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# Contraceptive needs of women seeking care from a publicly-funded sexually transmitted infection clinic

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## Abstract

**Objectives—**To determine the contraceptive needs (including emergency contraception (EC)) of women seeking care from a publicly-funded sexually transmitted infection (STI) clinic and to better understand women's knowledge of and attitudes towards EC.

**Methods—**An anonymous survey was administered to 197 women seeking services at one Chicago Department of Public Health STI clinic.

**Results—**After excluding women unlikely to become pregnant within the next year because of age, sexual orientation, hysterectomy, and those that desired pregnancy (n=47), data from 150 women were available for analysis. Thirteen percent were using "very effective" contraception (intrauterine contraception, implant, or sterilization) and 26% were using "effective" contraception (contraceptive pill, patch, ring or injectable). Approximately 23% (95% CI 16.5–30.0%) may have benefited from immediate use of EC as they reported at least one act of unprotected intercourse within the past 5 days.

**Conclusion—**Many women seeking care from public STI clinics are at high risk of unintended pregnancy. A substantial number of women have an immediate need of EC at the time of their clinical visit. Efforts are needed to improve provision of EC as well as effective ongoing contraception for this population.

### Keywords

contraception; sexually transmitted infection; post-coital contraception; morning after pill; public health clinic



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## 1. Introduction

Women who seek care for sexually transmitted infections (STI) are at particularly high risk of unintended pregnancy. Previous studies have found that women who have sex without a condom (which increases risk of STI) are more likely to have sex without any form of contraception (which increases risk of pregnancy) [1, 2]. Despite this, most United States (US) public health and community clinics have separate funding streams for STI treatment and family planning, which complicates the integration of services [3, 4]. Many providers who treat STIs recommend prevention of STI transmission by use of barrier methods but spend little time discussing other more effective contraceptive methods [5, 6].

Clinicians also rarely discuss “what to do if a condom breaks” or provide information about emergency contraception (EC) [7]. Because of a limited window (up to five days after unprotected intercourse) during which EC can be used to prevent pregnancy, the 2006 STI Treatment Guidelines issued by the Centers for Disease Control and Prevention (CDC) recommend EC counseling and provision as part of comprehensive STI care [8]. This guideline recognizes that for women who have recently had unprotected intercourse, EC can be an urgent issue. While a previous US-based study found that 80% of women diagnosed with an STI would be interested in an advance supply of EC [1], this has not become routine practice for women seeking STI services. Unfortunately, prior studies have demonstrated that women referred from US STI clinics for family planning services rarely follow up [1, 9, 10]. As a result, referral to family planning clinics for women seeking publicly funded STI services has not been shown to have significant impact on rates of unintended pregnancy [5]. Rather, research indicates that integrating contraception services into STI clinics would be beneficial [6, 11–14].

The objectives of this study were therefore to determine the contraceptive needs (including immediate need for emergency contraception) of women seeking care from a publicly-funded STI clinic. Given the controversy that has surrounded EC, we also aimed to better understand women’s knowledge of and attitudes towards EC and to assess whether women served by this STI clinic would know how or when to use EC if it were needed.

## 2. Materials and Methods

All women seeking STI clinical services at one of the five STI specialty clinics of the Chicago Department of Public Health (CDPH) in Chicago, Illinois, were eligible to participate in this study. The CDPH STI clinics serve approximately 31,000 patients annually. Although other CDPH specialty clinics require payment for services, the STI specialty clinics offer care to patients regardless of their ability to pay [15]. The STI clinic chosen for this study is located in a predominately low-income African American neighborhood and serves approximately 10,000 patients per year, 43% of whom are female younger than 50 years of age. Consecutive female patients who registered at this clinic between November 2008 and January 2009 were approached on a convenient sample of days for potential study participation. The study was approved by the Institutional Review Boards of the University of Illinois-Chicago and the Chicago Department of Public Health. All participants provided written informed consent.

A survey instrument consisting of 41 questions adapted from prior EC surveys [16, 17] was administered by a research assistant in order to better understand the contraceptive practices of women seeking STI services in the public health setting, and to evaluate their knowledge, attitudes and need for emergency contraception. These items were pilot-tested in two separate phases before full implementation. The first phase of piloting involved use of a “verbal probing technique” with 10 patients at a publicly funded family medicine clinic in

order to collect information about variations in response, question comprehension, task difficulty, and respondent interest and attention, as well as thoughts about the survey process by the interviewing research assistant [18]. The second phase of piloting consisted of survey instrument revision followed by re-piloting for question comprehension with 10 patients in the target population. The PI then made further adjustments after re-piloting prior to full-scale implementation of the final survey instrument.

Each respondent took an average of 20 minutes to complete the final survey. We asked about the use of 14 different contraceptive methods, including EC and offered four responses (“never used”, “used in past 6 months”, “used sometime in lifetime more than 6 months ago”, and “not sure”). We also asked about unprotected sex within 5-days of their clinic visit and during the month prior to the present clinic visit. Use of EC within the prior month was also assessed. In addition, we collected demographic information such as age, race/ethnicity, parity, religion, household income, education, marital status, employment status and zip-code of primary residence. We also asked about health insurance, past use of public health STI clinical services and ability to pay for EC. Participants were asked about their reproductive histories, current pregnancy intentions, and interest in learning more about EC. Participants were allowed to complete the survey immediately before or after they saw their clinician. After completion of the survey, all participants were given verbal information about EC; those participants who expressed interest in EC were referred to a CDPH nurse practitioner who counselled and provided them with a complimentary packet of EC. Women who declined to participate in the study were asked to complete a 6-item non-participation questionnaire.

Our sample size selected allows point estimates of ± 6% at 95% confidence for our primary outcome, proportion of women with unmet need for contraception [19]. Statistical analyses were performed using SAS statistical software version 9.2 (SAS Institute Inc., Cary, NC) and SPSS version 14.0 (SPSS Inc., Chicago, IL). We used descriptive statistics to characterize the sociodemographic and reproductive characteristics of participants. We assigned contraceptive effectiveness according to guidelines provided by the World Health Organization [20], which classify intrauterine contraception (IUD), contraceptive implants, tubal sterilization and vasectomy as “very effective”, and oral contraceptive pills, transdermal patch, vaginal ring and injectables as “effective”. We tabulated knowledge of and attitudes toward EC. We also evaluated the number of women who reported unprotected sex within 5 days prior to their clinical visit and thus might have benefited from EC at that visit. We used multivariate logistic regression to examine variables associated with those who may have benefited from immediate use of EC (i.e., had unprotected sex within 5 days prior to their clinical visit). Because of the exploratory nature of this study, we included all variables with a $p < 0.20$ in bivariate analyses in our multivariate analyses. A stepwise forward logistic regression was conducted after checking for interactions and correlations of all potential covariates.

## 3. Results

We approached 337 women who sought STI clinical services at the participating Chicago Department of Public Health (CDPH) STI clinic to participate in the study. Of these, completed surveys, producing a 58% response rate. Demographics between non-participants and participants did not differ significantly. We excluded from further analyses of emergency contraception need and contraceptive use women who were trying to get pregnant (n=27), and those unlikely to become pregnant within the next year due to hysterectomy (n=3), age over 45 (n=14) or being a lesbian (n=3). Although twenty women younger than age 45 had undergone a tubal ligation, we kept them in the analysis because

we wanted to determine if associations exist regarding women who choose “very effective” contraceptive methods.

The 150 women included in this analysis were predominantly young, minority women, with little education (Table 1). Although the majority (65%) reported having a regular source of care, only 46% reported having either private or public health insurance. Sixty-four percent had visited the CDPH STI clinic within the prior year. Only 4% (n=6) believed they were infertile, but 23% (n=35) stated that they felt they were unlikely to become pregnant after having intercourse without contraception.

Table 2 shows birth control methods used by the respondents. Twenty-two women (15%) reported no contraception use within the 6 months prior to the interview. An additional 50 women (33%) reported intermittent use of contraception within the prior 6 months, primarily with condoms (44/50) or withdrawal (27/50). Only 13% reported using “very effective” contraception, and 26% were using “effective” contraception. Race, education and insurance status were not associated with use of a “very effective” contraceptive; however, women over 30 years of age were slightly more likely to choose a “very effective” contraceptive method (O.R. 1.09, 95% CI 1.01–1.18) than younger women.

Most respondents (79%; 118/150) had heard of EC. Of women who were aware of EC, almost half (56/118) knew that levonorgestrel EC was available from pharmacies without a prescription. Fourteen percent (17/118) had ever used EC. Seven reported having used EC within the past 6 months. About half (54%; 64/118) thought that EC was somewhat or very safe, yet 48% of women (57/118) thought EC would cause birth defects, and 33% (39/118) were unsure whether EC caused birth defects. Forty-three percent (51/118) thought that EC causes miscarriage. About 41% (48/118) knew that women have up to 72–120 hours after intercourse to use EC. A substantial number of women (22%; 26/118) reported having wanted to use EC at some time in the past when they could not. The most common reasons given for not having used EC at a time it was felt to be needed were that (1) the woman did not know how or where to obtain EC (10/26) or (2) the woman found EC too expensive (5/26). Six percent (7/118) currently had EC at home.

A significant number of women who were trying to avoid pregnancy reported at least one act of unprotected intercourse within the past 5 days (35/150 or 23%; 95% CI, 16.5–30.0%), and thus may have benefited from immediate use of EC. Two-thirds of women (60%; 95% CI 52.2–67.8%) reported having unprotected sex in the prior month, but only a small number of women (2.6%; 95% CI.08–5.2%) reported using EC in the prior month. Almost all women surveyed (94.6%; 141/150), indicated that they thought it would be beneficial to receive additional information about EC as part of their clinical visit and the majority (78.0%; 117/150) thought that the STI clinic should give patients an advanced supply of EC.

Table 3 demonstrates sociodemographic and clinical characteristics associated with women who had an immediate need for EC at the time of their visit to the STI clinic. In the multivariate model, when adjusted for age and race/ethnicity, women who were married or living with their sex partner were more likely to have an immediate need for EC (O.R. 4.0, 95% CI 1.4–11.8).

## 4. Discussion

This study determined the contraceptive needs (including immediate need for emergency contraception) of women seeking care from a publicly-funded STI clinic. We also aimed to better understand women’s knowledge of and attitudes towards EC and to assess whether women served by this STI clinic would know how or when to use EC if it were needed. The results indicate that many women were at risk of unintended pregnancy. Of women who

were trying to avoid pregnancy, almost one in four might have benefited from immediate use of EC at the time of their STI clinical visit. These findings support the CDC's 2006 guidelines which state that clinicians providing STI care should assess need for contraception and provide EC when appropriate.

Older reports of pregnancy prevention practices of women seeking STI services include a 1985 study conducted in Nashville, TN which reported that 87% of respondents were using some form of contraception [21]. However, a study conducted in 1987 by Upchurch et al. [12] found that almost half (46%) of women at a Baltimore STI clinic were not using contraception. In our sample, 15% of respondents stated they had not used any contraception within the prior 6 months, while 33% reported only intermittent use. While the majority of women in Upchurch's study reported using oral contraceptive pills (34%) [12], the most commonly used methods in our study were condoms (61%), followed by withdrawal (24%); only 10% of our respondents reported oral contraceptive use. The prevalence of condom use reported by this population is similar to women attending a Denver-based public health STI clinic [2], but is substantially higher than the 11% of women who report condom use in a nationally representative survey (2002 NSFG) [22]. Since the CDPH Specialty STI clinics allow patients to take as many condoms as they would like at no charge, the ease in which they are obtained may explain why condoms are most commonly used by respondents. The high rate of condom use may also reflect long-standing successful clinician risk-reduction efforts to prevent further transmission of STI in this high-risk population. Unfortunately, the prevalence of withdrawal reported by this population is also significantly higher than the 3% reported in the 2002 NSFG [22]. Reasons for the chosen methods of birth control were not explored in this present study.

A study by Shlay and colleagues [5] found some benefits for integrating contraception care into STI pubic health clinics. Although not statistically significant, unintended pregnancy rates appeared to decrease when women were given routine STI care, an initial birth control method and referral to primary care for ongoing family planning services, when compared to women who were provided routine STI care only. In Shlay's study, women who reported no contraceptive use at last sex were almost twice as likely to have a subsequent unintended pregnancy as those using contraception [23]. Considering that 23% of our respondents reported no contraceptive use despite having intercourse within 5 days of their clinic visit, EC administration could potentially reduce immediate risk of unintended pregnancy, although a routine method of contraception will likely also be needed to reduce rates of unintended pregnancy at a population level.

We did not track participants in our study who expressed interest in EC and were subsequently referred to a CDPH nurse practitioner who counselled and provided them with a complimentary packet of EC. Women in our study seemed interested in learning more about EC; a large number thought the STI clinic should provide an advance supply of EC to patients. Nonetheless, our study suggests that many knowledge gaps about EC persist; of women who had heard of EC, only about half had proper knowledge regarding its availability, timing, and safety. Our findings are only slightly better than those from an earlier study conducted in two urgent care clinics in California that reported that only one-third of participants had correct knowledge regarding the timing, safety, or effectiveness of EC [24]. The need for further education about EC is evident and could have an impact on its use.

Our study is not without limitations. First, respondents self-reported their behaviors. Self-reports of unprotected sex likely underestimate true behavior. Second, the generalizability of our findings may be limited by the fact that this study was conducted at only one public health STI clinic and may not be relevant to other populations or clinics. Third, our study is

limited by our lack of funding for follow-up of participants who met with a clinic nurse practitioner for complimentary EC. Without follow up information, it is unclear whether women who were offered EC in this setting would have actually used it, although most respondents thought EC would be a benefit to clinical services offered in the STI clinic.

In conclusion, women seeking care from publicly-funded STI clinics remain at high risk of unintended pregnancy. A substantial number of women are in immediate need of EC at the time of their STI visit. Efforts are needed to improve provision of EC as well as ongoing contraception for this population.

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**Table 1**

Sociodemographic and health-related characteristics of study participants

| Characteristic: | n=150 | % |
|---|---|---|
| **Age** | | |
| 15–17 | 13 | 8.7 |
| 18–24 | 86 | 57.3 |
| 25–30 | 30 | 20.0 |
| 31–35 | 10 | 6.7 |
| 36–45 | 8 | 5.3 |
| **Race/Ethnicity** | | |
| White | 4 | 2.7 |
| Black | 129 | 86.0 |
| Latina | 6 | 4.0 |
| Mixed | 7 | 4.7 |
| Other | 2 | 1.3 |
| **Marital Status** | | |
| Single, never married | 121 | 80.7 |
| Single, living with partner or married | 19 | 12.7 |
| separated, divorced or widowed | 8 | 5.3 |
| **Education** | | |
| less than high school | 61 | 40.7 |
| high school graduate | 31 | 20.7 |
| vocational school or some college | 41 | 27.3 |
| college degree or greater | 17 | 11.3 |
| **Religious Affiliation** | | |
| Catholic | 10 | 6.7 |
| Protestant-Christian | 81 | 54.0 |
| Other | 3 | 2.0 |
| None | 38 | 25.3 |
| Missing | 18 | 12.0 |
| **Attendance at Religious services** | | |
| Once a month or less | 79 | 52.7 |
| Twice a month or more | 58 | 38.7 |
| **Income** | | |
| <$20,000 | 53 | 35.3 |
| $20,001–$30,000 | 20 | 13.3 |
| $30,001–$40,000 | 7 | 4.7 |
| >$40,001 | 17 | 11.3 |

| Characteristic: | n=150 | % |
|---|---|---|
| Missing | 53 | 35.3 |
| **Private or Public Health Insurance** | | |
| Yes | 69 | 46.0 |
| **Reproductive History** | | |
| Prior pregnancy | 94 | 62.7 |
| Prior abortion | 62 | 41.3 |
| Prior STI | 104 | 69.3 |

**Table 2**

Contraceptive use within prior six months by women seeking care from Chicago Department of Public Health STI Clinic

| | N | (%) |
|---|---|---|
| **Non-users** | 22 | (15) |
| **Users** | | |
| Methods:[a] | | |
| Tubal Ligation | 9 | (6) |
| IUD | 9 | (6) |
| Implant | 1 | (.7) |
| Oral Contraceptive Pill | 15 | (10) |
| Injectable | 15 | (10) |
| Transdermal Patch | 4 | (2.7) |
| Vaginal Ring | 5 | (3.3) |
| Condoms | 91 | (61) |
| Withdrawal | 36 | (24) |
| Periodic Abstinence | 4 | (2.7) |

[a]Not mutually exclusive

**Table 3**

Sociodemographic and clinical characteristics associated with immediate need for EC at STI Clinic Visit

| Characteristic | N=35* | | |
|---|---|---|---|
| | n (%) | Crude Odds Ratio (95% CI) | Adjusted Odds Ratio (95% CI) |
| **Regular Source of Care** | | | |
| Yes | 22 (62.8) | 0.9 (0.4–2.0) | 0.9 (0.4–2.2) |
| No | 12 (34.3) | Referent | Referent |
| **Previous CDPH STD Patient** | | | |
| Yes | 23 (65.7) | 1.1 (0.5–2.5) | 1.2 (0.6–2.9) |
| No | 12 (34.3) | Referent | Referent |
| **Age** | | | |
| Less than 30 years | 33(94.3) | 4.1 (0.9–18.4) | 3.7 (0.8–16.8) |
| More than 30 years | 2 (5.7) | Referent | Referent |
| **Education** | | | |
| Secondary school or less | 24 (68.6) | 1.7 (0.7–3.8) | 1.3 (0.5–3.0) |
| Some college of more | 11 (31.4) | Referent | Referent |
| **Considers Self Likely to Become Pregnant without Protection** | | | |
| No | 9 (6.8) | 2.1 (0.8–5.5) | 2.4 (0.9–6.6) |
| Yes | 25 (19.1) | Referent | Referent |
| **Previous Abortion** | | | |
| Yes | 17 (48.6) | 1.4 (0.7–3.1) | 1.7 (0.7–3.8) |
| No | 18(51.4) | Referent | Referent |
| **Previous STI** | | | |
| Yes | 28 (80.0) | 2.1 (0.7–6.0) | 2.5 (0.8–7.3) |
| No | 5 (14.3) | Referent | Referent |
| **Race/ethnicity** | | | |
| African American | 29 (82.9) | 0.7 (0.2–2.3) | 0.7 (0.2–2.2) |
| Other race/ethnicity | 5 (14.3) | Referent | Referent |
| **Religious Affiliation** | | | |
| Yes | 19 (54.3) | 0.4 (0.2–1.0) | 0.5 (0.2–1.2) |
| No | 14 (40.0) | Referent | Referent |
| **Marital Status**† | | | |
| Living w/partner or married | 9 (25.7) | 3.7 (1.3–10.1) | 4.0 (1.4–11.8) |
| Single, separate, divorced or widowed | 26 (74.3) | Referent | Referent |
| **Private or Public Health Insurance** | | | |

| Characteristic | N=35* | | |
|---|---|---|---|
| | n (%) | Crude Odds Ratio (95% CI) | Adjusted Odds Ratio (95% CI) |
| No | 17 (48.6) | 1.0 (0.5–2.3) | 1.2 (0.5–2.6) |
| Yes | 16 (45.7) | Referent | Referent |
| **Annual Income** | | | |
| Less than $20,000 | 10 (28.6) | 0.8 (0.3–2.2) | 0.9 (0.3–2.7) |
| More than $20,000 | 10 (28.6) | Referent | Referent |

*Number of women reporting unprotected sex within 5 days of clinic visit

†Significance in multivariate analysis

STI = Sexually Transmitted Infection