Published in final edited form as:

Am J Obstet Gynecol. 2015 September ; 213(3): 352.e1–352.e14. doi:10.1016/j.ajog.2015.04.025.

A Population-Based Study of U.S. Women's Preferred Versus Usual Sources of Reproductive Health Care

Kelli Stidham Hall, PhD, MS [Research Investigator and NIH “Bircwh” K-12 Scholar],
Department of Obstetrics and Gynecology, Institute for Social Research, University of Michigan,
L4000 Women's Hospital, 1500 E. Medical Center Dr., Ann Arbor, MI 48109, (t) 734-232-1818 (f)
734-647-9727

Elizabeth W. Patton, MD, MPhil [VA Scholar],
Robert Wood Johnson Clinical Scholars Program, University of Michigan

Halley P. Crissman, MPH,
School of Medicine, University of Michigan

Melissa K. Zochowski, MBA [Research Manager], and
Department of Obstetrics and Gynecology, University of Michigan

Vanessa K. Dalton, MD, MPH [Associate Professor]
Department of Obstetrics and Gynecology, Program on Women's Health Care Effectiveness
Research; Institute for Healthcare Policy and Innovation, University of Michigan

Kelli Stidham Hall: hkelli@umich.edu

Abstract

Objective—We characterized U.S. women's preferred and usual sources of reproductive health care.

Study Design—Data were drawn from the Women's Health Care Experiences and Preferences Study, an internet survey of 1,078 women aged 18-55 randomly sampled from a national probability panel. We described and compared women's preferred and usual sources of care (women's health specialists including ob/gyns and family planning clinics, primary care, other) for Pap/pelvic exam, contraception and STI services using Chi-square, logistic regression, and kappa statistics.

Results—Among women reporting health service utilization (n=984, 92% overall; 77% Pap/pelvic; 33% contraception; 8% STI), women's health specialists were the most used sources of care for Pap/pelvic (68%), contraception (74%), and STI (75%) services. Women's health specialists were also the most preferred care sources for Pap/pelvic 68%, contraception 49%, and STI 35% services, while the remainder of women preferred primary care/other sources or not to

Correspondence to: Kelli Stidham Hall, hkelli@umich.edu.

Conflict of Interest: The authors have no conflicts of interest to report

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get care. Differences in preferred and usual care sources were noted across sociodemographic groups, including insurance status and income level (p -values <0.05). Preference for women's health specialists was the strongest predictor of women's health specialist utilization for Pap/pelvic (aOR 48.8, 95% CI 25.9, 91.8, $p<0.001$) and contraceptive (aOR 194.5, CI 42.3, 894.6, $p<0.001$) services. Agreement between preferred and usual care sources was high for Pap/pelvic (85%, kappa 0.63) and contraception (86%; kappa 0.64) services; disagreement (range 15%-22%) was associated with insurance, employment, income, race, and religion (p -values <0.05).

Conclusion—Women's preferences for and use of women's health specialists for reproductive health care has implications for efforts to define the role of ob/gyns and family planning clinics in current health systems.

Keywords

Women's health service utilization; health service preferences; reproductive health care

Introduction

The role of specialized women's health providers, including obstetrician/gynecologists (ob/gyns), in providing comprehensive preventive services has become increasingly unclear. In part, this uncertainty follows guidelines that significantly reduce the frequency of cervical cancer screening episodes and that recommend against routine pelvic examinations for asymptomatic women - services historically delivered by women's health specialists.¹⁻⁴ The impact of these recommendations on utilization of women's health specialists remains to be seen but may have implications for delivery of other reproductive health services, including family planning.

An estimated 35%-45% of women use multiple providers for their health care needs – most often a women's health specialist for reproductive health care and a generalist for other health issues.⁵ Some research has suggested that women's visits to ob/gyns are more likely to include cervical and breast cancer screening, contraceptive provision, and chlamydia testing but less likely to include other preventive services, including colon cancer, diabetes, and cholesterol screening, and counseling services, than generalist visits.⁶⁻⁸ The mixture of health care sources women use may reflect their perceived and/or actual need for and access to specific types of services, as well as their preferences for sources of care.^{9,10}

Indeed, health service preferences may help explain observed utilization patterns by provider type and setting.^{5,10} However, preferences for source of care, which we defined here as where women would most like to get their care should they not face any barriers to access or utilization, have not been well characterized but are important for efforts to define the role of women's health specialists in current health systems. Our study describes and compares associations between preferred and usual sources of reproductive health care among a population-based cohort of U.S. women.

Materials and Methods

Study Design and Sample

We used population-based, cross-sectional data from the Women's Health Care Experiences and Preferences Study, an Internet-based survey of 1,078 U.S. women aged 18-55 years conducted in September 2013.¹¹ GfK (formerly Knowledge Networks, Menlo Park, CA, USA) fielded the survey among their national household random probability panel. GfK is an existing internet-based panel comprised of 50,000 U.S. residents aged 13 and older. The GfK panel is sampled via random digit dialing telephone and probability-based address mailing methods, which enables inclusion of cell-phone only households that are often excluded from random digit dialing sample frames. Individuals solicited to participate in the GfK panel but who do not have Internet access are provided with a laptop and Internet access at no cost. Each member of the panel has a unique login to allow them to access online surveys and survey invitations are sent by email. Modest incentives are used to encourage participation in the panel (e.g. \$4 monthly gift card). All panelists routinely update individual and house demographic data, which allows for complex, stratified sampling designs. Additional detailed information about the GfK panel and sampling methods can be located at www.gfk.com.

Among GfK panelists eligible for inclusion in our study (English-speaking women ages 18-55), a random sample of 2,520 women were emailed an invitation to participate. Sampling weights adjusted for the complex, stratified sampling design and brought the sample in line with national demographic benchmarks. This study was approved by the University of Michigan's Institutional Review Board.

The Women's Health Care Experiences and Preferences survey, which was designed specifically for this study based upon our prior reproductive health services research, an extensive review of the relevant literature, and drawing upon well-established surveys (e.g. National Survey of Family Growth), included 29 items to measure women's experiences with and preferences for a variety of types of health care and sources of care, especially for reproductive health.¹¹ We collected information on women's sociodemographic characteristics, reproductive and health histories, mental health and social wellbeing, relationship characteristics, health and health service behavioral intentions, and reproductive health care and policy knowledge and attitudes. The average survey completion time was 15 minutes. The survey was pilot tested among 25 GfK panelists per standard procedures prior to administration to the random sample to ensure readability, timing of administration, and comprehension.

Measures

A series of items measured women's experiences with and preferences for sources of reproductive health care. Women were first asked how often on average they had seen a health care provider in the past five years and what type of health care facility they had visited most often. Specific types of women's health service use included Pap smear/pelvic exam, contraception, sexually transmitted infection (STI) testing/treatment, breast exam, mammogram, and pregnancy-testing services.

Women who responded that they had used each type of service were then asked about their most commonly used sources of care. Responses included: women's health specialist (e.g. obstetrics/gynecology, family planning); primary care/family medicine/internal medicine/general; urgent care/walk-in clinic; emergency medicine; mental health specialist/psychiatrist; other; or don't know. Due to small numbers of women reporting use of the latter categories, we collapsed responses into three-point categorical (women's health specialist, primary care, or other) and binary (women's health specialist versus other) indicators.

Women were then asked similar questions about their preferred sources of care for each type of health service listed above. "If cost and other barriers were not an issue, what type of health care provider would you most like to go to for the following health services." The response options for preferred sources of care were also the same as above, with the addition of, "I do not need or would not get care for that issue."

Our analytic sample included 984 women who reported that they had used health services in the past five years and responded to all women's health services use and sources of care items. Here, we focus on reproductive health services, including Pap smear/pelvic exam, contraception, and STI services.

We examined the following demographic, social, and reproductive history factors as covariates based upon our prior work:¹¹ age, race/ethnicity, educational attainment, marital status, income level, religious affiliation and service attendance, political party affiliation, type of health insurance, and reproductive history, including pregnancy, childbirth, and use of provider-dispensed/hormonal contraception.

Statistical Analysis

We applied sampling weights and employed weighted statistical commands in STATA 12.0 (College Station, Texas). We used weighted proportions to describe the sample's characteristics and Pearson's Chi-square tests to compare proportions of sources of care used and preferred, for each of the three types of reproductive health services, and to examine associations between sources of care (usual and preferred) and women's sociodemographic and reproductive background characteristics. We used multivariable logistic regression to further examine associations between usual and preferred sources while controlling for covariates. Among women who reported that they had used and would seek care for reproductive health services, we assessed the level of agreement between usual versus preferred sources with Kappa statistics. Finally, we explored binary "agreement" variables to denote the proportion of women whose usual source of care agreed with their preferred source and the proportion whose usual and preferred sources disagreed. Chi-square tests identified sociodemographic covariates associated with source of care disagreement.

Results

Of the 2,520 randomly sampled GfK panelists who received the survey invitation, 43% (n=1,078) completed our study. Compared to respondents, non-respondents were more likely to be aged <30 years, identify as Black or Hispanic ethnicity, have <high school

education, and annual incomes of <\$25,000 (all p-values<0.01). We examined and adjusted for these factors in analyses.

Sample Characteristics (N=984)

The mean age of our analytic sample was 40 years (standard deviation 10); 68% were of reproductive age (<44 years). The majority identified as White, (62%), followed by Hispanic (16%), Black, (14%) and other (9%) race/ethnicity. College educational attainment was common (65%). Two thirds of women were employed (63%) and 43% had incomes >\$75k. Most women identified a religion denomination (80%), with 29% reporting religious service attendance once a week or more frequently. Women identified politically as Democratic (36%), Republican (23%), or non-affiliated (29%). Over two-thirds of women had private, commercial, or employer based health insurance (63%); 12% had Medicaid/Medicare and 15% were uninsured. Two thirds of women were currently or previously married (63%) and had a history of pregnancy (62%); 57% had experienced childbirth. Ever use of a provider-dispensed/hormonal contraception method was common (73%), with 27% of women having used a method in the last year.

Use of Reproductive Health Services

Among the 984 women who reported using services in the past five years, 50% visited more than annually, 35% annually, and 15% every two to five years. The most common type of setting visited was private/HMO/employer-based practices (76%). Nearly all women (81%) reported at least one reproductive health visit, including service utilization for Pap/pelvic exam (77%), contraception (33%), and STI (8%) care.

Sources of Reproductive Health Care Used—Women's usual and preferred sources of care are presented in Tables 1-3. The majority of women used women's health specialists for all types of reproductive health services (Pap/pelvic 68%, contraception 74%, and STI 75%), while use rates of primary care (range 21-29%) and other sources (range 3-5%) were lower (Table 1).

Characteristics associated with usual sources of care, which included income level, marital status, employment status, political party affiliation, type of insurance, residence, and history of provider-dispensed contraceptive use (Table 1), varied to some extent by type of service. For example, poor, unmarried, unemployed, and rural-residing women had lower proportions of using women's health specialists and higher proportions of using primary care/other sources, compared to their counterparts (Table 1).

Preferences for Reproductive Health Care

Women's health specialists were the most preferred source of care for Pap/pelvic exam (68%), contraception (49%), and STI (35%) services, while 19-26% preferred primary care providers; a significant proportion of women reported that they would not seek care for contraception (28%) and STI (42%) services (Table 2).

Nearly all women's sociodemographic and reproductive characteristics were associated with preferred sources of care (p-values<0.05)(Table 2). While associations differed somewhat

by type of service, generally, proportions who preferred women's health specialists were higher among women who were of younger age groups (<45 years), college educated, White race/ethnicity, higher income level (>\$75K), privately insured, and had used ever provider dispensed/hormonal contraception, compared to their counterparts. Proportions of women who reported that they would not seek care for contraception and STI services were higher among adult (35-55 years) and married women and those without provider/hormonal contraceptive use histories.

Associations and Agreement Between Usual and Preferred Sources of Care

In multivariable models (Table 3), women's health specialists as the preferred source of reproductive health care was the strongest predictor of utilization of women's health specialists for Pap/pelvic (aOR 48.8, 95% CI 25.90, 91.80, $p<0.001$) and contraceptive (aOR 194.52, CI 42.30, 894.59, $p<0.001$) services. Point estimates were similar in models where we treated source of preference as the outcomes (not shown). Sociodemographic factors associated with use of women's health specialists included insurance status and political party affiliation for pap/pelvic exam services and age, educational attainment, race/ethnicity, income level, insurance status, religious affiliation and service attendance, political party affiliation, and history of pregnancy and provider-dispensed/hormonal contraceptive use in the last year (Table 3).

Overall, the majority of women who had and would use reproductive health services experienced high levels of agreement between their usual versus preferred sources of care (Table 4). High levels of agreement were most notable for Pap/pelvic exam (85%, expected agreement 60%, kappa 0.63, $p<0.001$) and contraception (86%; expected agreement 61%, kappa 0.64, $p<0.001$) services. Disagreement between women's usual and preferred sources of care was 15% for contraception, 17% for Pap/pelvic exam, and 22% for STI services (Table 5), with the most common trend in disagreement being higher proportions preferring but not using women's health specialists, across all three types of care. For Pap/pelvic exam services, proportions of disagreement between usual versus preferred sources of care were higher among unemployed, uninsured, and lower income (<\$25K) women than compared to socioeconomically advantaged women (Table 5). For STI services, women of "other" race/ethnicity, religious affiliation, and frequent religious service attendance had greater disagreement than their counterparts.

Comment

While utilization of reproductive health services has been well-described,¹²⁻¹⁸ women's health care preferences are an understudied but important consideration for efforts to clarify the role of specialized women's health providers in current health systems and patient-centered models of care.¹⁹ Women's health specialists have long been a commonly used source of care among reproductive aged women,^{5,7,8} and some research has further suggested that women may be most satisfied with their care coordination and comprehensiveness when their regular provider is a women's health specialist, particularly an ob/gyn.²⁰ The majority of prior work has focused on women's preferred sources of primary care. Our study contributes to the literature by characterizing preferences and usual sources of reproductive health care among a population-based sample of U.S. women.

Although there was some diversity in both preferences and utilization patterns, the overwhelming majority of women preferred women's health specialists, including ob/gyns and family planning clinics, for their Pap/pelvic, contraception and STI services. Furthermore, the majority of women experienced high levels of agreement between their preferred and usual sources of care.

Women's preferences for particular sources of reproductive health care may reflect their desires for, as well as their perceived access to, the specific types of services, settings, and providers they believe will best meet their health needs.^{9,10,19} Long-standing conceptualizations of health care in the U.S. likely shape women's familiarity and comfort with traditional models of reproductive health services provision, particularly among those who groups of women have been well afforded access to care and who have engaged the system.^{9,10,19} On the other hand, women who have relied upon and had greater access to specialty sources may also lack knowledge regarding the ability of primary care and other providers to deliver Pap/pelvic exam, contraception, and STI services. Socially disadvantaged women, such as insured women or those on Medicaid, have disproportionately experienced less access to specialists and relied upon generalists, public health clinics, and other sources (e.g. emergency departments) for the majority of their care, experiences which may uniquely inform their preferences for care. Unfortunately, our survey did not assess women's *reasons* for their preferred or utilized sources of reproductive health care, nor did it elicit their perceptions regarding access to care (or lack thereof) and specific barriers to service utilization. Moreover, our simple measure of "preference" (single item on where women would most like to go should they not face barriers) precluded a comprehensive, multi-dimensional, and nuanced understanding of what health care preferences mean for these women. Additional research is needed to understand how women's perceptions of the role of women's health specialists, generalists, and other sources of care may inform patient-centered models of reproductive health care.

An important minority of women in our study reported preferring and using primary care sources for their Pap/pelvic exam, contraception, and STI services. Moreover, there were some important differences in primary care source preference and utilization across sociodemographic groups. Often, older, less educated, non-White, lower income, unemployed, and uninsured women had higher rates of preferring and using primary care providers for reproductive health services than their socially advantaged counterparts. This may further suggest that women's preferences for care are shaped by past experience with and access (or lack thereof) to specific types of providers.^{9,10,19} In our study, younger, poor, uninsured, and minority women experienced higher rates of discordance between their actual and preferred sources of reproductive health care (up to 21%). These are the same groups of women that disproportionately experience adverse reproductive health outcomes, including high rates of unintended pregnancy and STIs.²¹⁻²⁵ Our findings may provide insight into whether and why women's health care goals may (or may not) be achieved and help explain the negative, disparate trends in reproductive health service utilization and outcomes among U.S. women.

While our sample was drawn from a national probability panel and we applied sampling weights to adjust for our response rate, women in our study are older, more educated,

privately insured and of higher income than the general U.S. population and were similarly different from non-responding GfK panelists. Additionally, our survey did not ascertain potentially important multi-level factors, such as regional variations and health facility characteristics, which impact women's access to and experiences with services and are important considerations. These sampling and response biases not only reduce our generalizability but also appear to impact our estimates of interest. That is, high utilization rates of some services but not others (Pap/pelvic vs. contraception) may reflect women's needs for services and help explain high levels of agreement between used and preferred sources of care. Thus, our estimates of women's preferences for primary care and other providers, as well as for source of care disagreement, are likely underestimations that do not adequately capture the perspectives and experiences of younger and poor women. Small sub-samples reporting use of STI and contraceptive services and those using other sources of care (e.g. urgent care/walk-in clinics, emergency departments) were small and limited our ability to comment on the potential role of a diversity of health provider types in reproductive health care provision, precluding an adequate examination of potentially important sources of care, especially for socially disadvantaged women. Finally, our survey items did not distinguish between important differences in private ob/gyn practices versus family planning clinics, nor did it explicitly define family planning clinics, which may have been interpreted differently by different women. In an era of health reform and political and economic threats to comprehensive reproductive health care,²⁶⁻²⁸ it will be critically important to continue to monitor and evaluate the specific roles of ob/gyns and family planning clinics in reproductive health services provision.

Our findings have implications for continued efforts to define the role of women's health specialists as a common and preferred source of reproductive health care.²⁶⁻²⁸ Our study also has implications for integrated models of women's health care - for the subset of women who prefer and use primary care providers for their reproductive health needs but also for the role of women's health specialists in providing access to primary and other types of care, which we are continuing to investigate.^{20,29} Women's ability to receive all of their needed and desired health services from a single provider is unlikely in current (segregated and highly specialized) health systems. Improved care coordination models, including consultation, referral, and tele-health systems, that strengthen communication and collaboration between women's health specialists and other providers and link women's preferred sources of care with resources to address all of their health issues are warranted.^{5,6,20,30} Continued research and clinical practice efforts can identify the best strategies and settings to provide accessible, patient-centered, quality women's health care in the United States.

Acknowledgments

Funding Source: This work was supported by a NICHD Building Interdisciplinary Careers in Women's Health K-12 Career Development grant #K12HD001438 (KSH), the Robert Wood Johnson Clinical Scholars Program/Department of Veterans Affairs (EWP), and the Program on Women's Health Care Effectiveness Research in the Department of Obstetrics and Gynecology at the University of Michigan (Director VD).

Source of work: Women's Health Care Experiences and Preferences Study, a population-based survey administered August 2013 using the GfK (formerly Knowledge Networks) nationally representative probability panel.

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Clinical Implications

- Our findings may inform efforts to define the role of women's health specialists as an important, continued source of reproductive health care in the U.S.
- Our study also has implications for integrated care models in which reproductive health service delivery can occur in primary care contexts, and vice versa - women's health specialists can provide access to primary, mental health, and other types of care.
- Improved care coordination, including consultation, referral, and tele-health systems, which strengthens communication, collaboration, and linkage between women's health specialists and other providers and comprehensively addresses women's health issues is needed.
- Future research and clinical practice efforts can identify the best strategies and settings to provide accessible, patient-centered, quality women's health care in the United States.

Proportions of Women's Usual Sources of Reproductive Health Care in the Past Five Years, By Sociodemographic Characteristics

Table 1

Sociodemographic Characteristics (N=984)	Sources of Care of Reproductive Health Services Used by Women											
	Pap Smear/Pelvic Exam Services N=775, 77%						Contraceptive Services N=296, 33%					
	WH	PC	Other	P	WH	PC	Other	P	WH	PC	Other	P
Age group	%	68	29	3	0.35	74	21	5	0.44	75	22	3
18-24 years	15	66	29	5		68	26	6		60	34	7
25-34 years	27	73	23	4		74	19	6		88	12	0
35-44 years	26	71	27	2		80	18	1		86	14	0
45-55 years	32	66	36	3		67	31	2		62	32	6
Educational attainment					0.20				0.57			0.26
<High School	9	61	34	5		51	41	8		0	0	0
High School	26	59	36	5		75	21	4		57	32	11
Some college	32	68	28	3		78	16	6		74	26	0
Bachelor's	33	73	25	1		73	23	3		89	11	0
Race/ethnicity					0.37				0.64			0.43
White, non-Hisp	62	71	27	2		73	22	4		82	15	3
Black, non-Hisp	14	62	31	6		60	28	11		67	28	5
Other, non-Hisp	9	64	29	7		70	25	6		79	21	0
Hispanic	16	60	38	2		87	10	4		42	58	0
Income					0.02				0.55			0.68
<\$25,000	17	56	36	8		61	30	9		61	29	10
\$25-49,999	22	64	31	5		77	17	6		81	15	4
\$50-74,999	19	65	33	2		76	24	0		84	16	0
\$75,000	43	74	25	1		76	20	4		76	24	0
Marital status					0.02				0.15			0.59
Married	54	72	26	2		83	15	3		88	10	2
Previously married	9	55	44	1		74	26	0		61	39	0
Never married	26	63	30	7		68	24	7		66	28	6

Sources of Care of Reproductive Health Services Used by Women

Sociodemographic Characteristics (N=984)	Pap Smear/Pelvic Exam Services N=775, 77%						Contraceptive Services N=296, 33%						Sexually Transmitted Infection Testing or Treatment Services N=67, 8%					
	%	WH	PC	Other	P	WH	PC	Other	P	WH	PC	Other	WH	PC	Other	P		
Cohabiting	11	64	34	2		58	36	6		80	20	0						
Residence					0.32				0.52							<0.001		
Metro	86	68	28	3		73	21	5		77	22	1						
Non-Metro	14	62	36	2		77	23	0		59	13	28						
Employment status					0.02				0.10							0.18		
Employed	63	69	29	2		77	20	2		74	26	0						
Not employed	37	64	29	6		67	24	9		79	13	8						
Religious affiliation					0.11				0.05							0.26		
Yes	80	70	27	3		77	17	6		75	24	1						
No	20	57	38	5		65	33	2		77	15	8						
Religious service attendance					0.24				0.62							0.28		
Weekly	29	75	23	2		79	18	3		85	11	4						
< Weekly	50	65	33	3		75	20	5		73	27	0						
Never	21	65	30	5		66	28	6		73	17	10						
Political party					0.01				0.34							0.55		
Democrat	36	64	32	4		72	24	4		73	27	0						
Republican	23	78	22	0		83	12	5		88	12	0						
Independent/Other	12	60	40	1		56	39	5		85	15	0						
None	29	65	29	1		75	19	5		70	21	9						
Type of insurance ^a					<0.001				0.006							0.90		
Private	63	72	28	<1		77	22	2		80	20	0						
Medicaid/care	12	65	33	2		79	21	0		77	18	5						
Other	9	57	40	4		57	34	9		68	31	0						
None	15	51	33	17		68	10	21		67	25	9						
Reproductive History Pregnancy ^b					0.96				0.61							0.03		
Yes	62	68	29	3		77	19	5		89	9	2						

Sources of Care of Reproductive Health Services Used by Women

Sociodemographic Characteristics (N=984)	Pap Smear/Pelvic Exam Services N=775, 77%				Contraceptive Services N=296, 33%				Sexually Transmitted Infection Testing or Treatment Services N=67, 8%			
	WH	PC	Other	P	WH	PC	Other	P	WH	PC	Other	P
No	68	29	3		74	21	5		75	22	3	
Childbirth ^b	67	29	3		71	25	4		61	35	5	
Yes	67	31	2	0.54	80	15	5	0.11	90	10	6	0.05
No	68	28	4		68	28	4		62	33	0	
Provider-dispensed contraception (ever) ^b				0.06				0.02				0.007
Yes	70	27	3		76	19	4		85	14	1	
No	57	39	4		54	44	2		41	48	11	
Provider-dispensed contraception (last year) ^b				0.02				0.68				0.46
Yes	76	20	4		73	22	5		77	23	0	
No	64	33	3		77	21	2		77	17	6	

WH = women's health specialist; PC = primary care/general provider; Other = other type of health care provider.

Results are presented as weighted proportions (%) among women who reported that they had received each type of care in the past 5 years. P-values (P) from unadjusted chi-square analysis comparing women's sources of care across sociodemographic and reproductive history characteristics. P-values considered significant at

* <0.05,

** <0.01 and

*** <0.001.

Y=yes, N=no, DK = don't know.

^a Includes two women did not know what type of insurance they had.

^b Reproductive history characteristics among women who reported sexual intercourse experience.

Table 2
Proportions of Women's Preferred Sources of Reproductive Health Care, By Sociodemographic Characteristics

Sociodemographic Characteristics (N=984)	Pap Smear/Pelvic Exam Services				Contraceptive Services				Sexually Transmitted Infection Testing or Treatment Services						
	WH	PC	Other	No Care	P	WH	PC	Other	No Care	P	WH	PC	Other	No Care	P
%	68	26	4	3		49	19	4	28		35	19	3	42	
0.02															
Age group	<0.001														
18-24 years	15	65	19	8	8	59	23	4	13		36	25	8	31	
25-34 years	27	69	24	5	3	63	20	5	12		41	19	4	35	
35-44 years	26	72	25	1	2	52	19	2	27		38	18	1	43	
45-55 years	32	64	31	3	2	32	16	5	48		28	17	3	52	
0.06															
Educational attainment	<0.001														
<High School	9	58	24	15	3	45	16	14	26		30	17	11	42	
High School	26	59	30	5	5	36	23	6	36		31	19	5	45	
Some college	32	66	29	2	3	50	20	3	28		34	22	2	42	
Bachelor's	33	78	19	1	2	61	16	1	22		41	16	1	41	
0.02															
Race/ethnicity	<0.001														
White, non-Hisp	62	70	27	1	3	52	20	1	27		37	19	1	42	
Black, non-Hisp	14	59	27	10	4	39	13	11	37		33	17	9	41	
Other, non-Hisp	9	66	29	3	2	51	24	4	21		24	28	3	45	
Hispanic	16	66	18	11	5	48	16	9	27		36	16	7	41	
0.001															
Income	<0.001														
<\$25,000	17	60	27	10	3	41	21	10	28		38	20	11	32	
\$25-49,999	22	62	30	6	3	43	20	7	29		37	17	5	42	
\$50-74,999	19	61	32	1	7	44	24	1	32		30	24	1	46	
\$75,000	43	76	20	2	2	58	15	1	26		36	17	1	45	
0.007															
Marital status	0.007														
Married	54	70	26	2	3	51	17	3	29		33	17	2	48	
Previously married	9	58	31	8	2	40	11	4	46		31	15	7	47	

Preferred Sources of Reproductive Health Care

	Pap Smear/Pelvic Exam Services					Contraceptive Services					Sexually Transmitted Infection Testing or Treatment Services				
	WH	PC	Other	No Care	P	WH	PC	Other	No Care	P	WH	PC	Other	No Care	P
Sociodemographic Characteristics (N=984)	%	68	26	4	3	49	19	4	28	35	19	3	42		
Never married	26	68	22	5	4	52	20	7	21	40	19	6	35		
Cohabiting	11	61	29	7	3	42	30	4	24	41	31	1	27		
Residence					0.02					0.07					0.19
Metro	86	69	24	4	4	51	18	4	27	36	18	4	42		
Non-Metro	14	61	36	2	1	39	26	3	32	29	24	2	45		
Employment status					0.06					0.01					0.003
Employed	63	71	24	2	3	50	19	2	29	37	18	1	44		
Not employed	37	62	28	6	4	48	19	7	25	33	21	7	40		
Religious affiliation					0.09					0.06					0.09
Yes	80	69	25	4	2	50	17	4	29	36	17	4	43		
No	20	61	30	3	6	46	28	4	23	32	27	3	38		
Religious service attendance					0.19					0.42					0.63
Weekly	29	72	21	3	4	48	18	6	28	36	16	2	46		
< Weekly	50	67	27	4	2	51	18	3	29	36	20	4	40		
Never	21	64	27	3	6	47	23	5	25	31	21	5	43		
Political party					0.44					0.09					0.14
Democrat	36	68	26	4	2	50	20	3	28	41	20	2	37		
Republican	23	73	23	2	2	50	18	2	29	26	19	3	53		
Independent/Other	12	62	31	5	2	45	21	2	32	33	19	6	42		
None	29	64	25	6	5	50	18	8	23	36	18	5	41		
Type of insurance ^a					0.005					<0.001					0.09
Private	63	70	27	1	2	51	20	1	28	35	20	2	43		
Medicaid/care	12	57	30	9	4	45	19	10	27	30	23	6	41		
Other	9	63	19	8	10	56	15	3	26	38	16	9	36		
None	15	70	20	7	3	44	17	11	28	41	15	5	39		

Sociodemographic Characteristics (N=984)	Preferred Sources of Reproductive Health Care									
	Pap Smear/Pelvic Exam Services					Contraceptive Services				
	WH	PC	Other	No Care	P	WH	PC	Other	No Care	P
Reproductive History Pregnancy ^b	%	68	26	4	3	49	19	4	28	0.51
Yes	62	67	28	3	2	47	19	4	30	0.51
No	38	68	21	5	5	52	19	4	24	0.22
Childbirth ^b										0.15
Yes	57	67	28	3	2	47	18	4	31	0.18
No	43	68	22	4	5	53	20	4	23	0.003
Provider-dispensed contraception (ever) ^b										0.006
Yes	73	70	25	3	2	54	19	3	23	0.02
No	27	63	26	4	8	39	18	5	38	<0.001
Provider-dispensed contraception (last year) ^b										0.004
Yes	27	76	21	3	1	70	22	4	4	0.004
No	73	65	27	3	4	42	18	4	36	0.004

WH = women's health specialist; PC = primary care/general provider; Other = other type of health care provider; No care = woman responded that she would not get care for that issue.

Results are presented as weighted proportions (%). P-values (P) from unadjusted chi-square analysis comparing women's health service use across sociodemographic and reproductive history characteristics. P-values considered significant at

* <0.05,

** <0.01 and

*** <0.001.

Y=yes, N=no, DK = don't know.

^a Includes two women did not know what type of insurance they had.

^b Reproductive history characteristics among women who reported sexual intercourse experience.

Table 3
Associations Between Preferences for and Use of Women's Health Specialists for Reproductive Health Care

	Odds of Using Women's Health Specialists Versus Other Sources of Care	
	Pap/Pelvic Exam aOR (95% CI) p-value	Contraception aOR (95% CI) p-value
Source of Care Preference		
Primary Care/Other	1	1
Women's Health Specialist	48.8 (25.90, 91.80) <0.001	194.52 (42.30, 894.59) <0.001
Age group		
18-24 years	1	1
25-34 years	0.64 (0.23, 1.81) 0.40	0.51 (0.13, 1.97) 0.33
35-44 years	0.53 (0.20, 1.44) 0.22	1.09 (0.19, 6.09) 0.93
45-55 years	0.49 (0.17, 1.44) 0.19	0.14 (0.02, 0.94) 0.04
Educational attainment		
<High School	1	1
High School	1.00 (0.30, 3.40) 0.99	23.60 (2.95, 188.32) 0.003
Some college	1.43 (0.44, 4.60) 0.55	11.98 (1.62, 88.27) 0.01
Bachelor's	0.88 (0.26, 2.93) 0.84	3.94 (0.51, 30.25) 0.19
Race/ethnicity		
White, non-Hisp	1	1
Black, non-Hisp	1.87 (0.66, 5.28) 0.24	0.09 (0.01, 0.67) 0.02
Other, non-Hisp	0.61 (0.23, 1.60) 0.31	0.85 (0.09, 8.02) 0.89
Hispanic	0.53 (.24, 1.19) 0.12	1.00 (0.17, 5.69) 0.99
Income		
<\$25,000	1	1
\$25-49,999	1.01 (0.39, 2.64) 0.98	1.50 (0.21, 10.31) 0.69
\$50-74,999	1.25 (0.43, 3.58) 0.68	23.97 (3.05, 188.46) 0.003
\$75,000	0.89 (0.34, 2.34) 0.82	2.87 (0.59, 13.82) 0.19
Marital status		
Married	1	1
Previously married	0.47 (0.21, 1.01) 0.05	2.38 (0.42, 13.50) 0.33
Never married	0.73 (0.31, 1.73) 0.47	0.36 (0.08, 1.61) 0.18
Cohabiting	0.71 (0.26, 1.98) 0.52	0.40 (0.08, 2.01) 0.27
Residence		
Non-Metro	1	1
Metro	1.51 (0.67, 3.44) 0.32	0.98 (0.29, 3.29) 0.97
Employment status		

	Odds of Using Women's Health Specialists Versus Other Sources of Care	
	Pap/Pelvic Exam aOR (95% CI) p-value	Contraception aOR (95% CI) p-value
Not Employed	1	1
Employed	.70 (.40, 1.24) .22	1.45 (0.54, 3.86) 0.46
Religious affiliation		
No	1	1
Yes	0.99 (0.43, 2.28) 0.99	0.17 (0.04, 0.70) 0.01
Religious service attendance		
Weekly	1	1
< Weekly	1.04 (0.54, 2.01) 0.90	0.30 (0.10, 0.92) 0.04
Never	0.86 (0.31, 2.33) 0.77	0.08 (0.02, 0.42) 0.003
Political party		
Democrat	1	1
Republican	2.25 (1.02, 4.93) 0.04	1.57 (0.44, 5.63) 0.49
Independent/Other	0.95 (0.46, 1.99) 0.90	0.25 (0.07, 0.95) 0.04
None	1.53 (0.76, 3.12) 0.24	1.07 (0.26, 4.43) 0.92
Type of insurance ^a		
Private	1	1
Medicaid/care	0.86 (0.28, 2.67) 0.80	1.18 (0.07, 21.09) 0.91
Other	0.16 (0.06, 0.39) <0.001	0.12 (0.03, 0.50) .004
None	0.19 (0.08, 0.44) <0.001	0.21 (0.03, 1.52) 0.12
Pregnancy		
No	1	1
Yes	1.09 (0.40, 3.01) 0.86	0.23 (0.06, 0.82) 0.03
Childbirth		
No	1	1
Yes	0.84 (0.31, 2.28) 0.78	3.55 (0.97, 13.02) 0.06
Provider-dispensed contraception (ever)		
No	1	1
Yes	1.82 (0.92, 3.57) 0.08	2.81 (0.40, 19.71) 0.29
Provider-dispensed contraception (last year)		
No	1	1
Yes	1.44 (0.71, 2.94) 0.32	0.22 (0.06, 0.81) 0.02

Results are presented as adjusted odds ratios (aOR) and 95% confidence interval (CI) and p-values from multivariable logistic regression models with usual source of care modeled as outcome (Women's Health Specialist versus Primary Care/Other) for pap/pelvic exam and contraceptive services. P-values significant at

*
<0.05,

**
<0.01,

<0.001.

Insufficient cell sample sizes to run STI service use model.

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Table 4
Agreement Between Women's Usual and Preferred Sources of Reproductive Health Care, Women's Health Specialists Versus Primary Care/Other

Type of Service	% Agreement	% Expected Agreement	Kappa Statistic	Standard Error	P-value
Pap Smear/Pelvic Exam Services	84.9%	59.6%	0.63	0.04	<0.001
Contraceptive Services	86.1%	61.4%	0.64	0.06	<0.001
Sexually Transmitted Infection Testing/Treatment Services	80.3%	62.9%	0.47	0.13	<0.001

Table 5
Disagreement Between Women's Usual and Preferred Sources of Reproductive Health Care, By Sociodemographic Characteristics

Sociodemographic Characteristics	Disagreement between Preferred and Usual Source of Care for Reproductive Health Services			
	Pap Smear/Pelvic Exam Services	Contraceptive Services	Sexually Transmitted Infection Testing/Treatment Services	P-value
	% Disagree	% Disagree	% Disagree	
All women	17	15	22	
Age group				0.89
18-24 years	14	9	18	
25-34 years	17	15	21	
35-44 years	15	22	24	
45-55 years	20	7	33	
Educational attainment				0.24
<High School	23	15	0	
High School	21	13	24	
Some college	18	20	36	
Bachelor's	12	11	9	
Race/ethnicity				<0.001
White, non-Hisp	14	15	21	
Black, non-Hisp	20	9	5	
Other, non-Hisp	27	23	86	
Hispanic	22	5	10	
Income				0.67
<\$25,000	26	24	11	
\$25-49,999	21	17	19	
\$50-74,999	15	20	32	
\$75,000	13	10	26	
Marital status				0.09
Married	17	15	41	
Previously married	12	19	0	
Never married	20	15	10	
Cohabiting	14	10	22	

Disagreement between Preferred and Usual Source of Care for Reproductive Health Services

Sociodemographic Characteristics	Pap Smear/Pelvic Exam Services		Contraceptive Services		Sexually Transmitted Infection Testing/Treatment Services	
	% Disagree	P-value	% Disagree	P-value	% Disagree	P-value
Residence		0.41		0.57		0.74
Metro	16		14		22	
Non-Metro	20		18		30	
Employment status		0.04		0.05		0.07
Employed	14		11		25	
Not employed	22		22		19	
Religious affiliation		0.46		0.40		0.008
Yes	16		16		28	
No	19		11		4	
Religious service attendance		0.88		0.19		0.04
Weekly	17		17		17	
< Weekly	16		17		30	
Never	18		7		1	
Political party		0.07		0.93		0.19
Democrat	15		14		16	
Republican	15		18		54	
Independent/Other	11		12		17	
None	24		15		18	
Type of insurance ^a		0.002		0.45		0.47
Private	13		12		22	
Medicaid/care	18		21		17	
Other	24		13		0	
None	32		25		36	
Reproductive History Pregnancy ^b		0.35		0.85		0.60
Yes	18		15		26	
No	15		14		19	
Childbirth ^b		0.38		0.40		0.60
Yes	18		17		26	

Disagreement between Preferred and Usual Source of Care for Reproductive Health Services

Sociodemographic Characteristics	Pap Smear/Pelvic Exam Services		Contraceptive Services		Sexually Transmitted Infection Testing/Treatment Services	
	% Disagree	P-value	% Disagree	P-value	% Disagree	P-value
No	15		13		19	
Provider-dispensed contraception		0.53		0.97		0.51
(ever) ^b	16		14		23	
Yes	19		15		14	
No						
Provider-dispensed contraception		0.13		0.83		0.30
(last year) ^b	13		15		14	
Yes	18		14		27	
No						

Results are presented as weighted proportions (%) of disagreement between women's preferred and usual sources of care for reproductive health services among women who used each type of reproductive health service in the past 5 years and stated that they would seek care for those services. P-values (P) from unadjusted chi-square analysis comparing % of agreement versus disagreement across sociodemographic and reproductive history characteristics. P-values considered significant at

* <0.05,

** <0.01 and

*** <0.001.

^a Includes two women did not know what type of insurance they had.

^b Reproductive history characteristics among women who reported sexual intercourse experience.