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## Scope of sexual and reproductive health care receipt among young males aged 15-24

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### Abstract

**Objective:** To describe young men's sexual and reproductive healthcare (SRHC) receipt by sexual behavior and factors associated with greater SRHC receipt.

**Methods:** 427 male patients aged 15–24 were recruited from 3 primary care and 2 STD clinics in one urban city. Immediately after visit, survey assessed receipt of 18 recommended SRHC services across four domains: screening history (sex health, STD/HIV test, family planning); laboratories (STDs/HIV); condom products (condoms/lubrication); and counseling (STD/HIV risk reduction, family planning, condoms); and demographic, sexual behavior and visit characteristics. Multivariable Poisson regressions examined factors associated with each SRHC subdomain adjusting for participant clustering within clinics.

**Results:** 90% were non-Hispanic Black, 61% aged 20–24, 90% sexually active, 71% had female partners (FP), and 20% male or male and female partners (M/MFP). Among sexually active males, one in ten received all services. Half or more were asked about sexual health and STD/HIV tests, tested for STDs/HIV, and counseled on STD/HIV risk reduction and correct condom use. Fewer were asked about family planning (23%), provided condom products (32%), and counseled about

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family planning (35%). Overall and for each subdomain, never sexually active males reported fewer services than sexually active males. Factors consistently associated with greater SRHC receipt across subdomains included: having M/MFP vs. FP, routine vs. non-STD-acute visit, time alone with provider without parent, and seen at STD vs. primary care clinic. Males having FP vs. M/MFP reported greater family planning counseling.

**Conclusions:** Findings have implications for improving young men's SRHC delivery beyond narrow scope of STD/HIV care.

## Implications and Contribution

Despite new guidance recommending sexual/reproductive healthcare delivery to young men, little is known about young men's sexual/reproductive healthcare receipt. This study demonstrates that few young men aged 15–24 receive sexual/reproductive healthcare services beyond the narrow scope of STD/HIV care.

## Keywords

male adolescents; young adult men; quality of care; sexual and reproductive health care

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## Introduction

By age 19, the majority of males have initiated sexual intercourse, and young sexually active males aged 15–24 experience negative sexual health outcomes, including sexually transmitted diseases (STDs), human immunodeficiency virus (HIV), and unintended partner pregnancy [1, 2]. National guidance recommends family planning and sexual and reproductive healthcare (SRHC) be delivered to young men [3, 4]. Despite these recommendations, and *Healthy People 2020*'s goal to improve reproductive care to young men, little is known about young men's receipt of core SRHC, including assessment about sexual health, past STD/HIV testing, and family planning; STD/HIV laboratories; condom provision; and related counseling.

Past work examining males' SRHC receipt focuses on singular service receipt. Studies typically assess if patients ever had sex [5] rather than for the components of a complete sexual history, as recommended by the Centers for Disease Control and Prevention's (CDC) Five P's approach (i.e. asking about Partners, Practices, Prevention of Pregnancy, Protection from STDs, and Past History of STDs) [6], or assess for STD/HIV testing only rather than in context of other services (e.g., testing, condoms, and counseling). Overall, the literature indicates a concerning trend – less than one-quarter of young men report receipt of any singular service [5, 7–10]. Although studies examining care receipt among young men identified with higher sexual risks demonstrate slightly higher rates of singular services [10, 11], these studies often use non-clinical samples that limit participants' recall of care and visit-specific service receipt, or conflate access to care with service receipt. One recent clinic-based study, which highlights clinicians' lack of attention to young men's SRHC, reports male adolescents were less likely than females to discuss sexuality during routine visits, and, when these discussions did occur, they lasted for 36 seconds or less and omitted key sexual health topics (e.g., discussions about sexual orientation, healthy relationships)

[12, 13]. One of the few clinic-based studies that examines males' SRHC counseling receipt across multiple topics reports that providers only ever discussed, on average, 3 of 11 topics; the most discussed topics were counseling on STD risk reduction (55%), correct condom use (38%), and relationships (36%) [14]. Other studies examining SRHC receipt across service domains mainly assess for HIV testing along with other singular services (e.g., HIV counseling [15], other STD testing [11], intimate partner violence assessment [16], vaccine receipt [17]) rather than across multiple SRHC domains.

For adolescents who have not yet initiated sex, the American Academy of Pediatrics (AAP) Bright Futures' guidance discusses that any clinical encounter is an opportunity to teach adolescents and their families about healthy sexuality, HIV infection and other STDs, and modes of infection transmission, and to provide information about contraception, including emergency contraception [4]. CDC also recommends HIV testing start at age 13 regardless of sexual behavior [18]. One of the few studies to examine SRHC receipt by sexual experience used 1999 Youth Risk Behavior Surveillance data and showed that 19% male students who had no sexual experience reported a past year preventive care visit that included discussions of pregnancy, STDs or HIV prevention with their provider compared to 33% of sexually experienced male students [9].

Exploring factors associated with SRHC receipt is important to inform improvements in care delivery. For example, adolescents who report time alone with their clinician without a parent present during well-visits, as compared to those who did not, report substantially higher receipt of anticipatory guidance, including about sexual health [19]. Female as compared to male providers deliver preventive services at higher rates [20, 21], but female providers report greater discomfort when taking sexual histories from opposite-sex patients [22, 23]. Visit type may also influence care-delivery; for example, experts in male health do not agree that key SRHC should be delivered to young men during acute visits [24]. Finally, not all clinical settings may be equipped to deliver the full-range of SRHC.

Addressing current gaps in the literature, this study's main goal was to describe young men's receipt of SRHC by sexual experience across four core SRHC service domains – assessment for sexual health, past STD/HIV tests, and family planning; STD/HIV laboratories; condom supply provision; and related counseling – among a clinical-based sample of young men aged 15–24. A secondary goal was to examine the demographic, sexual behavior and visit characteristics associated with young men's greater SRHC receipt within each domain.

## Methods

### Procedures

From August 2014 to September 2016, cross-sectional surveys were conducted among non-probability (convenience) clinical samples of males aged 15–24. Data were collected for approximately two weeks each at three primary care (one academic and two community-based primary care settings) and two public health STD clinics in a Mid-Atlantic city during four surveillance data collection rounds as part of a larger study, which trained non-clinical youth-serving professionals in community-based settings to engage young men they work

with on SRHC and monitored young men's knowledge about this intervention. Round 1 (4/4/14-7/9/14) was conducted prior to intervention initiation and Rounds 2 (10/27/14-12/12/14); 3 (8/3/15-9/16/15); and 4 (7/1/16-9/30/16) after initiation. Inclusion criteria included identifying as a male aged 15–24 and ability to speak, read, and understand English or Spanish. Immediately after the visit, participants completed an audio computer-assisted self-interview that took about 10–15 minutes to complete. Adult participants gave consent to participate in research and minor participants gave consent if visits were SRHC-related; minors' assent and parent consent was given if visits were non-SRHC-related. Study protocols and procedures were approved by the human subjects review boards of the affiliated institutions. All participants received a \$5 gift certificate for their time. Study procedures necessitated clinicians to refer participants or male patients to approach the study recruitment table on their own volition. Of 786 males referred to/approached the study team, 479 (61.0%) were determined to meet the study's inclusion criteria. Among eligible participants, 427 enrolled (89.1% participation rate) and 52 refused (10.9%) (e.g., due to time constraints).

## Measures

### SRHC receipt.

Participants were assessed about receipt of 18 services representing four core SRHC service domains – screening history for sexual health, past STD/HIV tests, and family planning; STD/HIV-related laboratories; condom provision; and related counseling. Measures were developed based on core clinical preventive service recommendations for family planning and STDs/HIV [3, 6, 18, 25] and prior work in this area [14, 24]. Based on the number of items received at the visit overall and for each subdomain, an additive score was created, with higher scores representing greater number of services received.

For screening history, 10 questions were asked, consisting of three separate subdomains: screening about sex health (5 items), past STD/HIV tests (2 items), and family planning (3 items): “Did the doctor you saw today ask you about: have you ever had sex with women, men or both; if you are straight, gay, or bisexual; type of sexual behavior you have had (vaginal, anal and/or oral sex); number of sex partners; if you used a condom at last sex; your plans for having children; if your partner uses a hormonal birth control method; if you have ever gotten someone pregnant; last time tested for HIV; and last time tested for STDs other than for HIV?”.

For laboratories, 2 questions were asked: “Did doctor: screen you for HIV by a blood test, finger prick or mouth swab; and ask you to give a urine sample to screen you for STDs?”

For condom product provision, 2 questions were asked: “Did doctor give you: condoms; and any lubrication to use with condoms?”

For counseling, 4 questions were asked, consisting of three separate subdomains: counseling about STDs/HIV (1 item), condoms (1 item), and family planning (2 items): “Did doctor talk to or counsel you today about: reducing your STD/HIV risk; how to use a condom correctly; preventing pregnancy; and emergency contraception?”

Three other items recommended by men's health experts were also assessed [31]: "Did doctor: ask you today about if you: are having any problems when you have sex (problems like coming too quickly, pain, coming too slowly, keeping an erection when having sex); have ever had a partner hurt you physically; and talk to/counsel you today about practicing how to use a condom correctly with an actual condom and model penis?"

## Participant characteristics

### Demographics.

Demographic factors assessed included gender (male, female or transgender), age in years (15–19 or 20–24); and race/ethnicity (non-Hispanic Black, non-Hispanic White or Hispanic).

### Sexual behavior.

Participants were asked whether they were ever sexually experienced (no/yes for any type of sex including vaginal, oral, or anal sex with specific definitions for each type of sex provided); and about the gender of their sex partner(s) (sex with women only, men only, men and women, or never sexually active).

### Visit.

Visit characteristics assessed included established clinic patient (no/yes); visit reason (physical examination (e.g., annual well-care visit), STD screen, STD concern, or other (e.g., non-STD and non-health maintenance related issue such as cold or blood pressure recheck)); gender of provider seen (male/female); time alone with provider without parent present (no/yes); and clinic type (primary care or STD clinic).

## Data analysis

Frequencies or means and standard deviations (SD) were first generated for respondents' background characteristics (Table 1) and for each SRHC item, including subdomain and composite score by sexual experience (Table 2). Means or frequencies of SRHC were compared by sexual experience using ANOVA or Chi-square, respectively. Next, separate Poisson regression models examined bivariate (not shown) associations between participants' demographic, sexual behavior and visit characteristics and each SRHC subdomain, with each model adjusted for clustering of participants within clinics. A P value of  $<.10$  determined the common set of variables to include in the final models. The final set of covariates was then assessed for multicollinearity for each SRHC subdomain, and none was found. A Poisson model was applied in the multivariable analyses to calculate the relative risk (RR), because odds ratios overestimate RR when main outcomes are common ( $>10\%$ ) [26]. Separate regression models were conducted where all covariates were entered simultaneously into the regression model to produce adjusted incidence rate ratios [26] in order to examine the association between participants' demographic, sexual behavior and visit characteristics and each SRHC subdomain and also adjusting for clustering of participants within clinics (Table 3). Thus, adjusted RR represent the association of each covariate with the dependent variable after accounting for the influence of all of the other

variables. Because data were collected over a 2-year period, an indicator variable representing the four data collection time points was created to examine its role as a potential confounder in each multivariable model. Because no differences were found between the multivariable models with and without this indicator variable, data from the multivariable analyses for each outcome are summarized without this indicator variable. For these analyses, a level of  $p < 0.05$  was used for determining statistical significance. All analyses were conducted using Stata14.

## Results

Of 427 male participants, 2 self-identified as transgender. The majority of patients were aged 20–24 (61%), non-Hispanic black (90%), sexually experienced (90%), and sexually active with women only (71%) (Table 1). About one-third (31%) were new patients and 41% were at the clinic for a physical examination, and 46% for an STD screen/concern. The majority saw female providers (73%) and had time alone with the provider without a parent present (86%). About half each of respondents were seen in STD (46%) and primary care (54%) clinics.

### SRHC receipt (Table 2)

#### Screening history.

Sexually active males were asked, on average (standard deviation [SD]), 3.7 (SD=1.8) of five sexual health items (12% were asked no items, 51% all items); 1.6 (SD=0.8) of two past STD/HIV testing items (18% none, 76% all); and 1.2 (SD=1.2) of three family planning items (40% none, 23% all). Never sexually active males reported a lower mean number of screening item receipt for each subdomain than sexually active males (sexual health: 1.9 (SD=1.9); past STD/HIV testing: 0.4 (SD=0.7); and family planning: 0.3 (SD=0.6); all  $p$ 's  $< .001$ ).

#### Laboratories.

Sexually active males were tested, on average, for 1.3 (SD=0.9) of two STD/HIV tests (27% reported no tests, 52% both tests). Never sexually active males reported a lower mean number of STD/HIV tests than sexually active males (0.5 (SD=0.7);  $p < .001$ ).

#### Condom product provision.

Sexually active males were provided, on average, 0.9 (SD=0.9) of two condom products (45% provided no products, 32% both products). Never sexually active males reported a lower mean number of condom product receipt than sexually active males (0.2 (SD=0.6);  $p < .001$ ).

#### Counseling.

Sexually active males were counseled on reducing STD/HIV risk (72%), on using condoms correctly (50%) and, on average, about 0.9 (SD=0.9) of two family planning topics (45% counseled on no topics, 34% both topics). A lower proportion of never sexually active males were counseled on STD/HIV risk reduction and condoms than sexually active males (38%

and 21%, respectively; all  $p$ 's <.001). Never sexually active males reported a lower mean number of family planning counseling than sexually active males (0.5 (SD=0.7);  $p$  .01).

### **Composite recommended SRHC.**

Sexually active males received, on average, 10.7 (SD=5.4) of 18 services (7% received no services, 9% all services). Never sexually active males reported a lower mean number of SRHC receipt than sexually active males (4.4 (SD=4.6);  $p$ <.001).

### **Additional SRHC items.**

Sexually active and never sexually active males reported being asked about history for problems when having sex (43% and 10%); about partner ever hurting them physically (37% and 12%); and practice using a condom correctly with an actual condom and model penis (38% and 5%), respectively.

### **Factors associated with each SRHC subdomain**

Adjusted models showed the most consistent factors that were associated with receipt of a greater number of SRHC items across SRHC subdomains included participants' sexual behavior status, sex partner gender, visit reason, having time alone with a provider, and clinic type (Table 3).

Sexually active males with female partners only (FP) and males with male or male and female partners (M/MFP) were more likely than never sexually active males to report receipt of a greater number of screening history items about sexual health (adjusted relative risk [aRR]=1.48, 95% CI=1.10–2.00; aRR=1.86, CI=1.37–2.52), past STD/HIV tests (aRR=2.80, CI=1.72–4.53; aRR=3.26, CI=2.01–5.30), and family planning (aRR=4.08, CI=2.14–7.78; aRR=3.15, CI=1.60–6.20); STD/HIV laboratories (aRR=2.00, CI=1.30–3.10; aRR=2.02, CI=1.28–3.17); condom products (aRR=3.11, CI=1.49–6.48; aRR=3.85, CI=1.81–8.16); and condom counseling (aRR=2.10, CI=1.17–3.76; aRR=2.25, CI=1.22–4.15). Compared to never sexually active males, males with M/MFPs were more likely to be counseled on STD/HIV risk reduction (aRR=1.64, CI=1.11–2.43) and males with FPs only were more likely to report receipt of a greater number of family planning counseling items (aRR=1.75, CI=1.10–2.79). Males with FPs only were less likely than males with M/MFPs to report receipt of a greater number of screening history items about sex health (aRR=0.80, CI=0.72–0.88) and past STD/HIV tests (aRR=0.86, CI=0.77–0.95); and counseling on STD/HIV risk reduction (aRR=0.86, CI=0.75–0.99), and more likely to report receipt of a greater number of family planning counseling items (aRR=1.43, CI=1.07–1.92).

Compared to males seen for a routine physical, males seen for acute non-STD-related issues were less likely to report receipt of each SRHC subdomain except for condom products, and males seen for STD concern/screening were more likely to report being counseled on STD/HIV risk reduction. Males who had time alone with the provider without a parent present were more likely than those who did not to report receipt of each SRHC subdomain except for screening history about family planning and condom product provision. Males seen at STD clinics were more likely than those seen in primary care to report receipt of a

greater number of STD/HIV-related services (e.g., screening history about sex health, past STD/HIV tests, STD/HIV laboratories, and counseling on STD/HIV risk reduction).

## Discussion

This study describes that few young male patients received SRHC care across all core recommended services or within an SRHC subdomain. Higher proportions of sexually active males received STD/HIV laboratories and counseling than family planning services and never sexually active males received far fewer services overall. Male patients' visit characteristics differentiated SRHC receipt across all domains. Study findings highlight the need to improve providers' delivery of SRHC services to young men beyond just STD/HIV care.

This is one of the first studies to demonstrate that the majority of sexually active young male patients did not receive core services across recommended SRHC services. Although reports of service receipt in this study, especially related to STD/HIV care, was higher than that observed in another clinic-based study [14] and may be due, in part, to use of ACASI for data collection, only one in ten sexually active young men in this study reported receiving all services. Among SRHC sub-domains, higher levels of service receipt was mainly observed for STD/HIV-related services; only half of participants being assessed on all sexual health items, less than one-quarter on all family planning items, and less than one-third were counseled about family planning. It is possible that male patients received some or all services at a prior visit(s), because providers may be distributing services across multiple visits rather than all at once. Future work may need to examine SRHC delivery to young men over time to fully understand if lower service provision rates are due to prior service receipt or providers' lack of care delivery.

Young male patients who had sex with men (YMSM) more commonly reported STD/HIV-focused care receipt than males with female partners only. It is possible that clinicians are tailoring the care they provide to YMSMs based on past sexual history assessment or that YMSMs more proactively request needed care than heterosexual males [27]. Future work should examine whether clinicians are individualizing the care they provide to young men. This is especially relevant for YMSM who are concerned that providers will judge them as being high-risk based solely on their partner's gender, identity, and orientation [28].

Receipt of family planning services was more commonly reported by male patients with female partners only. These findings are consistent with a recent past clinic-based study that indicated 38% of young men reported ever discussing with a provider how to use a condom correctly, 23% discussed female birth control methods, and 21% emergency contraception [14]. Although YMSM in this study were less likely to report family planning counseling, other research shows that almost half of males aged 15–24 with only male sexual partners also report future plans to have children [29]. Providers should thus not miss opportunities to discuss family planning needs with all male patients, including the implications of unprotected sex related to STD/HIV risk and potentially the role of assisted reproductive technologies.



This is one of a few studies to assess SRHC receipt by males' sexual experience [9, 13]. For key recommended services [4, 18], close to half reported being assessed on each of two of five sexual health items and far fewer received any other service including being tested for HIV and practice using condoms correctly. Low rates of service receipt in this study are consistent with past work [9, 13] and indicate the need to better understand providers' barriers to delivering care to this population and to more concretely define what SRHC this population should receive, especially adolescents on the brink of sexual onset [4, 30].

Certain visit factors that differentiated young men's SRHC receipt in this study may represent leverage points that can be used to improve SRHC delivery. Consistent with past work, provider private time without a parent was associated with greater SRHC receipt across all domains, except for family planning assessment and condom product provision [19]. Acute non-STD-related visits were associated with lower SRHC receipt, especially quick-to-collect STD/HIV tests. Although these findings are consistent with past work of men's health experts who did not agree whether SRHC should be delivered to young men during acute visits [24], any visit, including acute visits, is recommended to be an opportunity to deliver key SRHC [3]. This is especially relevant for young men who may make fewer than one doctor visit per year [31].

Services assessed in this study focused on core family planning and STD/HIV care recommended for young men, but not all recommendations by the recent Providing Quality Family Planning Services (*QFP*) guidance that is intended to serve as the standard of preventive care for all providers who deliver SRHC [3, 32]. *QFP* makes comprehensive SRHC recommendations that reproductive-aged men receive family planning (i.e., contraception, pregnancy testing and counseling, achieving pregnancy, basic infertility, preconception health, and STD services); related preventive (e.g., genital exam to assess progress of healthy sexual development); and other preventive services (e.g., lipid screening); and that quality family planning delivery needs to be monitored for women and men [3, 32]. Findings in this study may thus be foundational toward developing quality care measures for young men's SRHC delivery, since current measures focus solely on services delivered to women [33–36]. Future work will need to examine the full implementation of *QFP* recommended services for young men and other quality dimensions including that care is safe, patient-centered, timely, and accessible [37]. However, guidelines are necessary but not sufficient to observe changes in providers' behavior [38]. Strategies to improve providers' SRHC delivery to young men may require multi-level intervention approaches across settings in which young men are seen [39].

This study has several limitations. It is cross-sectional in design, thus identified findings should not be interpreted as causal. Care-receipt is based on self-report and may not correspond to actual care delivered. However, past work shows adolescents' self-reported care receipt is valid to determine preventive healthcare receipt especially when recently assessed (e.g., past 2–4 weeks) and recall in this study occurred immediately after the visit [40]. This study only assessed urine-based STD screening. Future work may want to assess screening all sites of STD exposure. Findings may not be generalizable to all males seen in clinical settings given non-probability nature of this study as well as generalizable to other settings secondary to this majority African American sample from clinics in one city. Future

work may want to examine a more diverse sample of patients from similar and/or other clinical settings. Finally, the never sexually experienced male sample was small; future work will be needed to learn more about SRHC receipt among this sub-population in clinical settings. Offsetting these limitations is the study's description of core SRHC receipt among young men aged 15–24.

This study found few young male patients received core SRHC, and care receipt varied mainly by patients' sexual behavior status and visit characteristics. Study findings highlight the need to improve providers' delivery of SRHC services to young men beyond just STD/HIV care.

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## Acronyms.

<b>CI</b>	Confidence Interval
<b>FP</b>	female partner
<b>HEDIS</b>	Healthcare Effectiveness Data and Information Set
<b>HIV</b>	Human immunodeficiency virus
<b>M/MFP</b>	male or male and female partner
<b>PIMS</b>	Performance Indicator Monitoring System
<b>RQIP</b>	Regional Quality Indicators Project
<b>RR</b>	Relative risk
<b>QFP</b>	Providing Quality Family Planning Services
<b>STD</b>	Sexually transmitted diseases
<b>SRHC</b>	Sexual and reproductive healthcare
<b>YMSM</b>	Young men who have sex with men

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**Table 1.**

Participants' demographic, sexual behavior and visit characteristics

	N	%
<b>Demographic characteristics</b>		
Age		
15–19	166	38.9
20–24	261	61.1
Race/ethnicity		
Non-Hispanic Black	386	90.4
Non-Hispanic White	30	7.0
Hispanic	11	2.6
<b>Sexual behavior characteristics</b>		
Ever sexual experience		
No	42	9.8
Yes	385	90.2
Gender of sexual partner		
Women only	302	70.7
Men only	55	12.9
Men and women	28	6.6
Never had sex	42	9.8
<b>Visit characteristics</b>		
Established clinic patient		
No (new patient)	134	31.4
Yes	293	68.6
Visit reason		
Routine physical examination	176	41.2
STD screen	124	29.0
STD concern	71	16.6
Other (e.g., cold)	56	13.1
Provider gender		
Female	310	72.6
Male	117	27.4
Time alone with provider without parent present		
	367	85.9
Clinic type		
Primary care	231	54.1
STD clinic	196	45.9

STD=sexually transmitted disease

Sexual and reproductive health care (SRHC) receipt for each domain and item by sexual experience

**Table 2.**

SRHC receipt items & domains	Sexually active (n=385)			Never sexually active (n=42)			Comparative statistic
	N	Mean (SD) or %	Item receipt 0% 100%	N	Mean (SD) or %	Item receipt 0% 100%	
<b>Recommended SRHC</b>							
<b>Screening history</b>							
<b>Sexual health (5 items)</b>		3.67 (1.78)	12.2 51.4		1.90 (1.94)	38.1 16.7	F=37.4; p<.001 <sup>a</sup>
Sex with women/men/both	285	74.0	- - 20	20	47.6	- -	
Straight/gay/bisexual	231	60.0	- - 13	13	31.0	- -	
Type of sexual behavior	285	74.0	- - 19	19	45.2	- -	
Number sexual partners	299	77.7	- - 15	15	35.7	- -	
Condom use at last sex	319	82.9	- - 13	13	31.0	- -	
<b>Past STD/HIV test (2 items)</b>		1.57 (0.78)	18.4 75.8		0.43 (0.70)	69.0 11.9	F=82.4; p<.001 <sup>a</sup>
Tested for HIV	305	79.2	- - 11	11	26.2	- -	
Tested for STD	301	78.2	- - 7	7	16.7	- -	
<b>Family planning (3 items)</b>		1.21 (1.19)	39.7 23.1		0.31 (0.64)	76.2 2.4	F=23.0; p<.001 <sup>a</sup>
Plans for having children	152	39.5	- - 8	8	19.0	- -	
Partner uses birth control	143	37.1	- - 3	3	7.1	- -	
Ever gotten someone pregnant	170	44.3	- - 2	2	4.8	- -	
<b>Laboratories (2 items)</b>							
HIV	242	63.0	- - 14	14	33.3	- -	F=32.6; p<.001 <sup>a</sup>
STD other than HIV	239	62.2	- - 6	6	14.3	- -	
<b>Condom products (2 items)</b>							
Condoms	206	53.6	- - 7	7	16.7	- -	F=21.3; p<.001 <sup>a</sup>
Lubricant	128	33.3	- - 3	3	7.1	- -	
<b>Counseling</b>							
<b>STD/HIV (1 item)</b>							

SRHC receipt items & domains	Sexually active (n=385)				Never sexually active (n=42)				Comparative statistic
	N	Mean (SD) or %	Item receipt		N	Mean (SD) or %	Item receipt		
			0%	100%			0%	100%	
Reducing STD/HIV risk	275	71.6	28.4	71.6	16	38.1	61.9	38.1	Chi <sup>2</sup> =19.7, <i>p</i> <.001 <sup>b</sup>
<b>Condoms (1 item)</b>									
Using condoms correctly	192	50.0	50.0	50.0	9	21.4	78.6	21.4	Chi <sup>2</sup> =12.4, <i>p</i> <.001 <sup>b</sup>
<b>Family planning (2 items)</b>									
Preventing pregnancy	174	45.3	-	-	15	35.7	-	-	F=8.4; <i>p</i> =.004 <sup>a</sup>
Emergency contraception	166	43.2	-	-	6	11.9	-	-	
<b>Composite recommended SRHC (18 items)</b>		10.69 (5.40)	7.3	9.4		4.43 (4.57)	26.2	2.4	F=52.3; <i>p</i> <.001 <sup>a</sup>
<b>Other SRHC</b>									
Any problems when having sex (screening)	163	42.9	-	-	4	9.5	-	-	Chi <sup>2</sup> =17.2, <i>p</i> <.001 <sup>b</sup>
Partner ever hurt them physically (screening)	139	36.6	-	-	5	11.9	-	-	Chi <sup>2</sup> =10.0, <i>p</i> =.002 <sup>b</sup>
Practice using condom correctly with model (skill)	142	37.7	-	-	2	4.8	-	-	Chi <sup>2</sup> =17.6, <i>p</i> <.001 <sup>b</sup>

HIV=human immunodeficiency virus; SD=standard deviation; SRHC=sexual and reproductive health care; STD=sexually transmitted disease

<sup>a</sup>ANOVA test

<sup>b</sup>Chi-Square test

**Table 3.**

Adjusted models of receipt of recommended sexual and reproductive healthcare (SRHC) screening, laboratory, condom product and counseling services with participants' characteristics

Participant characteristics	SRHC service domain (aRR [95% CI]) <sup>a</sup>							
	Screening		Laboratories		Condom products		Counseling	
	Sex health	Past STD/HIV test	Family planning	STD/HIV test	Condoms/lubricant	STD/HIV	Condoms	Family planning
Age								
15-19	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
20-24	.97 (.87-1.08)	.98 (.88-1.09)	1.07 (.86-1.33)	.99 (.85-1.15)	.96 (.77-1.20)	.96 (.84-1.10)	1.00 (.80-1.25)	1.03 (0.83-1.29)
Race/ethnicity								
Non-Hispanic Black	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
Non-Hispanic White	.80 (.64-1.00)	.87 (.67-1.11)	.83 (.53-1.28)	.63 (.43-.92)*	1.01 (.66-1.52)	.87 (.65-1.16)	.94 (.62-1.43)	.84 (.55-1.27)
Hispanic	.72 (.51-1.01)	.85 (.67-1.11)	1.55 (.86-2.80)	1.12 (.87-1.43)	1.46 (1.07-2.00)*	.80 (.53-1.19)	1.22 (.71-2.08)	1.18 (.57-2.44)
Gender of sex partner								
Never sex behavior	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
Female only	1.48 (1.10-2.00)**	2.80 (1.72-4.53)***	4.08 (2.14-7.78)***	2.00 (1.30-3.10)**	3.11 (1.49-6.48)**	1.41 (.96-2.06)	2.10 (1.17-3.76)*	1.75 (1.10-2.79)*
Male or male/female	1.86 (1.37-2.52)***	3.26 (2.01-5.30)***	3.15 (1.60-6.20)**	2.02 (1.28-3.17)**	3.85 (1.81-8.16)***	1.64 (1.11-2.43)*	2.25 (1.22-4.15)*	1.22 (.72-2.07)
Male or male/female	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
Female only	.80 (.72-.88)***	.86 (.77-.95)**	1.29 (.99-1.69)	.99 (.85-1.16)	.81 (.64-1.02)	.86 (.75-.99)*	.93 (.73-1.18)	1.43 (1.07-1.92)*
Established patient								
No	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
Yes	1.10 (1.00-1.21)	1.04 (.94-1.14)	1.15 (.91-1.46)	1.03 (.89-1.19)	1.17 (.93-1.47)	1.05 (.93-1.20)	1.41 (1.10-1.81)**	1.22 (.98-1.52)
Visit reason								
Physical	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
STD concern/screen	1.03 (.93-1.13)	1.05 (.94-1.16)	.92 (.74-1.15)	1.08 (.93-1.25)	1.18 (.93-1.49)	1.15 (1.00-1.32)*	1.07 (.86-1.33)	1.01 (.81-1.26)
Other (e.g., cold)	.64 (.50-0.81)***	.67 (.51-0.87)**	.55 (.36-.85)**	.52 (.36-.77)**	.71 (.47-1.06)	.61 (.43-.85)**	.66 (.44-.99)*	.60 (.40-.91)*
Provider gender								
Female	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
Male	.97 (.86-1.11)	.94 (.81-1.08)	1.10 (.87-1.39)	1.02 (.85-1.22)	1.30 (1.04-1.63)*	1.03 (.87-1.22)	1.13 (.90-1.42)	1.11 (.88-1.41)



Participant characteristics	SRHC service domain (aRR [95% CI]) <sup>a</sup>							
	Screening		Laboratories		Condom products		Counseling	
	Sex health	Past STD/HIV test	Family planning	STD/HIV test	Condoms/lubricant	STD/HIV	Condoms	Family planning
Time alone with provider								
No	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
Yes	1.46 (1.19–1.80)***	1.37 (1.11–1.70)**	1.19 (.84–1.69)	1.45 (1.10–1.91)**	1.44 (.95–2.19)	1.54 (1.16–2.04)**	2.20 (1.31–3.69)**	1.46 (1.00–2.14)*
Clinic type								
Primary care	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
STD	1.32 (1.16–1.49)***	1.31 (1.16–1.48)***	.98 (.75–1.27)	1.33 (1.11–1.59)**	1.18 (.93–1.51)	1.31 (1.12–1.54)**	1.10 (.86–1.41)	1.18 (.92–1.52)

<sup>a</sup>Data are adjusted relative risks (aRR) and 95% confidence intervals (CIs) from separate multivariable Poisson regression models for each SRHC subdomain representing relationship between independent variables and the SRHC subdomain while controlling for all other independent variables in the table.

HIV=human immunodeficiency virus; STD=sexually transmitted disease

\* p<0.05

\*\* p<0.01

\*\*\* p<0.001