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## Health Care Seeking Behaviors Related to Sexually Transmitted Diseases among Adolescents

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### Introduction

Delayed seeking of health care may partially explain high rates of sexually transmitted diseases among adolescents.<sup>1,2</sup> Health care seeking refers to the interval between recognition of a health problem and its clinical resolution and to the accompanying cognitive and behavioral responses.<sup>3</sup> Health care seeking is a central issue in control of sexually transmitted diseases, since the duration of infection increases the probability of harmful sequelae and of transmission to others.<sup>4,5</sup>

Sexually transmitted disease-related health care seeking was examined among adolescents attending a public sexually transmitted disease clinic in Chicago, Ill. Care seeking was viewed as an interval requiring time for problem "appraisal" (assessment of the nature of the problem and the need for clinical care), as well as time to act on the decision to seek care.<sup>6</sup> Delay in obtaining care after the need for care was recognized was labeled as the "procrastination" interval, although some factors that may contribute to delay are not within a patient's control.<sup>2</sup>

### Methods

To be eligible to participate, individuals had to be less than 21 years of age and able to comprehend English. Symptomatic subjects were defined as those with penile or vaginal discharge, dysuria, or pelvic pain. Asymptomatic subjects were defined as those without genital symptoms who sought care after being informed of potential infection by partners or by public health personnel. Patients with genital warts or ulcers and those with a problem duration of more than 35 days were ineligible.

Eligible patients included 129 male adolescents and 194 female adolescents. Among those eligible, 79 male patients (61%) and 129 female patients (67%) participated. Nonparticipants did not dif-

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This paper was accepted May 31, 1996.

## ABSTRACT

**Objectives.** This study identified social, cognitive, and behavioral factors associated with how adolescents seek health care for sexually transmitted diseases.

**Methods.** Data for male and female adolescents (n = 208) attending a clinic specializing in sexually transmitted diseases were examined.

**Results.** Symptomatic female adolescents required greater time to obtain care than asymptomatic female adolescents or symptomatic male adolescents. Factors affecting duration of care seeking interval included perception of barriers to care, lower self-efficacy for response to a sexually transmitted disease, greater perceived seriousness of sexually transmitted diseases, previous history of sexually transmitted diseases, and stigma.

**Conclusions.** Improved secondary sexually transmitted disease prevention efforts among adolescents require reductions in barriers to care and improved symptom recognition by adolescents. (*Am J Public Health*. 1997;87:417–420)

**TABLE 1—Duration of Total Care Seeking, Appraisal, and Procrastination Intervals, by Sex and Symptom Status**

| Interval        | Male Adolescents                       |                                       | Female Adolescents                     |                                       |
|-----------------|--|---------------------------------------|--|---------------------------------------|
|                 | Asymptomatic<br>(n = 16),<br>Mean (SD) | Symptomatic<br>(n = 63),<br>Mean (SD) | Asymptomatic<br>(n = 40),<br>Mean (SD) | Symptomatic<br>(n = 89),<br>Mean (SD) |
| Total*          | 7.3 (6.1) <sub>ab</sub>                | 6.3 (4.3) <sub>a</sub>                | 5.8 (5.2) <sub>a</sub>                 | 9.6 (8.8) <sub>b</sub>                |
| Appraisal*      | 2.4 (4.4) <sub>ab</sub>                | 2.3 (3.4) <sub>a</sub>                | 2.4 (4.4) <sub>a</sub>                 | 4.9 (6.6) <sub>b</sub>                |
| Procrastination | 4.9 (3.6)                              | 4.0 (4.3)                             | 3.4 (3.3)                              | 4.6 (5.8)                             |

Note. Means not sharing a subscript significantly differ by Newman-Keuls test for multiple post hoc comparisons.

\* $P < .05$  (analysis of variance).

**TABLE 2—Behavioral Responses to Sexually Transmitted Diseases, by Sex and Symptom Status**

| Response                   | Male Adolescents         |                         | Female Adolescents       |                         |
|----------------------------|--------------------------|-------------------------|--------------------------|-------------------------|
|                            | Asymptomatic,<br>No. (%) | Symptomatic,<br>No. (%) | Asymptomatic,<br>No. (%) | Symptomatic,<br>No. (%) |
| Avoided sexual intercourse | 7 (44) <sup>a</sup>      | 44 (70)                 | 20 (48) <sup>b</sup>     | 61 (69)                 |
| Discussed problem          | 13 (81)                  | 53 (84)                 | 32 (80)                  | 77 (89)                 |
| With family member         | 4 (25)                   | 40 (64) <sup>c</sup>    | 16 (40)                  | 40 (45)                 |
| With partner               | 8 (50)                   | 19 (31)                 | 24 (35)                  | 49 (55)                 |
| With friend                | 3 (19)                   | 26 (41)                 | 14 (35)                  | 43 (48)                 |
| Self-treatment             |                          |                         |                          |                         |
| Nonprescription medication | 2 (13)                   | 10 (16)                 | 3 (8)                    | 15 (17)                 |
| Antibiotics                | 4 (27)                   | 8 (13)                  | 1 (3) <sup>d</sup>       | 8 (9)                   |
| Douche                     | ...                      | ...                     | 2 (5) <sup>c</sup>       | 23 (26)                 |
| Read printed material      | 4 (25)                   | 15 (24)                 | 12 (30)                  | 23 (27)                 |
| Waited for resolution      | 6 (38)                   | 17 (27)                 | 5 (13) <sup>c</sup>      | 36 (41)                 |

<sup>a</sup>The comparison between asymptomatic and symptomatic young men was significant at  $P < .05$ .

<sup>b</sup>The comparison between asymptomatic and symptomatic young women was significant at  $P < .05$ .

<sup>c</sup>The comparison between symptomatic young men and symptomatic young women was significant at  $P < .05$ .

<sup>d</sup>The comparison between asymptomatic young men and asymptomatic young women was significant at  $P < .05$ .

fer from participants in terms of presenting complaints. This study was approved by the institutional review committees of Indiana University/Purdue University at Indianapolis and the Chicago Board of Health.

Subjects referred to a calendar in response to self-administered questionnaire items about responses to a "problem" related to sexually transmitted diseases. Total care seeking interval was defined as the number of days between problem recognition (i.e., symptom onset or being told of being a sexually transmitted disease contact) and the clinic visit. The appraisal interval was defined as the interval between problem recognition and

the decision to seek care; this interval was calculated as the difference between the total care seeking interval and the procrastination interval. The procrastination interval was defined as the number of days between the decision to seek care and the clinic visit.

Behavioral responses to the sexually transmitted disease-related problem were assessed by items addressing sexual activity (i.e., not having sex), discussion of the problem with others (including family members, sex partners, and friends), self-treatment (use of nonprescription medications, use of "leftover" antibiotics or antibiotics obtained from another per-

son) or douching (women only), information seeking (reading about the problem), and waiting for resolution.

Social support measures included family support (scale range = 4 to 16,  $\alpha = .83$ ) and friend support (scale range = 2 to 8,  $\alpha = .82$ ). Cognitive measures related to sexually transmitted diseases included pragmatic barriers to care (scale range = 4 to 20, higher scores representing greater perception of barriers;  $\alpha = .66$ ), such as knowing clinic operating hours or location; knowledge concerning sexually transmitted diseases (number correct of nine true-false items); and sexually transmitted disease self-efficacy (scale range = 5 to 25, higher scores representing greater self-efficacy;  $\alpha = .68$ ), which assessed confidence in one's ability to recognize and respond to symptoms related to sexually transmitted diseases. Other cognitive measures were perceived seriousness of sexually transmitted diseases (scale range = 2 to 10, higher scores representing greater perceived seriousness;  $\alpha = .60$ ); stigma (scale range = 3 to 15, higher scores reflecting greater perceived stigma;  $\alpha = .83$ ), which assessed shame and guilt associated with sexually transmitted diseases; and self-reported history of sexually transmitted diseases (coded as no vs yes).

Dependent variables were the total care seeking, appraisal, and procrastination intervals. A four-step hierarchical multiple linear regression<sup>7</sup> was used to assess relationships between household income (step 1), social support (step 2), symptom status (step 3), and cognitive measures related to sexually transmitted diseases (perceived barriers, knowledge, self-efficacy, seriousness, and sexually transmitted disease history; step 4). Statistical significance of individual measures is reported only if the overall block of measures was significant. Because of the relatively small sample of male adolescents and the commitment to a fixed analytic model, two levels of statistical significance were defined to enhance statistical power:  $P$  values between .05 and .1 and values less than .05.

## Results

Average ages were 18.0 and 17.6 years for male and female subjects, respectively. More than 96% of both the male and female adolescents were African American. More than half of each gender reported at least one previous sexually transmitted disease. Median incomes of the census tracts where subjects resided

TABLE 3—Predictors of STD-Related Care Seeking: Hierarchical Multiple Linear Regression

|                              | Total Interval   |                    | Appraisal Interval |                    | Procrastination Interval |                    |
|------------------------------|------------------|--------------------|--------------------|--------------------|--------------------------|--------------------|
|                              | Male Adolescents | Female Adolescents | Male Adolescents   | Female Adolescents | Male Adolescents         | Female Adolescents |
| Step 1                       |                  |                    |                    |                    |                          |                    |
| Household income             | .06              | -.19**             | -.06               | -.27*              | .03                      | .06                |
| R <sup>2</sup> change        | .003             | .03**              | .004               | .08*               | .001                     | .004               |
| Step 2                       |                  |                    |                    |                    |                          |                    |
| Family support               | .03              | -.17               | -.09               | -.23*              | .12                      | .06                |
| Friend support               | -.14             | -.01               | -.24               | -.08               | -.003                    | -.06               |
| R <sup>2</sup> change        | .02              | .03                | .07                | .06*               | .01                      | .01                |
| Step 3                       |                  |                    |                    |                    |                          |                    |
| Symptoms (no/yes)            | .02              | .21*               | .04                | .19*               | .01                      | .10                |
| R <sup>2</sup> change        | .001             | .04*               | .002               | .04*               | .0001                    | .01                |
| Step 4                       |                  |                    |                    |                    |                          |                    |
| Practical barriers           | .22**            | -.02               | .16                | -.14               | .19                      | .10                |
| STD knowledge                | .10              | .21*               | .11                | .23*               | .06                      | .00                |
| STD self-efficacy            | -.34*            | -.01               | -.36*              | -.03               | -.19                     | .00                |
| STD seriousness              | .26**            | -.27*              | .39*               | -.18*              | .05                      | -.18               |
| STD stigma                   | .11              | .30*               | .05                | .35*               | .12                      | .03                |
| STD history (no/yes)         | .07              | .21*               | -.02               | .13                | .11                      | .25                |
| R <sup>2</sup> change        | .22*             | .19*               | .27*               | .16*               | .09                      | .10                |
| Overall model R <sup>2</sup> | .25**            | .30*               | .34*               | .33*               | .11                      | .12                |

Note. Unless otherwise indicated, measures were scored from "lower" to "higher." Values (other than R<sup>2</sup> change and model R<sup>2</sup> values) are partial standardized regression coefficients. STD = sexually transmitted disease.

\*P < .05; \*\* .05 < P < .1.

were \$16 221 (male subjects) and \$17 151 (female subjects). Eighty percent of the male subjects (63/79) and 69% (89/120) of the female subjects were symptomatic.

#### Duration of Care Seeking Interval

Total care seeking, appraisal, and procrastination intervals by gender and symptom status are shown in Table 1. Symptomatic female adolescents reported significantly longer total care seeking and appraisal intervals than asymptomatic female adolescents or symptomatic male adolescents. The procrastination interval did not differ among the groups.

Overall, 38% (30/79) and 32% (41/129) of male and female subjects, respectively, obtained care within 3 days of problem recognition; 27% (21/79) of male subjects and 34% (44/129) of female subjects required more than 7 days to obtain clinical care. The remainder of the subjects required 4 to 7 days to obtain care ( $P > .05$  for gender difference; data not shown).

#### Behavioral Responses

Avoiding sex and discussing the sexually transmitted disease-related problem with others were common behavioral responses to the problem (Table 2). Twenty-six percent (23/129) of symptom-

atic young women reported douching in response to symptoms. Nonprescription medication use (i.e., analgesics or laxatives) and antibiotic use were reported by fewer than 25% of subjects.

#### Predictors of Duration of Care Seeking Interval

Among male subjects, only cognitive variables (greater perceived barriers, lower self-efficacy, and higher perceived seriousness) were related to longer duration of the total care seeking and appraisal intervals (Table 3). Among female subjects, lower household income, being symptomatic, and cognitive variables (greater knowledge, higher seriousness, greater stigma, and previous sexually transmitted disease) were associated with prolonged care seeking intervals. Less family support was associated with prolonged appraisal among young women. These models explained 25% to 34% of the variance in the total care seeking and appraisal intervals for both male and female subjects. No variables were associated with the procrastination interval for either group.

#### Discussion

Several studies of sexually transmitted disease-related care seeking among

adults report that women delay care longer than men<sup>8-10</sup>; adolescents resemble adults in this respect. Difficulty in distinction of abnormal from normal genital discharges may explain delays in care seeking by symptomatic women.<sup>11-13</sup> The significantly longer appraisal interval of symptomatic young women (as compared with asymptomatic young women and symptomatic young men) is consistent with this perspective.

Adolescents' behavioral responses to a sexually transmitted disease-related problem also resembled adult patterns in that avoiding sex and discussing the problem with others were common.<sup>8-10,14</sup> As with most health-related problems,<sup>15,16</sup> many adolescents turn to family members for help with problems related to sexually transmitted diseases. Self-treatment with antibiotics or douching was reported by relatively few subjects; however, such behaviors are important because of potential interference with diagnostic tests and the association of douching with pelvic inflammatory disease.<sup>17</sup>

Cognitive factors were the most important predictors of duration of care seeking interval, although patterns differed for male and female subjects. For young men, a prolonged care seeking interval was associated with perceptions

of reduced capacity for response (i.e., by perception of barriers to care and lower self-efficacy for response to symptoms), as well as perceived seriousness of sexually transmitted diseases. Perceived seriousness is associated with delayed care seeking for sexually transmitted diseases among adults.<sup>9</sup>

For adolescent women, a prolonged care seeking interval was associated with greater knowledge and experience of sexually transmitted diseases (i.e., by increased sexually transmitted disease knowledge and a past history of sexually transmitted diseases), as well as a greater sense of sexually transmitted disease-associated stigma. These cognitive factors were independent of symptom status. Such factors may contribute to the sense of invulnerability associated with prolonged care seeking intervals among adults.<sup>9</sup>

This study was limited by an ethnically homogeneous clinical sample derived from a single geographic location. The variance accounted for was modest (i.e., 25% to 30%). Measurement of a larger range of influences on care seeking (such as AIDS-related anxiety and perceived sexually transmitted disease risk) could increase understanding of these important issues, although more complex models of care seeking also may have limited explanatory power.<sup>9</sup> Nonetheless, reduction of barriers to care, improved patient recognition of sexually transmitted disease-related symptoms, reduction of stigma, and improved secondary preven-

tion efforts with previously infected individuals could contribute to reductions in durations of infectiousness among adolescents with sexually transmitted diseases, with consequent reductions in sequelae and disease transmission. □

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