Longitudinal associations between sexual risk reduction and program participation in a sample of urban adolescents

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Introduction

• Negative sexual health outcomes, including unintended pregnancy, HIV/AIDS and STIs, are prevalent among adolescents in the United States.
• Marginalized urban and minority adolescents may be at even greater risk for adverse sexual health outcomes.
• The majority of evidence-based programs that focus on preventing risk behaviors and associated adverse outcomes seek change primarily at the individual level, and do not directly address the complex set of relationships and developmentally significant contexts that make up young people’s social worlds.
• One framework for addressing this limitation is positive youth development (PYD), which focuses on building adolescents’ developmental assets and engaging youth in the systems that affect them.
• Out-of-school time (OST) programs are an important PYD context in the United States.
• The PYD approach also holds promise as a method to influence adolescent sexual and reproductive health (ASRH) risk behaviors.

The present study assessed whether change in ASRH risk reduction over a one-year period was influenced by OST program participation and social connectedness, as well as by characteristics of OST programs.

Methods

• The present study was part of the Complementary Strengths Research Project, a community-based participatory research partnership.
• Longitudinal data were collected over a 2-year period.
• The first wave of data was collected in January 2008.
• Follow-up occurred 6 and 12 months after baseline data collection.
• Participants were enrolled at 8 community-based agencies in New York City.
• All Wave 1, 2, and 3 data were collected at OST programs participating.
• Individual level-of-follow-up rate over the three waves was 91%.
• Dependent variable was ASRH risk reduction; higher scores indicate greater adolescent ASRH risk reduction practice (range: 0–5).
• Independent variables included the Tiffany-Eckenrode Program Participation Scale (TEPPS), family and school connectedness, gender, duration of involvement in and aggregate program-level participation.
• Data were analyzed using multilevel models (time nested within participants nested within programs).

Results

• The mean ASRH risk reduction score was 3.80 (0.95) at Wave 1, 3.40 (0.80) at Wave 2, and 3.09 (0.82) at Wave 3.
• A one-way analysis of variance (ANOVA), ASRH risk reduction scores differed significantly across waves (*P < 0.01).
• In post-hoc comparisons, this difference was only significant for Waves 1 vs. Waves 2 and 3.
• The optimal level 1 model included a randomly varying slope and intercept at level 2, and a randomly varying intercept and fixed slope at level 3 (Table 1).
• The optimal level 2 model included TEPPS, school connectedness and gender (Table 1).
• This model explained 23.6% of the variance in baseline person-level ASRH risk reduction scores, and 1.4% of the variance in person-level change in ASRH risk reduction.
• The optimal level 3 model included aggregate program-level participation (Table 1).
• This model explained 54.9% of the variance in baseline program-level ASRH risk reduction scores.
• The cross-level interaction between wave and program-level participation indicated that participants attending programs with lower levels of aggregate participation reported greater declines in risk reduction practices than participants attending programs with average levels of participation (*P < 0.05; *P < 0.01; Figure 1).

Conclusion

Findings from this exploratory study indicate that it is important to consider contexts as well as individual behaviors when investigating ways to promote ASRH risk reduction among adolescents. Specifically, our findings suggest that interventions that increase program-level engagement in OST programs may help sustain adolescent risk reduction practices over time. The importance of OST programs in addressing adolescent sexual health and risk reduction supports the findings of Gavin et al., whose systematic review found that PYD programs can support sustained improvements in adolescent sexual and reproductive health.

Limitations of our study include the small number of level 3 units (programs), and the limited number of observations (5 time points), which did not allow us to explore non-linear change over time. Finally, our study was strictly observational, which may have limited detection of effects at the individual level. We are currently planning a follow-up study that addresses these limitations by evaluating a setting-level ASRH risk reduction intervention using a larger number of programs and additional follow-up observations.

Table 1. Associations between ASRH risk reduction and program participation

<table>
<thead>
<tr>
<th>Fixed Effect</th>
<th>Estimate (SE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>5.71 (0.08)**</td>
</tr>
<tr>
<td>TEPPS</td>
<td>0.02 (0.004)**</td>
</tr>
<tr>
<td>School connectedness</td>
<td>0.03 (0.01)**</td>
</tr>
<tr>
<td>Gender</td>
<td>0.46 (0.13)**</td>
</tr>
<tr>
<td>Wave</td>
<td>-0.04 (0.06)</td>
</tr>
<tr>
<td>Wave*TEPPS</td>
<td>-0.005 (0.003)</td>
</tr>
<tr>
<td>Wave*School connectedness</td>
<td>-0.007 (0.007)</td>
</tr>
<tr>
<td>Wave*Gender</td>
<td>-0.004 (0.07)</td>
</tr>
<tr>
<td>Wave*SD TEPPS</td>
<td>-0.007 (0.09)</td>
</tr>
<tr>
<td>Wave*SD TEPPS</td>
<td>-0.03 (0.11)**</td>
</tr>
</tbody>
</table>

Random effect variance: Level 1-0.49; Level 2-Intercept=0.30; Level 2-Wave=0.11; Level 3-Time=0.05. All individual-level variables were group mean centered. "**"P<0.01; "***"P<0.001.

Figure 1. Change in individual-level ASRH risk reduction scores over time, by amount of program-level participation. Higher scores on the ASRH risk reduction scale indicate more risk reduction practices. (*P<0.05; **P<0.01; ***P<0.001).

Literature cited


Acknowledgments

The project described in this report was supported in part by Award Number R25HD059364 from the National Institute of Nursing Research and by USDA grant number 2012-CN-065-9090. The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Institute of Nursing Research, the National Institutes of Health, or the USDA. We thank Mandy Partington and Sara Beth Henderson for their support in the preparation of this poster. We also thank the eight community agency members of the Complementary Strengths Research Project—Jethro Martin Institute, Lutheran Family Health Care/Project Reach Youth, Citizens Advice Bureau, Bronx AIDS Services, Mobile Mentoring Community Center, The Educational Alliance, The Children’s Aid Society, Frederick Douglass Community Center, Legal Outreach Inc.—and their youth participants, as well as our research partners (NYC Department of Youth and Community Development, NYS Department of Health AIDS Institute Adolescent HIV Prevention Services Unit and the RCBI).

For further information

Please contact Jennifer Tiffany at jst5@cornell.edu. More information on this related projects can be obtained by scanning the QR code or at http://cornell.edu/projects/sex-risk-reduction-research-and-educational-projects.