School Staff Referrals for Connecting Students to HIV/STD Testing

Catherine N. Rasberry, PhD, MCHES
Division of Adolescent and School Health
Centers for Disease Control and Prevention (CDC)
American School Health Association Conference
October 2016

The study included in this presentation was supported by contract 200-2009-30503 and task order 200-2014-F-59670 to ICF International from the Centers for Disease Control and Prevention, Division of Adolescent and School Health. The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.

Co-authors

• Nicole Liddon, PhD
• Susan Hocevar Adkins, MD
• Catherine Lesesne, PhD, MPH
• Andrew Hebert, MPH
• Elizabeth Kroupa, MPH
• India Rose, PhD

Presentation Objectives

• At the end of the session, participants will be able to:
  • Describe the association between receiving a referral from school staff for HIV/STD testing and having ever been tested
  • Identify predictors of having received a school staff referral for HIV/STD testing
  • Describe the relationship between reporting school staff follow up on an HIV/STD testing referral and having ever been tested

Background: Youth and HIV/STD

• Youth are at disproportionately high risk for sexually transmitted diseases (STD)1
• Behaviors that place young people at risk for HIV and other STDs often begin in adolescence
  • 2015 National Youth Risk Behavior Survey data from U.S. high school students show:2
    o 41.2% have ever had sex
    o 30.1% are currently sexually active
    o 43.1% of those youth had not used a condom at last sex

Background: Connecting Youth to HIV/STD Testing

• Clinical guidelines recommend testing youth for HIV and other STDs3,4
• Adolescents and young adults exhibit relatively low rates of testing
  • In 2013, 22% of sexually experienced U.S. high school students reported having ever been tested for HIV5
  • A recent national survey of adolescents ages 15-19 found that only 6.7% of female and 2.4% of male respondents had been tested for STDs in the last year6

Background: Youth and HIV/STD Testing

• Schools can help increase youth access to sexual health services such as HIV/STD testing
  • Direct provision of services
  • Referral to services
• Project Connect7 served as a model program in which school staff referred youth for sexual health services
  • Findings showed increased reports of doctor/nurse visits for STD testing or treatment and increased HIV testing among females8
Study Purpose

- Purpose: To explore predictors of receiving HIV/STD testing and referral for HIV/STD testing, with a focus on referral follow-up

Method: Study Background

- Data collected as baseline (pre-intervention) evaluation data for a school-centered HIV/STD prevention program
  - 7 high schools in Broward County Public Schools (BCPS)
- Outcomes of interest
  - Improved school climate and use of sexual health services
- Program strategies
  - Multi-component approaches including supporting school staff to connect students to HIV and STD-related services

Method: Procedure

- 46-item paper-and-pencil questionnaire
  - Student characteristics
  - Sexual risk behaviors
  - School climate
  - School experiences related to HIV and STD (e.g., having been referred by staff for HIV or STD testing or treatment)
- Census of students in 7 high schools
- Passive parental consent
- Teachers proctored the self-administered survey

Method: Measures

- Age
  - Categorical; responses for each year ranging from "12 years old or younger" to "18 years old or older"
- Race and ethnicity
  - Created 4-category variable: (1) Black, non-Hispanic; (2) White, non-Hispanic (used as referent group); (3) Hispanic (of any race); (4) other or multi-racial
- Ever had sex
  - Yes/no answer to "Have you ever had sex?"
  - Sex was defined as "vaginal, oral, or anal sex"

Method: Measures

- Ever tested for HIV/STD
  - "Have you ever been tested for HIV, the virus that causes AIDS? (Do not count tests done if you donated blood)"
  - "Have you ever been tested for other STDs such as genital herpes, chlamydia, syphilis, or genital warts?"
  - Response options: yes, no, and I don’t know
  - "Yes" to either item was coded as "yes" for having ever been tested for HIV/STD

Method: Measures

- Receipt of referral from school staff for HIV or STD testing or treatment
  - "During this school year, did a staff member at your school (such as a teacher, counselor, nurse, coach, or other school staff) provide you with a referral to HIV testing services or treatment?"
  - "During this school year, did a staff member at your school (such as a teacher, counselor, nurse, coach, or other school staff) provide you with a referral to STD testing services or treatment?"
  - Response options: yes and no
  - "Yes" to either item was coded as "yes" for having received a referral from school staff for HIV or STD testing or treatment
**Method: Measures**

- Among students who received referrals:
  - Receipt of testing due to referral
    - "Did you receive HIV testing because of the referral?"
    - "Did you receive STD testing because of the referral?"
  - Receipt of follow-up on the referral
    - "Did that person check to see that you receive HIV testing?"
    - "Did that person check to see that you receive STD testing?"
  - Response options: yes, no, and I don’t want to say
  - "Yes" to either item was coded as "yes" for having received HIV or STD testing because of a referral

**Method: Participants**

- Full sample
  - Surveys completed by 11,681 students
  - Response rate = 79.5%

- Analytic sample
  - 319 students with ≥25% of items missing were excluded
  - An additional 59 students reporting being 12 years of age or younger were excluded
    1. CDC’s recommendations for HIV testing begin at age 13
    2. Respondents reporting being age 12 and under exhibited aberrant response patterns
  - Final analytic sample = 11,303

**Methods: Analysis**

- Descriptive statistics
- χ² tests
- Firth’s penalized maximum likelihood regression
  - This specialized technique helps account for bias potential introduced from rare events, given that referrals were provided to few students in the full sample

**Findings: Sample Characteristics**

- 50.7% Female
- 40.7% Hispanic/Latino, 34.7% Black/African American, non-Hispanic
- 15.86 Mean age (SD=1.22)
- 12.9% Sexual minority youth (based on reported attraction, identity, and/or behavior)
- 40.7% Reported having ever had sex
- 17.0% Reported having ever been tested for HIV or other STDs (30.2% of sexually experienced students)

**Findings: Receipt of Referral**

- 1.3% of students (n=144) reported having been referred by a school staff member for either HIV or STD testing services or treatment during the school year
  - 2.2% of sexually experienced students received a referral
Findings: Receipt of Referral

Penalized maximum likelihood logistic regression to predict having received a referral for HIV or STD testing or treatment (n=10,650)

<table>
<thead>
<tr>
<th>Predictor variable</th>
<th>Odds Ratio</th>
<th>95% CI</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex (male)</td>
<td>2.492</td>
<td>1.699-3.654</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Age</td>
<td>1.074</td>
<td>0.927-1.244</td>
<td>.340</td>
</tr>
<tr>
<td>Race/ethnicity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Black/African American, Non-Hispanic</td>
<td>1.652</td>
<td>0.916-2.979</td>
<td>.095</td>
</tr>
<tr>
<td>Hispanic</td>
<td>1.443</td>
<td>0.803-2.590</td>
<td>.220</td>
</tr>
<tr>
<td>Other or multiracial</td>
<td>2.717</td>
<td>1.351-5.462</td>
<td>.005</td>
</tr>
<tr>
<td>Sexual minority</td>
<td>3.799</td>
<td>2.567-5.621</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Ever had sex</td>
<td>2.579</td>
<td>1.755-3.788</td>
<td>&lt;.001</td>
</tr>
</tbody>
</table>

Table notes. Missing data are not included. CI = confidence interval. Model Wald $\chi^2$(7) = 103.20, $p < .001$.

Findings: Receipt of HIV or STD Testing

Penalized maximum likelihood logistic regression to predict having been tested for HIV or other STDs among students who report they were referred for HIV/STD testing (n=9,998)

<table>
<thead>
<tr>
<th>Predictor variable</th>
<th>Odds Ratio</th>
<th>95% CI</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex (male)</td>
<td>0.908</td>
<td>0.809-1.018</td>
<td>.099</td>
</tr>
<tr>
<td>Age</td>
<td>1.180</td>
<td>1.125-1.238</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Race/ethnicity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Black/African American, Non-Hispanic</td>
<td>1.391</td>
<td>1.176-1.644</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Hispanic</td>
<td>1.059</td>
<td>0.889-1.241</td>
<td>.565</td>
</tr>
<tr>
<td>Other or multiracial</td>
<td>1.230</td>
<td>0.960-1.575</td>
<td>.102</td>
</tr>
<tr>
<td>Sexual minority</td>
<td>1.230</td>
<td>1.055-1.434</td>
<td>.008</td>
</tr>
<tr>
<td>Ever had sex</td>
<td>4.451</td>
<td>3.936-5.033</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Received school staff referral for HIV/STD testing</td>
<td>3.173</td>
<td>2.144-4.696</td>
<td>&lt;.001</td>
</tr>
</tbody>
</table>

Table notes. Missing data are not included. CI = confidence interval. Model Wald $\chi^2$(7) = 103.20, $p < .001$.

Findings: Referral Follow-up

Penalized maximum likelihood logistic regression to predict having received HIV or other STDs among students who report they were referred for HIV/STD testing or treatment (n=99)

<table>
<thead>
<tr>
<th>Predictor variable</th>
<th>Odds Ratio</th>
<th>95% CI</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex (male)</td>
<td>1.402</td>
<td>0.551-3.571</td>
<td>.478</td>
</tr>
<tr>
<td>Age</td>
<td>1.341</td>
<td>0.956-1.881</td>
<td>.089</td>
</tr>
<tr>
<td>Race/ethnicity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Black/African American, Non-Hispanic</td>
<td>2.399</td>
<td>0.313-11.218</td>
<td>.266</td>
</tr>
<tr>
<td>Hispanic</td>
<td>2.618</td>
<td>0.560-12.241</td>
<td>.221</td>
</tr>
<tr>
<td>Other or multiracial</td>
<td>1.906</td>
<td>0.305-11.897</td>
<td>.490</td>
</tr>
<tr>
<td>Sexual minority</td>
<td>1.201</td>
<td>0.476-3.029</td>
<td>.698</td>
</tr>
<tr>
<td>Ever had sex</td>
<td>1.537</td>
<td>0.571-4.133</td>
<td>.395</td>
</tr>
<tr>
<td>School staff checked to see if student received testing</td>
<td>3.288</td>
<td>1.313-8.231</td>
<td>.011</td>
</tr>
</tbody>
</table>

Table notes. Missing data are not included. CI = confidence interval. Model Wald $\chi^2$(7) = 103.20, $p < .001$.

Discussion

Only a small percentage of students are being referred by school staff for HIV/STD testing or treatment
• 1.3% of all students; 2.2% of sexually experienced students
• Students more likely to report receiving a referral include those who were:
  • Sexually active
  • Sexual minority
  • Male

• Among students who reported referrals:
  • 47.6% had been tested for HIV or other STDs
  • 25.8% reported receiving HIV/STD testing specifically because of the referral

Students who received follow-up were more likely to report having received HIV or STD testing than those who did not ($\chi^2 = 10.86, p = .001$)
• 71.9% of students with follow up reported being tested
• 37.0% of students without follow up reported being tested
Discussion

- The odds of having been tested for HIV/STD were more than 3 times as high for students who received staff referrals
  - Consistent with other research that finds provider recommendations for testing are associated with getting tested\(^8\)\(^9\)\(^10\)
  - Among youth who received referrals:
    - More than a quarter said they were tested specifically because of the referral.

Among students who received referrals, the odds of having been tested were more than 3 times as high for students who received follow-up on their referrals

- Among students who received follow-up on their referrals, almost three-quarters had been tested
- However, a relatively low percentage of youth reporting getting follow-up

Limitations

- Data were self-reported & cross-sectional
- Data do not represent all students in the district or high school students more broadly
- Data provide no information on who initiated referrals (staff or students)
- Data were collected prior to referral-related intervention efforts
- Analyses on referral follow-up were conducted with a small subset of students

Implications for Schools

- Referrals matter
- Overall referral rates are low—school staff can increase referrals as a way to increase student access to services
  - Referral processes can be clearly articulated
  - Professional development is likely to be important for referral to sensitive services
- School staff may be well-positioned to reach certain subgroups of students
  - Males
  - Sexual minority youth
- Referral processes can include follow-up to maximize impact

Questions


References
