Correlates of Readiness to Receive *Chlamydia* Screening Among 2 Populations of Youths

Diane R. Blake, MD; Celeste A. Lemay, RN; Alka Indurkhya, PhD

**Objectives**: To assess young people’s preferences for *Chlamydia* testing venues and methods, attitudes about testing, sex differences among these variables, and their predictive associations with young people’s readiness for screening.

**Design**: Survey.

**Setting**: National Job Training site and Department of Youth Services site.

**Participants**: One hundred fifty male and 150 female youths from the National Job Training site and 150 male youths from the Department of Youth Services site.

**Main Outcome Measure**: Modifiable predictors of stage of readiness for *Chlamydia* screening.

**Results**: Modifiable variables associated with increasing readiness for *Chlamydia* screening included the following: (1) among males in the Department of Youth Services group, perceived likelihood of ever having a *Chlamydia* infection; (2) among males from the National Job Training site, lack of condom use as a risk factor for *Chlamydia* infection and perception of untreated *Chlamydia* infection as dangerous; and (3) among females from the National Job Training site, belief that a partner could have a *Chlamydia* infection and fewer perceived social consequences of *Chlamydia* testing.

**Conclusion**: Interventions targeted at sex-specific modifiable variables may help reduce undiagnosed *Chlamydia* infection among sexually active youth.


**Approximately 4 million** new cases of *Chlamydia trachomatis* infection are reported each year in the United States. *Chlamydia* disproportionately affects adolescents and young adults, with those aged 15 to 24 years experiencing higher rates than any other age group. Potential sequelae of untreated infections include epididymitis in men and pelvic inflammatory disease, infertility, ectopic pregnancy, and chronic pelvic pain in women.

It is estimated that 90% of *Chlamydia*-infected males and females are asymptomatic; therefore, most infections will be detected only through routine screening. Annual *Chlamydia* screening for sexually active young women 25 years and younger is recommended by the Centers for Disease Control and Prevention and the US Preventive Services Task Force. Universal screening of asymptomatic male youths has not as yet been recommended. However, screening recommendations have been made for certain high-risk populations of asymptomatic male youths, such as men who have sex with men, and suggestions have been made to screen male youths entering juvenile detention or adult correction facilities. Although young men experience minimal burden from *Chlamydia* sequelae, untreated men continue to serve as a reservoir for reinfection of female partners and/or transmission to new partners. Furthermore, accumulating epidemiologic evidence suggests that bacterial sexually transmitted diseases (STDs), including *Chlamydia*, serve as cofactors for human immunodeficiency virus transmission, and intervention studies have demonstrated that reducing the prevalence of bacterial STDs results in fewer new human immunodeficiency virus infections within a community.

The introduction of highly accurate noninvasive nucleic acid amplification tests for the detection of *Chlamydia* has improved the feasibility of screening asymptomatic youths. It is now possible to collect a urine sample for *Chlamydia* screening at any venue that has a bathroom. However, it is not known which venues would be most appealing to adolescents and hence most conducive to sample collection. Recent studies have demonstrated a preference by female patients for noninvasive testing, either by self-
collected vaginal swabs or by urine specimen. To our knowledge, male preferences for urine vs urethral swab collection have not been studied.

Little is known about predictors of adolescent and young adults’ intentions to seek routine urine screening for Chlamydia. Formative work in this area suggests that perceived lack of privacy, fear of test results, denial, inadequate information, and cost of testing negatively influence young peoples’ interest in Chlamydia testing. The transtheoretical model of behavior change focuses on multiple facets of the change process and involves stages of change, process of change, decisional balance, and self-efficacy. The stages of change are the central construct of the transtheoretical model, which describes change as a process requiring progress through a series of stages rather than a single event at a point in time. The 5 stages of change are precontemplation, contemplation, preparation, action, and maintenance. Transition from one stage of change to the next is influenced by an individual’s perceived costs and benefits associated with engaging in the specific health behavior.

The stages of change have been used to describe the process of adopting many new health behaviors; notably smoking cessation. Interventions have been designed to promote smoking cessation behavior by targeting movement from one stage to the next stage. Because change occurs as a process rather than a single event, an intervention targeted at moving an individual from precontemplation to contemplation will look very different from one that targets movement from preparation to action. Chacko et al and Banikarim et al have used the stages of change model to investigate which variables predict Chlamydia and gonorrhea test seeking among minority women attending health clinics who have new sexual partners and/or a change in sexual partners.

To our knowledge, no studies have been conducted with young men or with young women in nonclinic settings to explore what variables predict their readiness to seek Chlamydia screening. Understanding which attitudes or behaviors predict a young person’s stage of readiness to receive routine Chlamydia screening will provide targets for future behavior change interventions.

The objectives of this study were to assess (1) young people’s testing venue and testing method preferences, (2) their attitudes about Chlamydia testing, (3) sex differences among these variables, and (4) the association of these variables with adolescents’ willingness to be tested for Chlamydia. These objectives are consistent with several Healthy People 2010 goals, including reducing the proportion of adolescents and young adults with C. trachomatis infection, reducing the proportion of females who have ever required treatment for pelvic inflammatory disease, and increasing the proportion of sexually active women 25 years and younger who are screened annually for genital Chlamydia infections.

**METHODS**

**PARTICIPANTS**

One hundred fifty female and 130 male participants between the ages of 16 and 24 years were recruited from a National Job Training site in central Massachusetts between March 1, 2002, and February 28, 2004. The National Job Training program is a voluntary program for young people who are interested in learning job skills that will improve their employability. One hundred fifty male participants between the ages of 14 and 17 years were also recruited from a Department of Youth Services (DYS) site in central Massachusetts between April 1, 2002, and January 31, 2003. The DYS is the juvenile justice agency for the Commonwealth of Massachusetts. Demographic information (sex, age, race, and reason for refusing) was collected from individuals who declined to participate.

To obtain 150 valid surveys for each group, 298 females from the National Job Training site, 253 males from the National Job Training site, and 315 males from the DYS site were approached. Analyses of demographic variables of those who refused to participate and those who agreed to participate showed associations with age and race/ethnicity. However, the associations were not consistent across groups. Comparison of participants who completed the survey and responded to the main outcome variable of interest (readiness to receive routine Chlamydia screening) with those who did not respond to this variable showed no differences in demographic attributes. Demographic characteristics of females and males from the National Job Training site were similar, but they differed substantially from those of the males from the DYS site (*Table 1*). The 3 groups of participants referred to in this article as Job Training females, Job Training males, and DYS males.

All participants provided written informed consent. The requirement for parental permission was waived because of the minimal risk of the study and the infeasibility of obtaining parental permission. The study protocol and consent procedures were approved by the University of Massachusetts Medical School Committee for the Protection of Human Subjects in Research.

**SURVEYS**

Survey construction was informed by data obtained through sex-specific focus groups conducted at both study sites. Initial drafts of the survey were reviewed and critiqued by colleagues. Revised surveys were pilot tested with focus groups at both study sites, and minor revisions were made as indicated. Finally, surveys were piloted with individuals at the DYS and National Job Training site until no further recommendations for change were made (7 surveys at the DYS site and 17 surveys at the National Job Training site).

The survey included 109 items and required an average of 10 to 20 minutes to complete. Survey content included the following: demographic information; groups of questions measuring beliefs about the effects of a Chlamydia infection (15 items); reasons one would want to get tested for Chlamydia (14 items); personal and environmental barriers to Chlamydia testing (16 items); facilitators of STD testing (16 items); willingness to be tested at various venues (10 items), and a self-efficacy scale including various steps to take to get tested (9 items). Responses were in the format of 5-point Likert-type scales. Items from the grouped questions were either used individually or incorporated into a scale. The reliability of the scaled scores was very good, with Cronbach’s ranging from 0.74 to 0.94. In addition, there were several miscellaneous items including questions about past STD testing experiences and testing method preference.

The primary outcome variable was an item measuring readiness to receive routine Chlamydia screening and was based on the stages of change construct from the transtheoretical model of behavior change. Precontemplation was operationalized as “not interested in routine Chlamydia screening”; contemplation as “might start receiving routine Chlamydia screening”; preparation as “plan to start receiving routine screening”; and action as “already receiving routine screening.”
DATA COLLECTION

After providing written informed consent, participants completed the self-administered survey. Participants at both sites were initially offered an audiotape player to listen to the recorded survey questions via a headset while completing the survey. However, feedback from participants and staff at the National Job Training site indicated that the audiotape was not helpful and students did not like using it. The DYS participants, who on average were several years younger than those at the National Job Training site, were encouraged to use the audiotapes to enhance their understanding of the written survey, which they routinely did. Participants were recruited until 150 surveys from each group (Job Training females, Job Training males, and DYS males) had been collected that included a response to the main outcome variable (readiness to receive routine Chlamydia screening). As part of a larger study, first-part voided urine was also collected for nucleic acid amplification testing for Chlamydia.

STATISTICAL ANALYSIS

Statistical analyses were conducted with SPSS for Windows, version 14.0 (SPSS Inc, Chicago, Illinois). The statistical analyses included a descriptive analysis of responses to the survey and tests of association. Items within the grouped questions were tested individually for association with the main outcome variable, and scaled scores of the grouped questions were also tested for association. Analyses by χ² were used to test for associations between categorical variables, and independent sample, 2-tailed t tests were used to test for associations between continuous variables and categorical variables. A hierarchical or multilevel approach (ie, nesting of subjects within site) to data analysis was considered inappropriate because of the small number of sites and statistically significant sex differences in readiness outcomes within site. Items and scales that demonstrated an association with the main outcome variable (self-reported readiness) were entered into multivariate logistic regression models after stratifying the data by site and sex. If a scaled score was entered into a regression model, then no individual item from that scale was entered. Within each stratum, adjusted odds ratios and 95% confidence intervals were estimated for modifiable and nonmodifiable variables using stepwise logistic regression to predict stage of readiness outcomes. Model fits were assessed by the Hosmer-Lemeshow goodness-of-fit statistics.

Chlamydia positivity was much higher in the Job Training females than in either male group (Table 1). Of note, DYS males were much more likely to be worried about their urine being tested for drugs than either of the 2 Job Training groups (Table 1). However, this may be confounded by the fact that Job Training students are required to submit a urine sample for drug testing on admission to the training program. Not surprisingly, males overwhelmingly stated a preference for urine testing over a urethral swab, and most females stated a preference for

<table>
<thead>
<tr>
<th>Table 1. Sample Demographics and Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>National Job Training Site</strong></td>
</tr>
<tr>
<td><strong>Females</strong></td>
</tr>
<tr>
<td>Demographics</td>
</tr>
<tr>
<td>Age, y</td>
</tr>
<tr>
<td>Range</td>
</tr>
<tr>
<td>Race/ethnicity</td>
</tr>
<tr>
<td>White</td>
</tr>
<tr>
<td>African American/black</td>
</tr>
<tr>
<td>Hispanic</td>
</tr>
<tr>
<td>American Indian</td>
</tr>
<tr>
<td>Asian</td>
</tr>
<tr>
<td>Multiracial</td>
</tr>
<tr>
<td>Other</td>
</tr>
<tr>
<td>Type of insurance</td>
</tr>
<tr>
<td>Private</td>
</tr>
<tr>
<td>Medicaid</td>
</tr>
<tr>
<td>Medicare</td>
</tr>
<tr>
<td>None</td>
</tr>
<tr>
<td>Characteristics</td>
</tr>
<tr>
<td>Has a personal physician</td>
</tr>
<tr>
<td>Has ever had sexual intercourse</td>
</tr>
<tr>
<td>Has ever been tested for Chlamydia</td>
</tr>
<tr>
<td>Is willing to be tested with pelvic examination or urethral swab</td>
</tr>
<tr>
<td>Would worry that urine might be drug tested</td>
</tr>
<tr>
<td>Prefer urine test to pelvic examination or urethral swab</td>
</tr>
<tr>
<td>Chlamydia test positive (on day of survey)</td>
</tr>
<tr>
<td>Has ever been tested for Chlamydia (of Chlamydia test positive)</td>
</tr>
<tr>
<td>Perceived likelihood of ever having Chlamydia infection</td>
</tr>
</tbody>
</table>

*a n > 150 because participants were allowed to choose more than 1 category.*
Table 2. Rating of Potential Urine Chlamydia Testing Venues*  

<table>
<thead>
<tr>
<th></th>
<th>National Job Training Site</th>
<th>Department of Youth Services Site, Males</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Females (n=149)</td>
<td>Males (n=142)</td>
</tr>
<tr>
<td>Physician’s office</td>
<td>1.30</td>
<td>1.49</td>
</tr>
<tr>
<td>Health clinic</td>
<td>1.35</td>
<td>1.61</td>
</tr>
<tr>
<td>Hospital laboratory</td>
<td>1.74</td>
<td>1.84</td>
</tr>
<tr>
<td>Sexually transmitted disease clinic</td>
<td>1.83</td>
<td>1.84</td>
</tr>
<tr>
<td>Planned Parenthood</td>
<td>2.05</td>
<td>2.47</td>
</tr>
<tr>
<td>Unobvious place</td>
<td>2.32</td>
<td>2.34</td>
</tr>
<tr>
<td>School nurse/clinic</td>
<td>2.70</td>
<td>2.76</td>
</tr>
<tr>
<td>Workplace</td>
<td>3.91</td>
<td>3.56</td>
</tr>
<tr>
<td>Library</td>
<td>4.29</td>
<td>3.76</td>
</tr>
<tr>
<td>Private bathroom at mall</td>
<td>4.32</td>
<td>3.78</td>
</tr>
</tbody>
</table>

*Mean ratings; 1 indicates very willing, and 5, very unwilling.

b \( \chi^2, P < .05 \).
c \( \chi^2, P < .01 \).

urine testing over a pelvic examination. A higher proportion of Job Training males than youths in the other 2 groups thought it unlikely that they could ever have Chlamydia (Table 1). Nevertheless, Job Training males were the only group for which an association was found between believing it was likely they could ever have Chlamydia and with testing positive for Chlamydia on the day of the survey (Fisher exact test, \( P = .04 \)). Additional sample characteristics are shown in Table 1.

Table 2 displays the mean rating for willingness to have urine collected for Chlamydia screening at 10 potential venues. Interestingly, the order of venue ratings from highest to lowest was nearly the same for all 3 groups, and the top 2 venues were identical for all 3 groups. Only 4 venues (health clinic, Planned Parenthood, library, and private bathroom at the mall) received significantly different ratings among the 3 groups. Although the health clinic was the second-highest–rated venue for all 3 groups, the Job Training females’ rating was significantly higher than those of the male 2 groups. The ratings given to the other 6 venues were very similar between groups.

Table 3 displays each group’s distribution of stage of readiness to receive routine Chlamydia screening, the main outcome variable of interest. The \( \chi^2 \) tests of association between group and stage of readiness indicated a significant association (\( \chi^2 = 57.18, P < .001 \)). In other words, simply being female was associated with stage of readiness. Similarly, recruitment from the Job Training program vs DYS was associated with stage of readiness. Consequently, we conducted multivariate logistic regression models for each individual group to understand what variables could be targeted for future interventions within each of the 3 groups studied.

We first compared each stage of readiness with the stage(s) preceding it and/or following it, eg, stage 1 (action) vs stage 2 (preparation), stage 1 (action) vs stage 2 (preparation) or 3 (contemplation), and stage 2 (preparation) or 3 (contemplation) vs stage 4 (precontemplation). To capture as much information from as many participants as possible, all possible groupings between a stage and the one preceding or following it were made. For instance, females in stage 2 may not be very different from females in stage 3. If so, then comparing stage 1 with stages 2 and 3 may provide more information than comparing stage 1 with only stage 2. We have reported only on the models that explain the most variation for each stage comparison (Table 4).

Analyses detected several variables predicting action over other stages. Job Training males in the action stage were significantly more likely to (1) not have used a condom at last intercourse; (2) have seen a physician in the past year; (3) have had an STD test in the past year; and (4) feel more comfortable completing steps needed to test for Chlamydia than those in the preparation or contemplation stages. Job Training females in the action stage were significantly more likely to (1) prefer a pelvic examination to a urine test; (2) believe that a partner could have Chlamydia; (3) have had a physician’s appointment in the past year; and (4) have been tested for Chlamydia in the past year when compared with those in the preparation or contemplation stages. Because of the small number of DYS males in the action stage (9 [6.0%]), we did not obtain stable estimates with multivariate logistic regression.

Analyses detected fewer variables predicting precontemplation over other stages among the male participants. Job Training males in the action, preparation, or contemplation stages were significantly more likely to perceive Chlamydia infection as dangerous and to endorse fewer reasons to not be tested for Chlamydia than those in the precontemplation stage. The DYS males in the preparation or contemplation stage were significantly more likely to believe they could ever have a Chlamydia infection than those in the precontemplation stage, and they were also more willing to go to a site to get tested.

Table 3. Stage of Readiness to Receive Routine Chlamydia Screening  

<table>
<thead>
<tr>
<th></th>
<th>National Job Training Site</th>
<th>Department of Youth Services Site, Males</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Females (n=150)</td>
<td>Males (n=150)</td>
</tr>
<tr>
<td>Already received routine screening( b ) (action)</td>
<td>40 (26.7)</td>
<td>22 (14.7)</td>
</tr>
<tr>
<td>Plan to start receiving routine screening( b ) (preparation)</td>
<td>79 (52.7)</td>
<td>55 (36.7)</td>
</tr>
<tr>
<td>Might start receiving routine screening( b ) (contemplation)</td>
<td>22 (14.7)</td>
<td>42 (28.0)</td>
</tr>
<tr>
<td>Not interested in receiving routine screening( b ) (precontemplation)</td>
<td>9 (6.0)</td>
<td>31 (20.7)</td>
</tr>
</tbody>
</table>

a \( \chi^2, P < .05 \).
b \( \chi^2, P < .05 \).

COMMENT

We surveyed 2 populations of high-risk youths to identify variables that are associated with increasing stage of readiness to receive routine Chlamydia screening. We
found that stage of readiness varied greatly between groups (Table 3). On the one hand, DYS males were skewed toward contemplation and precontemplation, while Job Training females were skewed toward preparation and action. Job Training males, on the other hand, had a fairly even distribution across stages of readiness.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Stages Compareda</th>
<th>Adjusted Odds Ratio (95% Confidence Interval)b</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Action (n=22)</td>
<td>Preparation or Contemplation (n=97)</td>
</tr>
<tr>
<td>Model-adjusted $R^2=0.54$</td>
<td>13 (59)</td>
<td>29 (30)</td>
</tr>
<tr>
<td>Did not use condom at last intercourse</td>
<td>5.68 (1.30-24.86)c</td>
<td></td>
</tr>
<tr>
<td>Had physician’s appointment in past year</td>
<td>15 (68)</td>
<td>45 (46)</td>
</tr>
<tr>
<td>Had test for sexually transmitted disease in past year</td>
<td>2.53 (1.07-5.98)c</td>
<td></td>
</tr>
<tr>
<td>Perceived greater ease of completing steps necessary for</td>
<td>13.2 (4.2)</td>
<td>16.6 (7.1)</td>
</tr>
<tr>
<td>Chlamydia testing, d mean (SD) score</td>
<td>1.19 (1.04-1.37)c</td>
<td></td>
</tr>
<tr>
<td>Perceived fewer external facilitators to Chlamydia testing, e</td>
<td>18.0 (7.4)</td>
<td>14.8 (6.0)</td>
</tr>
<tr>
<td>mean (SD) score</td>
<td>0.89 (0.99-1.25)</td>
<td></td>
</tr>
<tr>
<td>Age, mean (SD)</td>
<td>19.6 (4.2)</td>
<td>18.6 (2.0)</td>
</tr>
<tr>
<td>Model-adjusted $R^2=0.22$</td>
<td>1.28 (0.94-1.72)</td>
<td></td>
</tr>
<tr>
<td>Action or Preparation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Model-adjusted $R^2=0.27$</td>
<td>10 (24)</td>
<td>1.26 (1.02-6.99)c</td>
</tr>
<tr>
<td>Did not use condom at last intercourse</td>
<td>27 (35)</td>
<td>4 (10)</td>
</tr>
<tr>
<td>Ever tested for Chlamydia</td>
<td>2.16 (1.23-3.81)f</td>
<td></td>
</tr>
<tr>
<td>Model-adjusted $R^2=0.40$</td>
<td>10 (24)</td>
<td>1.26 (1.02-6.99)c</td>
</tr>
<tr>
<td>Perceived Chlamydia infection as dangerous</td>
<td>98 (82)</td>
<td>22 (71)</td>
</tr>
<tr>
<td>Perceived fewer reasons not to get tested, d mean (SD) score</td>
<td>3.76 (1.12-12.58)c</td>
<td></td>
</tr>
<tr>
<td>Worried that urine might be tested for drugs</td>
<td>55.1 (18.0)</td>
<td>48.6 (19.1)</td>
</tr>
<tr>
<td>Willing to be tested with urethral swab</td>
<td>1.04 (1.01-1.07)</td>
<td></td>
</tr>
<tr>
<td>Model-adjusted $R^2=0.33$</td>
<td>31 (26)</td>
<td>2 (6)</td>
</tr>
<tr>
<td>Tested for Chlamydia in past year</td>
<td>1.88 (0.91-3.89)</td>
<td></td>
</tr>
<tr>
<td>Preferred pelvic examination to urine test for Chlamydia testing</td>
<td>29 (72)</td>
<td>57 (56)</td>
</tr>
<tr>
<td>Had physician’s appointment in past year</td>
<td>3.56 (1.16-10.94)c</td>
<td></td>
</tr>
<tr>
<td>Model-adjusted $R^2=0.35$</td>
<td>27 (68)</td>
<td>25 (25)</td>
</tr>
<tr>
<td>Perceived chance that partner could have Chlamydia infection</td>
<td>2.82 (1.64-4.86)</td>
<td></td>
</tr>
<tr>
<td>Tested for Chlamydia in past year</td>
<td>2.39 (1.04-5.49)</td>
<td></td>
</tr>
<tr>
<td>Perceived chance that partner could have Chlamydia infection</td>
<td>35 (88)</td>
<td>67 (66)</td>
</tr>
<tr>
<td>is likely</td>
<td>2.31 (1.03-5.17)</td>
<td></td>
</tr>
<tr>
<td>Model-adjusted $R^2=0.23$</td>
<td>9 (22)</td>
<td>2 (2)</td>
</tr>
<tr>
<td>Preferred pelvic examination to urine test for Chlamydia testing</td>
<td>4.0 (51)</td>
<td>17 (77)</td>
</tr>
<tr>
<td>Had physician’s appointment in past year</td>
<td>0.19 (0.38-0.95)</td>
<td></td>
</tr>
<tr>
<td>Condom not used at last intercourse</td>
<td>42 (53)</td>
<td>6 (27)</td>
</tr>
<tr>
<td>Model-adjusted $R^2=0.35$</td>
<td>21.2 (7.8)</td>
<td>16.0 (6.6)</td>
</tr>
<tr>
<td>Fewer perceived social consequences associated with Chlamydia</td>
<td>1.17 (1.05-1.29)</td>
<td></td>
</tr>
<tr>
<td>testing, d mean (SD) score</td>
<td>21.2 (7.8)</td>
<td>16.0 (6.6)</td>
</tr>
<tr>
<td>Perceived chance that partner could have Chlamydia infection</td>
<td>40 (51)</td>
<td>17 (77)</td>
</tr>
<tr>
<td>is likely</td>
<td>0.19 (0.38-0.95)</td>
<td></td>
</tr>
<tr>
<td>Condom not used at last intercourse</td>
<td>42 (53)</td>
<td>6 (27)</td>
</tr>
<tr>
<td>Model-adjusted $R^2=0.23$</td>
<td>25.8 (7.7)</td>
<td>29.3 (8.4)</td>
</tr>
<tr>
<td>Willingness to go to venues for Chlamydia testing, f mean (SD)</td>
<td>3.45 (1.36-8.77)</td>
<td></td>
</tr>
<tr>
<td>score</td>
<td>19 (36)</td>
<td>9 (10)</td>
</tr>
<tr>
<td>Willing to be tested with swab</td>
<td>5.10 (2.57-10.1)</td>
<td></td>
</tr>
<tr>
<td>Model-adjusted $R^2=0.23$</td>
<td>74 (67)</td>
<td>14 (45)</td>
</tr>
<tr>
<td>Perceived chance of ever having Chlamydia infection is likely</td>
<td>3.45 (1.36-8.77)</td>
<td></td>
</tr>
<tr>
<td>Willingness to go to venues for Chlamydia testing, f mean (SD)</td>
<td>19 (36)</td>
<td>9 (10)</td>
</tr>
<tr>
<td>score</td>
<td>25.8 (7.7)</td>
<td>29.3 (8.4)</td>
</tr>
<tr>
<td>Willingness to go to venues for Chlamydia testing, f mean (SD)</td>
<td>1.08 (1.02-1.15)</td>
<td></td>
</tr>
<tr>
<td>score</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 4. Adjusted Odds Ratios and Confidence Intervals for Variables Predicting Stage of Readiness

a Data are presented as number (percentage) unless otherwise indicated. Stages are as follows: action, already receiving routine screening; preparation, planning to start receiving routine screening; contemplation, might start receiving routine screening; precontemplation, not interested in receiving routine screening.

b Adjusted for race and ethnicity.

c $P<.05$

d Lower score indicates easier to complete (possible score, 9-45).

e Higher score indicates fewer facilitators (possible score, 8-40).

f $P<.01$

g Higher score indicates less endorsement (possible score, 16-80).
h $P<.005$

i Higher score indicates fewer consequences (possible score, 6-30).
j Lower score indicates more willing (possible score, 10-50).
The populations surveyed are at high risk for Chlamydia infection and for not accessing a timely diagnosis, given that little more than half had used a condom at last intercourse, more than a third reported having no personal physician, and 17% of females and 3% to 6% of males were infected with Chlamydia. Furthermore, more than half of the females and more than four-fifths of the males reported never having been tested for Chlamydia, including 14 of the 25 infected females (56%) and 9 of the 14 infected males (64%).

In contrast to the many differences seen between groups, all 3 groups provided similar ratings of venues where they would be willing to receive urine Chlamydia screening. The 2 most popular venues were traditional places where one might receive any type of medical care. Subsequent focus group discussions (not reported on herein) have touched on the desirability of receiving testing services in a traditional venue, since being observed entering one does not identify a person as seeking an STD test. The 3 least popular venues were places that might be convenient, but nontraditional, sites for receiving routine medical care. In addition, the 2 least popular venues may be unfavorable because they are so publicly visible.

Variables that predicted stage of readiness for routine Chlamydia screening (hereafter referred to as stage of readiness) fell into 2 categories: modifiable and nonmodifiable. For DYS males, the one modifiable variable predicting increased readiness was perceived likelihood of ever having a Chlamydia infection. If it is possible to increase these males’ perceived vulnerability to Chlamydia, it might be possible to influence their Chlamydia screening behavior by moving them from precontemplation to contemplation. With regard to Job Training females, our findings suggest that increasing females’ perception that their partner could bring an infection into the relationship, either from before they met or during their relationship, could move these females from preparation to action. However, it is not likely to move them from contemplation to preparation. Reducing females’ perception of social consequences due to testing could move them from contemplation to preparation.

Potential variables that could be targeted for an intervention to move Job Training males from preparation to action include focusing on lack of condom use as a risk factor for Chlamydia infection and emphasizing how easy it is to obtain a Chlamydia test. Finally, our findings suggest that emphasizing the danger of an untreated Chlamydia infection may help move Job Training males from precontemplation to contemplation.

Nonmodifiable variables that predicted an increased stage of readiness among DYS males included willingness to be tested for Chlamydia by means of a urethral swab and overall willingness to go to the venues listed in Table 2 for Chlamydia testing. Among male and female Job Training students, nonmodifiable variables predicting greater readiness were similar. Willingness to be tested with the more invasive Chlamydia test and having had a physician’s appointment in the past year predicted increased stage of readiness. Not surprisingly, having had a Chlamydia or other STD test in the past year predicted greater readiness for Chlamydia screening, suggesting that once this behavior is established, it may not be as difficult to maintain.

There are a few limitations to our study. We relied on self-report of previous screening and intention to receive screening. A future study that includes documentation of actual Chlamydia testing in an evaluation of predictors of stage of readiness would be worthwhile. Among the 3 groups surveyed, our response rate ranged from 48% to 59%. By far, the most common reason for refusal was lack of interest. Anecdotally, many Job Training students told us that they already had too much paperwork to complete on their admission date and did not want to complete an additional survey. Comparison of demographic variables between youths who agreed to participate and those who refused suggests some self-selection bias, which may limit our internal reliability. In addition, our findings may not be generalizable beyond the National Job Training and DYS settings; however, our study participants do represent hard-to-reach populations with high Chlamydia infection prevalence. Changes in screening behavior within these populations would positively affect their health and might have a similar effect on their sexual partners in the community.

In conclusion, we have identified several modifiable variables that could be targeted by interventions to increase young people’s readiness for routine Chlamydia screening. Given the adverse consequences of undiagnosed and untreated Chlamydia infections in adolescents and young adults, such interventions hold great promise.

Accepted for Publication: May 10, 2007.
Correspondence: Diane R. Blake, MD, Department of Pediatrics, University of Massachusetts Medical School, 55 Lake Ave N, Worcester, MA 01655 (Diane.Blake@umassmed.edu).

Author Contributions: Dr Blake had full access to all the data in the study and takes responsibility for the integrity of the data and the accuracy of the data analysis. Study concept and design: Blake. Acquisition of data: Blake and Lemay. Analysis and interpretation of data: Blake, Lemay, and Indurkhya. Drafting of the manuscript: Blake and Lemay. Critical revision of the manuscript for important intellectual content: Blake, Lemay, and Indurkhya. Statistical analysis: Indurkhya. Obtained funding: Blake. Study supervision: Blake.

Financial Disclosure: None reported.

Funding/Support: The project described in this article was supported by grant 5 K23 AI01750 from the National Institute of Allergy and Infectious Diseases.

Disclaimer: The contents of this article are solely the responsibility of the authors and do not necessarily represent the official views of the National Institute of Allergy and Infectious Diseases.

REFERENCES


Grown-ups never understand anything for themselves, and it is tiresome for children to be always and forever explaining things to them.

—From The Little Prince, by Antoine de Saint-Exupery, 1943