Sexual and Reproductive Health Knowledge and Behaviors of At-Risk Adolescents.

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Introduction
- Despite recent declines, the United States has one of the highest rates of adolescent pregnancies compared with other developed countries, such as the United Kingdom and Canada (Centers for Disease Control and Prevention, 2014).
- There are adverse outcomes for adolescent mothers including lower educational attainment and greater likelihood of living in poverty (Pepper et al., 2010).
- Several factors put adolescents at risk of pregnancies and sexually transmitted infections (STIs); however, sexual and reproductive health (SRH) knowledge has been shown to be a potentially modifiable factor (Swenson et al., 2010).
- Having high SRH knowledge is an important tool in both pregnancy and STI prevention (Aspy et al., 2007), and is a core component of comprehensive, medically-accurate sexual health education programs (CSHEP).
- Little is known about the SRH knowledge of at-risk adolescents in North Dakota (ND) or the extent to which it contributes to their sexual behaviors.
- Access to CSHEP is fairly limited in ND, leaving adolescents vulnerable.

Reach One Teach One North Dakota (ROTO ND)
- ROTO ND is a CSHEP designed to prevent adolescent pregnancy.
- Its core curriculum is Making Proud Choices!, supplemented by three adulthood preparation subjects (adolescent development, healthy relationships, and healthy life skills).
- Participants were expected to implement the SRH knowledge to make healthier choices and also be peer educators who would be capable of teaching their peers.

Goals
- The goals of this study were to:
  1. measure the impact of ROTO ND on SRH knowledge,
  2. identify predictors of SRH knowledge, and
  3. identify how SRH knowledge contributes to adolescent sexual behavior intentions.

Method
- Pretest and posttest data came from participants in ROTO ND groups held from 2013 - 2015.

Participants
- Youth were eligible if they were unmarried, between the ages of 13 - 20 (M=16.08), and had signed parent/guardian permission to participate (N=111; 55% female).
- Forty-one percent reported ever having had sex and 25% of these used condoms at last sex.
- The sample was more diverse than the local community with 71.3% youth of color, 32.6% New Americans, and 38.7% received public assistance last year.

Measures
- Knowledge was generated by summing 7 true/false items, range was 0-7.
- Degrees of Sexual Risk was generated by using 2 variables: Intending to have sex and Intending to use a condom. Not intending to have sex =0. Not intending to use a condom =1. Intending to have sex and not to use a condom =2.
- Race was dummy-coded with White =1 and non-white =0.
- Gender was dummy coded with girls =1 and boys =0.
- Importance of Religiosity had responses ranging from 1=not important at all to 4=very important.
- Family Connectedness Scale: Generated by using the mean of five items such as, ‘My family understands me’ (T1 α=.85; T2 α=.84). Responses ranged from 1=‘definitely no’ to 4=‘definitely yes’.
- Deviant Peers Scale: Generated by using the mean of three items such as, ‘How many of your close friends use drugs?’ (T1 α=.84; T2 α=.80). Responses ranged from 1=‘None’ to 5=‘All’.

Table 1
Multiple linear regression analyses predicting SRH knowledge.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Pretest</th>
<th>Posttest</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>.09 (.08)</td>
<td>.06 (.08)</td>
</tr>
<tr>
<td>Gender</td>
<td>.23 (.29)</td>
<td>-.43 (.31)</td>
</tr>
<tr>
<td>Race</td>
<td>.22 (.34)</td>
<td>.27 (.42)</td>
</tr>
<tr>
<td>Religiosity</td>
<td>-.26 (.20)</td>
<td>-.16 (.20)</td>
</tr>
<tr>
<td>Family connectedness</td>
<td>-.03 (.15)</td>
<td>.15 (.16)</td>
</tr>
<tr>
<td>Deviant peers</td>
<td>.13 (.17)</td>
<td>.05 (.18)</td>
</tr>
<tr>
<td>Race by Religiosity Interaction</td>
<td>.28 (.33)</td>
<td>.22 (.32)</td>
</tr>
</tbody>
</table>

N=75, 63
Notes: Robust standard errors in parentheses.
*p < .05 **p < .01 ***p < .001.
Variable also measured at posttest.

Table 2
Multiple linear regression analyses predicting degrees of sexual risk.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Pretest</th>
<th>Posttest</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>.02 (.04)</td>
<td>-.08 (.04)</td>
</tr>
<tr>
<td>Gender</td>
<td>.17 (.14)</td>
<td>.24 (.16)</td>
</tr>
<tr>
<td>Race</td>
<td>.10 (.22)</td>
<td>.02 (.42)</td>
</tr>
<tr>
<td>Religiosity</td>
<td>.01 (.09)</td>
<td>-.06 (.10)</td>
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<tr>
<td>Family connectedness</td>
<td>-.09 (.07)</td>
<td>-.07 (.08)</td>
</tr>
<tr>
<td>Deviant peers</td>
<td>.19 (.08)*</td>
<td>.20 (.09)*</td>
</tr>
<tr>
<td>Knowledge</td>
<td>-.06 (.07)</td>
<td>.01 (.08)</td>
</tr>
<tr>
<td>Race by Religiosity Interaction</td>
<td>-.34 (.16)*</td>
<td>.03 (.17)</td>
</tr>
</tbody>
</table>

R²=.39, .23
N=66, 59
Notes: Robust standard errors in parentheses.
*p < .05 **p < .01 ***p < .001.
Variable also measured at posttest.

Results
- A significant difference was found for SRH knowledge between pretest (M=4.72, SD=1.19) and posttest (M=5.66, SD=1.41); (t=-6.02, p<.000).
- Hierarchical linear regression analyses show no significant predictors of SRH knowledge (Table 1).
- For the degrees of risk variable, having deviant peers had a positive association at pretest and posttest, and the interaction between race and spirituality had a negative association at pretest (Table 2).

Discussion
- SRH knowledge increased from pretest to posttest; nonetheless, it was not a significant predictor of sexual behavior intentions.
- Having deviant peers was positively associated with degrees of sexual risk at pretest and posttest. This confirms previous research that shows having deviant peers is positively associated with more risky sexual behaviors (Lansford et al., 2010; Lansford, Dodge, Fontaine, Bates, & Pettit, 2014).
- The significant interaction reveals that religiosity and race were associated with degrees of sexual risk. More religious adolescents had lower degrees of sexual risk; however, there was a greater protective effect for white adolescents. At baseline, 66% of our sample reported high religiosity.
- Prior research shows that high religiosity was associated with less risky sexual behavior (Nonnemaker et al., 2003).

Conclusion
- The program’s ability to increase SRH knowledge is encouraging, as this is an important tool in pregnancy and STI prevention.
- Knowledge of the role played by race and religion maybe useful in identifying adolescents at risk.
- Future CSHEP can explore ways of promoting positive peer relationships.

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