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Gynecologic Symptoms and Sexual Behaviors among Adolescent Women

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Abstract

Study Objective—Little is understood either about the prevalence of gynecologic symptoms such as vulvo-vaginal pain, pelvic cramps and vaginal discharge, or about the relationship of symptom duration to event-level sexual behaviors.

Design/Setting/Participants/Main Outcome Measures—Data were daily diaries collected from an ongoing, longitudinal cohort with the three symptom variables; symptom duration was calculated and event level sexual behaviors were included.

Results—Reported relatively frequently, single symptoms had positive and negative effects while multiple symptoms and duration of symptoms decreased likelihood of all non-coital sexual behaviors.

Conclusions—Gynecologic symptoms influence the likelihood of sexual behaviors suggesting a complex relationship between the occurrences.

Keywords

vulvo-vaginal pain; pelvic cramps; vaginal discharge

Gynecological symptoms such as vulvo-vaginal pain, pelvic cramps and vaginal discharge are not necessarily due to serious pathology but are signals that require interpretation, and, potentially, self-treatment or clinical care-seeking¹. Sexually active women must interpret symptoms within the context of explanatory models related to menstruation, sexual activity, potential for sexually transmitted infection, potential for pregnancy, and contraceptive use. In particular, sexual activities may be altered while symptoms are being evaluated and treated. For example, most women defer sexual intercourse during menstruation or during treatment for sexually transmitted infection^{2,3}.

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Most research addressing the frequency of gynecologic symptoms and their effect on sexual behavior utilizes samples of adult women. Symptoms are often under/unreported due to a wide variation in the definition of normal physiology, a desire for self-treatment, or reluctance to report such concerns to medical personnel^{4, 5}. Adolescent women may also have less regular, less well-established patterns of sexual activity⁶. We have shown that coitus among adolescent women is less likely during vaginal bleeding although other sexual behaviors such as fellatio or anal intercourse may become more likely^{7, 8}. Similar patterns may extend to other gynecologic symptoms as well.

Therefore, the objective of this research was (1) to describe the prevalence and duration of vulvo-vaginal pain, pelvic cramps and vaginal discharge; and, (2) to evaluate relationship of symptom duration to event-level sexual behaviors.

Methods

Study Design and Data

Data were collected as part of a longitudinal study of sexual relationships, sexual behaviors and sexually transmitted infections among young women in middle- to late-adolescence. The larger study (initiated in 1999; ongoing at the time of analyses) included sexual diaries assessing day-to-day occurrences of gynecologic symptoms, mood and partner perceived interaction and sexual and contraceptive behaviors. Diaries were kept in alternating 84-day time frames over a period of up to 60 months. A more detailed description of these methods is available elsewhere⁹.

This research was approved by the institutional review board of Indiana University/Purdue University at Indianapolis - Clarian. Informed consent was obtained from each participant and permission obtained from a parent or legal guardian.

Participants

Subjects (N=387) were adolescent women receiving health care in one of three primary care clinics in Indianapolis, serving primarily lower- and middle-income residents in areas with high rates of teen pregnancy and sexually transmitted infection. Participants were eligible if they were 14 to 17 years of age, spoke English, and were not pregnant at study enrollment. Most (89%) of the participants were African-American, and all reported at least one episode of partnered sexual activity during the study.

Measures

Predictor Variables

Daily diaries recorded the occurrence of gynecologic symptoms: vulvo-vaginal pain (no/yes), pelvic cramps (no/yes) and vaginal discharge (no/yes). Using these dichotomous items, we calculated the number of consecutive days, including the current day, on which each symptom was recorded. This resulted in three additive, continuous variables: *vulvo-vaginal pain duration*, *pelvic cramp duration* and *vaginal discharge duration*. Using the same procedure, we also calculated the duration of days on which two or three symptoms were recorded: *multi symptom duration*. Thus, four symptom duration variables were constructed.

All models also controlled for demographic, relational, situational and behavioral influences, including: age (years), vaginal bleeding (no/yes), alcohol use (no/yes), marijuana use (no/yes), positive mood (3-items; $\alpha=0.86$; e.g., "I felt happy"), negative mood (3-items; $\alpha=0.83$; e.g., "I felt unhappy"), feeling in love (1 item) and sexual interest (1 item), partner support (4-items; $\alpha=.95$; e.g., "He let me know he cared about me"), partner negativity (5-items; $\alpha=.83$; e.g.,

“He made me feel bad”), recent coitus (coitus in the past 7 days: no/yes) and recent condom use (condom use in past 7 days: no/yes).

Outcome Variables

We assessed the influence of the four symptom duration variables on event level sexual behaviors, including: coitus (no/yes), condom use during coitus (no/yes), fellatio (no/yes), cunnilingus (no/yes), anal sex (no/yes), touching a partner’s genitals (no/yes) and having one’s genitals touched (no/yes). Multiple behaviors on a specific day were possible; most non-coital behaviors occur in combination with other behaviors⁸. However, alternative models using combinations of behaviors did not appreciably differ from the results presented here (data not shown; available from first author).

Procedure

The unit of analysis was individual diary days; subjects contributed one day per each sexual partner reported. For each sexual behavior outcome, two models were run; we first included all three single symptom duration variables and then included the multi symptom duration variable.

Multivariate logistic regression, with generalized estimating equations adjustment for repeated within-subject observations¹⁰, was used to assess the influence of event level symptom duration on event level sexual behaviors. All estimates were generated in SUDAAN, 9.0¹¹ and were considered significant at $p < .05$.

Results

Participants recorded 87,311 diary days; the majority (87%; 76,135/87,311) was associated with no symptoms. Two percent of all diary days (1,654/87,311) were associated with vulvo-vaginal pain, and about six percent of days were associated with either pelvic cramps (5,139/87,311) or with vaginal discharge (5,680/87,311). Of days on which cramping was reported, 58.3% (2996/5139) were associated concurrently with vaginal bleeding; 41.7% (2143/5139) were associated without concurrent vaginal bleeding ($X^2(df) = 1575.889(1)$, $p < .001$).

When symptoms did occur, most days (10%: 8,731/87,311) were associated with only one symptom. Less than three percent of days (2,445/87,311) were associated with the occurrence of two or more symptoms. On average, vulvo-vaginal pain duration was 8.79 consecutive days ($SD = 16.31$), pelvic cramps duration was 9.48 consecutive days ($SD = 13.39$), and vaginal discharge duration was 7.38 consecutive days ($SD = 13.37$). Multiple symptoms were reported on an average of 11.5 consecutive days ($SD = 17.03$).

Controlling for vaginal bleeding, mood, partner effects, substance use and usual behaviors, longer duration of vulvo-vaginal pain was associated with increased likelihood of cunnilingus (Odds Ratio[OR]=1.09; 95% confidence interval[CI]: 1.03, 1.17), but with decreased likelihood of coitus (OR=0.93; 95% CI: 0.88, 0.98), fellatio (OR=0.93; 95% CI: 0.91, 0.96), touching a partner’s genital (OR=0.92; 95% CI: 0.89, 0.95) and having one’s genitals touched (OR=0.94; 95% CI: 0.90, 0.89). Longer duration of vaginal discharge was associated with decreased likelihood of cunnilingus (OR=0.88; 95% CI: 0.83, 0.92), anal sex (OR=0.63; 95% CI: 0.40, 0.98), and coitus with a condom (OR=0.80; 95% CI: 0.70, 0.91). A longer duration of two or three symptoms decreased the likelihood of all non-coital sexual behaviors (OR=0.86-0.96), but was not associated with coitus, with or without a condom.

Discussion

Vulvo-vaginal pain, pelvic cramps, and vaginal discharge are reported relatively frequently by adolescent women, accounting for about 13% of diary days. Although due to unknown etiology and likely from sources other than simply dysmenorrhea, these gynecologic symptoms do appear to affect sexual behaviors. In fact, patterns of sexual behavior were altered around the presence and duration of a given symptom. For example, vulvo-vaginal pain was associated with increased likelihood of cunnilingus but decreased likelihood of coitus; it may be that young women avoid coitus to avoid exacerbating their pain, but seek cunnilingus to alleviate it. Additionally, vaginal discharge was associated with increased likelihood of fellatio but decreased likelihood of cunnilingus, anal sex, or coitus with a condom. Adolescent women may feel that discharge must be concealed, and offer fellatio as a substitute for other sexual activities in order to protect this concealment. Pelvic cramps were associated with decreased likelihood of coitus, independent of the presence of bleeding. Having two or three symptoms decreased the likelihood of all sexual behaviors, suggesting that young women appropriately defer sexual activity in the presence of potentially serious situations.

Limitations of study design and sample should be considered. First, the research sample was recruited from clinics and was relatively homogeneous in terms of race/ethnicity, socio-economic status, and geographic residence. This means that the sample is not representative of all adolescent women; however, the data do point to gynecological issues pertinent to all adolescent women.

Our findings suggest a complex relationship of gynecologic symptoms with sexual behavior, and provide useful insights into the ways young women organize their sexual behaviors in the presence of symptoms. The data also suggest that medical professionals could counsel young women in identifying and treating gynecologic symptoms while facilitating open dialogue concerning their sexual health.

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