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Missed opportunities to address pregnancy prevention with young men in primary care

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Abstract

Young men (aged 15-24) have pregnancy prevention needs, yet little is known about whether they perceive learning about pregnancy prevention in primary care. A sample of 190 young men seen in primary care in one city from April 2014 to September 2016 were assessed at the visit end on perceived learning about pregnancy prevention, background and visit characteristics, pregnancy prevention care receipt, and contraception needs at last sex. The majority of participants were non-Hispanic Black (92%), aged 15-19 (54%), seen for a physical exam (52%), and established patients (87%). Few participants perceived they learned about pregnancy prevention (32%), regardless of sexual activity (33%) or not (26%). Poisson regression models determined that perceived learning about pregnancy prevention was independently associated with young men's pregnancy prevention care receipt and contraception needs at last sex. Findings highlight the need to improve providers' delivery of pregnancy prevention services to young men.

Keywords

family planning; primary care; adolescent health; male; pregnancy prevention

Introduction

Young men aged 15-24 years old have many unmet pregnancy prevention needs¹ as evidenced by high rates of partners experiencing unintended pregnancy,² low rates of condom use,^{1,3} and lack of awareness and knowledge about their partners' contraception use.^{1,4} Meeting young men's pregnancy prevention needs is particularly important since

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contraception use is improved when both partners are involved.⁵⁻⁸ The *Guidance for Providing Quality Family Planning Services* (QFP) by the Office of Population Affairs (OPA) and Centers for Disease Control and Prevention (CDC) recommends all reproductive-aged individuals, including young men, receive pregnancy prevention services.⁹ Primary care providers are in a unique position to address young men's pregnancy prevention needs because they have the skills to provide medically accurate information about pregnancy prevention, young men rate them as top and trusted sources for sexual and reproductive health information,^{10,11} and other sources, such as parents and schools, may not provide such information to young men,¹² or this information may be incomplete or inaccurate. However, little is known about young men's receipt of pregnancy prevention services in the context of primary care.

A recent clinic-based study found that male patients aged 15-24 who perceived they learned about sexual and reproductive health from their provider were more satisfied with the overall care they received that day.¹³ A key step to young men's behavior change regarding pregnancy prevention is if they actually learn what they can do to prevent unintended pregnancy during their clinical visits.¹⁴ This is particularly important since many young men have substantial knowledge deficits in pregnancy prevention.⁴ Direct assessment of young men's perceived learned about pregnancy prevention taps into their overall satisfaction with care, a preferred approach to understanding quality of care receipt.¹³

Although the majority of young men are seen in primary care,¹⁴⁻¹⁶ past clinic-based studies have focused mainly on young men's attitudes and behaviors towards contraception use, rather than pregnancy prevention service receipt, and mainly been conducted in family planning settings, rather than in primary care.¹⁷⁻¹⁹ Data about pregnancy prevention service receipt collected from nationally representative household-based samples of young men have not typically differentiated between the clinical settings where such services are delivered (e.g., primary care, family planning, or sexually transmitted disease (STD) clinics) and highlight that less than one-quarter of young men report pregnancy prevention service receipt in the last year.^{1,20}

Research on pregnancy prevention in clinical settings has typically focused on sexually active young men and does not necessarily include young men who may be on the brink of sexual activity. The American Academy of Pediatrics' Bright Futures recommends the provision of anticipatory guidance about pregnancy prevention for all adolescents, which is aligned with QFP guidance.²¹ Of the few studies that differentiate findings by sexual behavior status, one household-based sample of male adolescents aged 15-19 indicated that only 11% of never sexually active males reported talking about birth control in the last year with their provider, compared to 24% of males who had had vaginal sex with a female.²⁰ Another clinic-based study that examined profiles of primary care providers' sex discussions with a sample of adolescent patients recruited for an obesity intervention found that conversations with patients about sex consisted of four different conversation types and tended to be very short (mean of 90 seconds).²² None of the conversation types involved providers explicitly discussing reproductive life plans or birth control with males, regardless of sexual activity, or providing anticipatory guidance about pregnancy prevention to never sexually active patients.

Gaining a better understanding of the factors associated with young men's perceptions that they have learned about pregnancy prevention from their primary care provider is important to informing strategies to improve the delivery of these services. It is possible that providers deliver pregnancy prevention care as outlined by national guidance (e.g., ask about reproductive life plans and counsel on pregnancy prevention), or they tailor services delivered based on a patient's needs, or a combination thereof. Other factors may also come into play in providers' decision making when delivering sexual and reproductive health care including pregnancy prevention services (e.g., visit type, patient age, etc.).²³

Building upon the gaps in the literature, this study's main objective was to describe the proportion of young men who perceived they learned about pregnancy prevention in primary care, stratified by sexual behavior status. A secondary objective was to examine associations between this outcome and participants' demographics, visit characteristics, reproductive history, contraception use at last sex, and receipt of pregnancy prevention services at the visit.

Methods

Study procedures and sample

This study was part of a larger program that trained non-clinical youth-serving professionals in community settings to refer young men to STD and human immunodeficiency virus (HIV) testing. It consisted of four cross-sectional surveys conducted for a period of two weeks each from April 2014 to September 2016 at primary care and STD clinical settings in an urban mid-Atlantic city with high teen pregnancy and STD/HIV rates.²⁴⁻²⁷ Surveys were conducted with a non-probability (convenience) sample of male patients. Inclusion criteria included identifying as male, being 15-24 years old, and ability to speak, read, and understand English or Spanish. Consented participants completed a survey using an audio computer-assisted self-interview (ACASI) in English or Spanish which took approximately 10-15 minutes immediately after their clinic visit. Participants were screened and provided consent as approved by the human subjects review boards of the affiliated institutions and received a \$5 gift certificate after survey completion.

Of 786 males who were referred to or approached the study team, 479 (61.0%) met the study's inclusion criteria. Among eligible participants, 427 enrolled (89.1% participation rate) and 52 (10.9%) refused (e.g., due to time constraints). This study focuses on data collected from the 190 male patients who reported a history of sexual activity with or being attracted to female partners and were seen at the three primary care settings (one academic and two community-based settings); data from the STD clinics were not included as these clinics' scope of practice did not include family planning service provision.

Measures

Demographic and visit characteristics.—Demographics included age groups of 15-17, 18-19, and 20-24 years old; and race/ethnicity (non-Hispanic Black, non-Hispanic white, Hispanic, or other). Visit characteristics included the reason for the visit (physical/

routine exam, STD screening or concern, or other [e.g., for an illness or injury]) and prior patient status (no or yes).

Reproductive history.—Reproductive history assessed if participants had ever been sexually active with a female partner (yes or no), their age the first time they had sex (14 or younger or 15 or older), the number of female sexual partners they had had in the past three months (0, 1, or 2 or more), and if they had ever fathered a child (no/unsure or yes).

Pregnancy prevention service receipt.—Participants reported whether their provider asked them about their plans for having children and if they were counseled on pregnancy prevention. A measure labeled as pregnancy prevention services was constructed (no service receipt, asked about plans for having children only, counseled on pregnancy prevention only, or receipt of both services).

Contraception use at last sex.—Each participant was asked about contraception use the last time they had sex (no method, condoms only, partner method only [i.e. pills, patch, ring, injection, implant, or intrauterine device], or dual methods [condoms and a partner method]).

Perceived learning about pregnancy prevention.—Participants were asked to rate how strongly they agreed with the statement: “The health care provider I saw today taught me something about protecting myself against pregnancy” on a 4-point scale (strongly disagree to strongly agree). This measure was analyzed using a top-box score approach – a method commonly used to assess patient experience and satisfaction with care¹³ – as strongly agree vs. agree, disagree, or strongly disagree.

Data analysis

Frequencies and cross-tabulations were generated to examine participants’ characteristics in general and by study outcome (Table 1). Separate bivariate and multivariable Poisson regression models were conducted to examine factors associated with the study outcome, adjusting for participant clustering within clinics. The final set of covariates was assessed for multicollinearity with the outcome variable and none was found. Poisson analyses were applied to calculate a relative risk (RR),²⁸ as odds ratios overestimate RR when the outcome event is common (i.e. an incidence rate of 10%) and would lead to inaccurate estimates.²⁹ All of the covariates were entered simultaneously into the multivariable regression model to produce adjusted incidence rate ratios; adjusted RR (aRR) represents the association of each covariate with the study outcome after accounting for the influence of all other variables. Due to the small sample size of never sexually active participants, two variables were recoded for the Poisson regression model for this analysis: age was categorized as 15-17 or 18-24 and pregnancy prevention service receipt was categorized as neither service, either service, or both services. Data management was conducted with SPSS 23 and analysis with Stata 13.1.

Results

Participants were distributed across ages 15-17 (42%), 20-24 (39%), and 18-19 (19%) (Table 1). The majority of participants were non-Hispanic Black (91%), seen for a routine physical examination (54%), and established patients (89%). The majority reported ever being sexually active with a female (78%) and one-third reported age of sex onset at 14 years old or younger (38%). Among sexually active participants, the majority reported one (41%) or two or more (45%) female partners in the past 3 months, and 18% had ever fathered a child. In terms of pregnancy prevention service receipt, 48% received neither service, 9% were asked about their plans for having children only, 15% were counseled on pregnancy prevention only, and 28% received both services. At last sex, 28% of participants used no method, 39% used a condom only, 16% relied on a partner method only, and 18% reported dual method use. Less than one-third (32%) of participants perceived they learned about pregnancy prevention at the clinic visit.

Among sexually active participants, 33% perceived they learned about pregnancy prevention at the visit (Table 2). These proportions were higher among participants who were 15-19, non-Hispanic Black, and seen for a physical exam or STD concern/screen.

Among never sexually active participants, 26% perceived they learned about pregnancy prevention at the visit (Table 2). These proportions were higher among participants who were 15-17, non-Hispanic white or Hispanic, and seen for a physical exam or STD concern/screen.

Among ever sexually active young men, bivariate analyses demonstrated that perceived learning about pregnancy prevention at the visit was associated with young men's pregnancy prevention service receipt and contraception use at last sex, but not with participants' demographic, visit, or reproductive history characteristics (Table 3). Multivariate analyses demonstrated that, after controlling for all other factors, young men's pregnancy prevention service receipt and contraception use at last sex were independently associated with perceived learning about pregnancy prevention at the visit. Specifically, sexually active young men were more likely to perceive they learned about pregnancy prevention if they received both services compared to neither service (aRR=3.35, 95% CI=1.72, 6.55, $p<0.001$) or counseled on pregnancy prevention only (aRR=1.97, 95% CI=1.03-3.77, $p=0.040$). Sexually active young men were also more likely to perceive they learned about pregnancy prevention if at last sex they relied only on a partner's method (aRR=7.89, 95% CI=2.35, 26.50, $p=0.001$) or condoms (aRR=3.57, 95% CI=1.19, 10.78, $p=0.024$), compared to dual method use. These young men were less likely to perceive they learned about pregnancy prevention if at last sex they used no method (aRR=0.41, 95% CI=0.21, 0.79, $p=0.008$) or condoms only (aRR=0.45, 95% CI=0.26, 0.78, $p=0.004$), compared to a partner's method only.

Among never sexually active young men, bivariate Poisson analyses demonstrated that perceived learning about pregnancy prevention at the visit was associated with young men's race/ethnicity, prior patient status, and pregnancy prevention service receipt at the visit, but not with participants' other demographic and visit characteristics (Table 4). Multivariate

analyses demonstrated that after controlling for all other factors, only pregnancy prevention service receipt at the visit was independently associated with perceived learning about pregnancy prevention at the visit. Specifically, never sexually active young men were found to be more likely to perceive they learned about pregnancy prevention if they received both services at the visit compared to neither service (aRR=3.88, 95% CI=1.31, 11.52, $p=0.016$) or either service (aRR=4.17, 95% CI=1.15, 15.17, $p=0.031$).

Discussion

This study found that less than one-third of young men seen in primary care, regardless of their sexual activity status, perceived they learned about pregnancy prevention at their visit. For all young men, perceptions of having learned about pregnancy prevention was associated with their provider having both asked them about their reproductive life plan and counseled them on pregnancy prevention, but not other factors such as a patient's age or reason for visit. Among young men who had been sexually active with female partners, contraception needs at last sex (e.g., not using dual methods) was also associated with increased perceptions of having learned about pregnancy prevention. Study findings highlight the need to improve primary care providers' delivery of pregnancy prevention services to young men regardless of sexual activity status.

This study is one of the few to assess male patients' perceptions of learning about pregnancy prevention in primary care. Past work has focused primarily on assessing males' interest and willingness to learn about pregnancy prevention. One study, conducted among males aged 16-28 in a family planning clinic, indicated that few (5%) were interested to learn more about birth control.¹⁹ However, another clinic-based study conducted among male patients aged 16-35 found that the majority wanted their healthcare provider to bring up family planning topics including how to use a condom correctly (70%), female birth control methods (64%), and emergency contraception (75%).¹⁸ The findings of the current study extends this literature by assessing young men's perceptions of having learned about pregnancy prevention, rather than just their interest in the topic, and the importance of addressing care beyond a focus on just STDs/HIV.²⁷

Study findings highlight the important role that receipt of pregnancy prevention services may play in young men's perception that they have learned about pregnancy prevention. It may be that young men are more likely to perceive that they learned about pregnancy when providers ask them about their plans for having children and then tailor pregnancy prevention counseling to their individual needs. Past work suggests that young men prefer their providers to initiate conversations about sexual and reproductive health, including pregnancy prevention, rather than actually bring it up themselves¹⁸ indicating the importance for providers to initiate these types of discussions with young men. The current study contributes to a broader literature that demonstrates positive impact on young men's sexual and reproductive health outcomes.³⁰⁻³² For example, one recent meta-analysis demonstrated brief interventions targeting males in mainly STD clinical settings holds promise for improving condom use behaviors and reducing STDs; this review did not identify studies assessed pregnancy prevention as an outcome and few were evaluated in primary care.³⁰ Future work will need to formally evaluate primary care provider-patient

interactions on young men's knowledge gained, contraception use, and related pregnancy prevention outcomes (e.g., reductions in unintended pregnancy) to determine the most acceptable and effective approaches to engage this population in pregnancy prevention in primary care.

Just over one-quarter of young men in this study reported both being asked about their reproductive life plan and counseled on pregnancy prevention. It is possible that despite national guidance on family planning for both men and women, these recommendations have not been incorporated into care delivery for young men as they have for women.⁹ Primary care providers may need to be more proactive in asking and counseling male patients about pregnancy prevention, given the past work that demonstrates young men prefer their providers initiate these discussions.¹⁸ Systems may also need to be put into place to allow and promote providing quality education and counseling about pregnancy prevention for males and to standardize this as part of care for all patients, as recommended by national guidance.⁹ Broader public health approaches may also be needed to improve young men's awareness and knowledge about pregnancy prevention; however, young men perceive their doctors and parents as the most reliable sources of sexual and reproductive health information,^{10,11} and, therefore, healthcare providers have an important role to play.

This study provides preliminary evidence that young men with contraception needs were more likely than those without needs to perceive they learned about pregnancy prevention during their visit. These findings highlight the importance of primary care providers to assess their male patients on contraceptive use in addition to providing education about all contraception methods. This is especially relevant since young men may not use condoms consistently or correctly and may rely on less effective methods (e.g., withdrawal) or partner methods (e.g., the pill).^{1,24}

This study has several limitations. First, data was cross-sectional in nature, thus study findings should not be interpreted as causal. Next, pregnancy prevention service receipt was based on self-report and may not correspond to actual care delivered. Past work shows that adolescents' self-report is valid to determine receipt of clinical services, particularly when assessments are recent (e.g., past 2-4 weeks)³³; reporting in this study occurred immediately after the visit. Young men in this study may also not have reliably reported their female partner's contraceptive method use.^{4,34} Study findings may not be generalizable due to the majority of the sample being non-Hispanic Black and data being collected from three primary care settings in one city. Further, the current study assessed only whether participants perceived they learned about pregnancy prevention at the end of the visit, rather than assessing the quality of care the provider delivered or changes in knowledge, attitude, and behavior before and after the visit. Finally, this study did not assess for current desire for partner pregnancy, which could underestimate the percent of males reporting no contraception use who did not perceive they learned about pregnancy because they were not in need. Offsetting these limitations is the study's description of young men's perceptions of having learned about pregnancy prevention in the context of primary care and the important role that pregnancy prevention care receipt may play in increasing perceptions of knowledge gained.

This study found that a minority of young men, regardless of their sexual activity status, perceived they learned about pregnancy prevention at their primary care visit. This perception was associated with receipt of pregnancy prevention and contraception needs at last sex. Study findings highlight the need to address pregnancy prevention service delivery to young men in primary care.

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Table 1.

Participants' characteristics

Characteristics	Sample distribution	
	N	%
Demographic & visit factors		
Age		
15-17	79	41.6
18-19	36	18.9
20-24	75	39.5
Race/ethnicity		
Non-Hispanic Black	172	90.5
Non-Hispanic white or Hispanic ^a	18	9.5
Reason for visit		
Physical exam	103	54.2
STD concern/screen	43	22.6
Other acute issue (e.g., illness or injury)	44	23.2
Prior patient	169	89.0
Reproductive history^b		
Ever sexually active with female	148	77.9
Age of first sex		
14 or younger	56	37.8
15 or older	92	62.2
Number of female partners in last 3 months		
0	22	14.9
1	60	40.5
2 or more	66	44.6
Ever fathered a child	27	18.2
Pregnancy prevention service receipt		
Neither service	91	47.9
Asked about plans for having children only	18	9.5
Counseled about pregnancy prevention only	28	14.7
Both services	53	27.9
Contraception use at last sex^b		
No method	42	28.4
Condom only	57	38.5
Partner method only	23	15.5
Dual methods	26	17.6
Learned about pregnancy prevention		
Strongly disagree	30	15.8
Disagree	51	26.8
Agree	49	25.8

Characteristics	Sample distribution	
	N	%
Strongly agree	60	31.6

STD=Sexually Transmitted Disease

^aDue to the small sample size, patients reporting to be white, Asian/Pacific Islander, Native American, Hispanic, or another race or ethnicity were coded together into one group, including non-Hispanic white (n=15) and Hispanic (n=2)

^bAmong sexually active participants only

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Table 2.

Proportion of participants who perceived they learned about pregnancy prevention among characteristic by sexual activity

Characteristics	Among characteristic, proportion who perceived they learned about pregnancy prevention					
	Sexually active (N=148)			Never sexually active (N=42)		
	N	%	Chi-square	N	%	Chi-square
Total sample	49	33.1		11	26.2	
Demographic & visit factors						
Age			1.98			2.56
15-17	17	36.2		10	31.3	
18-19	13	40.6		1	25.0	
20-24	19	27.5		0	0.0	
Race/ethnicity			2.02			3.36
Non-Hispanic Black	47	34.6		8	21.6	
Non-Hispanic white or Hispanic ^a	2	16.7		3	60.0	
Reason for visit			2.55			1.06
Physical exam	28	36.4		8	30.8	
STD concern/screen	13	37.1		2	25.0	
Other acute issue (e.g., illness or injury)	8	22.2		1	12.5	
Prior patient			0.10			2.89
No	6	30.0		1	100	
Yes	43	33.6		10	24.4	
Reproductive history^b						
Age of first sex			0.31			-
14 or younger	17	30.4		-	-	
15 or older	32	34.8		-	-	
Number of female partners in last 3 months			2.95			-
0	4	18.2		-	-	
1	23	38.3		-	-	
2 or more	22	33.3		-	-	
Ever fathered a child			0.00			-
No	40	33.1		-	-	
Yes	9	33.3		-	-	
Pregnancy prevention service receipt						
Neither service	10	15.1		5	20.0	
Asked about plans for having children only	5	31.2		0	0.0	
Counseled about pregnancy prevention only	7	36.8		2	22.2	
Both services	27	57.4		4	66.7	
Contraception use at last sex^b						
			17.18 ^{**}			-

Characteristics	Among characteristic, proportion who perceived they learned about pregnancy prevention					
	Sexually active (N=148)			Never sexually active (N=42)		
	N	%	Chi-square	N	%	Chi-square
No method	11	26.2		-	-	
Condom only	20	35.1		-	-	
Partner method only	15	65.2		-	-	
Dual methods	3	11.5		-	-	

STD=Sexually Transmitted Disease

* p<0.05,

** p<0.01,

*** p<0.001

^aDue to the small sample size, patients reporting to be white, Asian/Pacific Islander, Native American, Hispanic, or another race or ethnicity were coded together into one group, including non-Hispanic white (n=15) and Hispanic (n=2)

^b Among sexually active participants only

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Unadjusted and adjusted associations between perceived learning about pregnancy prevention and care receipt and contraception need characteristics among sexually active young men

Table 3.

Characteristics	Perceived learning about pregnancy prevention	
	RR (95% CI) ^d	aRR (95% CI) ^b
Pregnancy prevention service receipt		
Neither service	Ref	Ref
Asked about plans for having children only	2.06 (0.80-5.30)	1.99 (0.83-4.81)
Counseled about pregnancy prevention only	2.43 (1.06-5.56) [*]	1.70 (0.73-3.96)
Both services	3.79 (2.03-7.07) ^{***}	3.35 (1.71-6.55) ^{***}
Asked about plans for having children only	Ref	Ref
Counseled about pregnancy prevention only	1.18 (0.46-3.03)	0.85 (0.33-2.17)
Both services	1.84 (0.85-3.98)	1.68 (0.78-3.63)
Counseled about pregnancy prevention only	Ref	Ref
Both services	1.56 (0.81-2.99)	1.97 (1.03-3.77) [*]
Contraception use at last sex		
Dual methods	Ref	Ref
Partner method only	5.65 (1.84-17.35) ^{**}	7.89 (2.35-26.50) ^{**}
Condom only	3.04 (0.97-9.49)	3.57 (1.19-10.78) [*]
No method	2.27 (0.68-7.53)	3.21 (1.00-10.34)
Partner method only	Ref	Ref
Condom only	0.53 (0.34-0.86) [*]	0.45 (0.26-0.78) ^{**}
No method	0.40 (0.22-0.73) ^{**}	0.41 (0.21-0.79) ^{**}
Condom only	Ref	Ref
No method	0.75 (0.40-1.40)	0.90 (0.47-1.71)

CI=Confidence Interval; RR=Relative Risk; aRR=adjusted Relative Risk; STD=Sexually Transmitted Disease

^{*} p<0.05,

^{**} p<0.01,

^{***} p<0.001

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Data from bivariate Poisson regression models with RRs and 95% confidence intervals; none of the demographic, visit and reproductive history characteristics were associated with the study outcome
Data from multivariable Poisson regression with adjusted RRs and 95% confidence intervals representing relationship between independent variables and perceived learning about pregnancy prevention while controlling for demographic, visit, and reproductive history characteristics

Unadjusted and adjusted associations between perceived learning about pregnancy prevention and participants' characteristics among never sexually active young men

Table 4.

Characteristics	Perceived learning about pregnancy prevention	
	RR (95% CI) ^d	aRR (95% CI) ^b
Demographic & visit factors		
Race/ethnicity		
Non-Hispanic Black	Ref	Ref
Non-Hispanic white or Hispanic ^a	2.78 (1.03-7.45) *	5.49 (0.79-37.96)
Prior patient		
No	Ref	Ref
Yes	0.24 (0.14-0.43) ***	1.48 (0.20-11.04)
Pregnancy prevention service receipt		
Neither service	Ref	Ref
Either service ^d	0.91 (0.19-4.36)	0.93 (0.20-4.42)
Both services	3.33 (1.20-9.23) *	3.88 (1.31-11.52) *
Either service ^d	Ref	Ref
Both services	3.67 (0.85-15.73)	4.17 (1.15-15.17) *

CI=Confidence Interval; RR=Relative Risk; aRR=adjusted Relative Risk; STD=Sexually Transmitted Disease

* p<0.05,

** p<0.01,

*** p<0.001

^aData from bivariate Poisson regression models with RRs and 95% confidence intervals; none of the other demographic or visit characteristics were associated with the study outcome

^bData from multivariable Poisson regression with adjusted RRs and 95% confidence intervals representing relationship between independent variables and perceived learning about pregnancy prevention while controlling for demographic, visit, and reproductive history characteristics

^cDue to the small sample size, patients reporting to be white, Asian/Pacific Islander, Native American, Hispanic, or another race or ethnicity were coded together into one group, including non-Hispanic white (n=15) and Hispanic (n=2)

^dProvider either asked about plans for having children or counseled on pregnancy prevention