An efficacy trial of Check & Connect (C&C) was ongoing at the Meadows Center for Preventing Educational Risk and they were providing training on the model to a group of Communities in Schools (CIS) leaders and staff.

Communities in Schools (CIS) of San Antonio was looking for an evidence-based intervention for students with high absenteeism.

We formed a university-community partnership and trained staff on the C&C model, CIS San Antonio implemented the model and we jointly conducted an effectiveness trial. The PI was supported by an IES Postdoctoral Fellow grant #R324B080008, but no additional external funding was used to implement the intervention or conduct the study.
The Intervention: Check & Connect

- Manualized dropout prevention and intervention program designed to promote student engagement in school through a targeted and individualized approach.

- Delivered by an adult “monitor” using a case management approach with a primary goal “to keep education a salient issue for the student, his or her family members, and teachers, and to reduce and prevent the occurrence of absenteeism, suspensions, failing grades and other warning signs of school withdrawal” (Sinclair et al., 1998, p. 10).

- Comprises two primary components:
  - **Check** component - regular monitoring of student data related to alterable risk indicators (academics, behavior, attendance).
  - **Connect** component - building relationships with students and families and facilitating basic or intensive interventions based on student data.

- Designed as a two-year intervention.
CIS is a non-profit nationwide network of nearly 200 independent affiliates delivering a dropout prevention and intervention model in more than 3,000 schools across 28 states. “...to surround students with a community of support, empowering them to stay in school and achieve in life.”

CIS model uses school-based case managers (site coordinators)

- To develop community partnerships
- Bring local resources to school campuses
- Provide school-wide, universal services
- Provide direct services to students at risk of dropout

While CIS prescribes the service delivery model, they don’t prescribe specific interventions, so affiliates are encouraged to use evidence-informed interventions to address local school and individualized student needs.
Implementation of C&C by CIS

- Trained CIS site coordinators on the model
  - One day training
  - ½ day booster training two months after implementation

- Site coordinators were monitored through the duration of the study by the co-PI at CIS

- Two site coordinators per school.
  - One site coordinator implemented C&C with a portion of the students on their caseload - students received C&C within the delivery model of CIS
  - Second coordinator, not trained on C&C, provided CIS services as usual to control group students
Are there differences in the effects on attendance, academics, and behavior for students who receive C&C in addition to CIS from those who receive only CIS services?
Study Design and Procedures

Participants

Measures

Analysis Strategy

Method
Study Design

Study inclusion criteria

School-level criteria
- Contracted with CIS and agreed to the study
- Middle or high school

Student-level criteria
- Not been previously enrolled in CIS (had to be a new client)
- Met eligibility for CIS services
- Demonstrated absenteeism (20 or more absences during prior school year or 2 or more absences during previous month)

Study enrollment procedures

- CIS site coordinators and school personnel identified eligible and school staff referred them to CIS
- CIS site coordinators provided information about CIS and the study to eligible students and their families
- For students from whom both parent consent and student assent were obtained, CIS conducted their standard assessment (not part of the study) with all participating students
- Students were then randomly assigned to control or treatment groups

Randomized block design

- Approximately 20 students randomized to treatment or control within each of the 14 participating schools
  - Student IDs entered and randomly ordered
  - First half of students assigned to tx and second half assigned to control
Participant Flow Chart

Notes:
Participant percentages reported at each stage are calculated by using number of participants in prior stage.

$N(n) = \text{number of students}; J(j) = \text{number of schools}.$
As seen in the tables below, students randomized to C&C were similar to the control group on all variables examined.

<table>
<thead>
<tr>
<th>Variable</th>
<th>C&amp;C (n=89)</th>
<th>Control (n=100)</th>
<th>(\chi^2)</th>
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<td>* (p &lt; .05)</td>
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<table>
<thead>
<tr>
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<th>Control (n=100)</th>
<th>(t) (df=187)</th>
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<tr>
<td>Age</td>
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<td>Income</td>
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<td>Academics</td>
<td>76.56</td>
<td>74.78</td>
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<tr>
<td>Discipline</td>
<td>0.17</td>
<td>0.30</td>
<td>1.38</td>
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<tr>
<td>Attendance</td>
<td>4.63</td>
<td>5.44</td>
<td>1.25</td>
</tr>
</tbody>
</table>
Measures

➡ **Academic Performance**
- Generated performance composites for all students using English, mathematics, science and social studies grades.
  - Pretest composites ($\alpha = .73$) - report card grades reported the marking period before enrollment into study
  - Posttest composites ($\alpha = .82$) - report card grades reported during the study period

➡ **Disciplinary Referrals**
- Count of office referrals
  - Pretest - total number of office referrals reported the marking period before enrollment into study
  - Posttest - total number of office referrals reported during the last marking period of the school year

➡ **Attendance**
- Number of days absent
  - Pretest - number of days absent reported the marking period before enrollment into study
  - Posttest - number of days absent reported during the last marking period of the school year
Randomization occurred at the individual level within staff who provided C&C services in each school setting.

Students were nested within each school; therefore needed to account for variation in outcomes due to school- or staff-level effects.

Hierarchical linear modeling (HLM) was employed to account for the school-level effects.

Stepwise HLM model estimation procedure.

Unconditional model: 9%, 15% and 12% of the variation in posttest academic, discipline and attendance outcomes were attributed to school level effects.

Level 1: $Y_{ij} = \beta_{0j} + \beta_{1j}(Pre_{ij}) + \beta_{2j}(tx_{ij}) + \beta_{3j}(grade_{ij}) + \beta_{4j}(sex_{ij}) + \beta_{5j}(frl_{ij}) + \beta_{6j}(age_{ij}) + \beta_{7j}(inc_{ij}) + r_{ij}$

Level 2: $\beta_{0j} = \pi_{00} + \pi_{01}(size_{j}) + \pi_{02}(\%dis_{j}) + \pi_{03}(\%lep_{j}) + \pi_{04}(\%mob_{j}) + \pi_{05}(\%prf_{j}) + \pi_{06}(\%atrisk_{j}) + e_{0j}$
Effect size estimates were calculated for each outcome variable

\[ \text{Effect size } (\delta) = \frac{\beta}{\sqrt{\tau^2 + \sigma^2}} \]

Improvement index

- To translate effect sizes into terms that illustrate the practical meaning of the intervention’s effect, we used the improvement index suggested by the Institute of Education Sciences (IES)
- Represents the change observed between the percentile rank of the average student in the intervention group compared to the average student in the control group.
Results

- C&C was positively related to improvements in academic performance (1.547, $p = .043$, 95% CI [.047–3.048])
  - Effect size = 0.07
  - Improvement index: 3% improvement for the average student in the intervention compared to a student in the control condition

- C&C was associated with reduction the total number of office referrals (-.363, $p = .036$, 95% CI [-.703 to -.023]).
  - Effect size = -0.27
  - Improvement index: 11% reduction in disciplinary referrals for the average student in the C&C group compared to a student in the control group

- No significant effect of C&C on attendance (-.577, $p > .05$)
  - Effect size = -0.01
  - Improvement Index: .04% percent improvement of the average student in the intervention compared to one in the control condition
- Extend empirical support for C&C as a promising intervention
  - Positive effects on two risk factors for dropout - grades and student misbehavior

- Absence of significant effects on attendance runs contrary to recent experimental evidence of C&C and is puzzling given the positive effects on grades and behavior

- Although findings were mixed and effects were small, the findings are, in several ways impressive
  - We compared C&C with another dropout prevention intervention
  - Implemented in real world setting with minimal support and no funding
  - Outcomes assessed after one semester of implementation versus the 2 years recommended by C&C developers
We would like to thank the Institute of Education Sciences for supporting this study (Postdoctoral Training Grant #R324B080008)
Thank You!

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