Use of Reversible Contraceptive Methods Among U.S. Women with Physical or Sensory Disabilities

CONTEXT: Women with disabilities experience a higher rate of adverse pregnancy outcomes than women without disabilities. Preventing or delaying pregnancy when that is the best choice for a woman is a critical strategy to reducing pregnancy-related disparities, yet little is known about current contraceptive use among women with disabilities.

METHODS: A cohort of 545 reproductive-age women with physical disabilities (i.e., difficulty walking, climbing, dressing or bathing) or sensory disabilities (i.e., difficulty with vision or hearing) was identified from among participants in the 2011–2013 National Survey of Family Growth. Those at risk for unplanned pregnancy were categorized by whether they were using highly effective reversible contraceptive methods (IUD, implant), moderately effective ones (pill, patch, ring, injectable), less effective ones (condoms, withdrawal, spermicides, diaphragm, natural family planning) or no method. Multinomial regression was conducted to examine the association between disability and type of contraceptive used.

RESULTS: Some 39% of women with disabilities were at risk of unplanned pregnancy, and 27% of those at risk were not using contraceptives. The presence of disability was associated with decreased odds of using highly effective methods or moderately effective methods, rather than less effective ones (odds ratio, 0.6 for each), but had no association with using no method.

CONCLUSION: There is a significant need to reduce contraceptive disparities related to physical or sensory disabilities. Future research should explore the extent to which contraceptive use differs by type and severity of disability, as well as identify contextual factors that contribute to any identified differences.

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A significant body of literature has documented physical and psychological health disparities between women with disabilities and others;[1–3] suboptimal outcomes have been reported both among individuals with physical disabilities[4,5] and among those with sensory disabilities.[6] Women who have disabilities are also more likely than other women to suffer from medical conditions that are unrelated to the disability itself, such as diabetes and heart disease.[1]

Health disparities related to women's disabilities extend to pregnancy-related care and outcomes. Women who reflect diverse definitions of disability, including severe mobility difficulties[7] and physical or psychological difficulties,[8] have been shown to be more likely than women without disabilities to experience unintended pregnancy;[8] delay prenatal care;[8] and have a preterm birth,[6,8,9] low-birth-weight infant[6–9] or cesarean delivery.[7] Women with disabilities are also more likely than others to experience intimate partner violence during pregnancy[10] and postpartum depressive symptoms.[11]

However, it is important to avoid assuming that all women with disabilities are at high risk for pregnancy complications. Current evidence, although limited, suggests that most women with physical disabilities have favorable pregnancy outcomes.[7] Nevertheless, among a U.S. population-based sample of pregnant women with physical disabilities, 65% reported at least two coexisting medical conditions;[1] this finding underscores the importance of providing contraceptive counseling and access for women with disabilities who wish to avoid or delay pregnancy.

The Centers for Disease Control and Prevention (CDC) and professional groups have called for greater attention to the reproductive health of women with disabilities, including the need for tailored contraceptive services.[12,13] To inform family planning policy and clinical services, it is necessary to estimate the scale of unmet demand for contraceptive counseling and services for women with disabilities. In response to these gaps, we analyzed data from the 2011–2013 National Survey of Family Growth (NSFG) to estimate the proportion of reproductive-age U.S. women who have physical or sensory disabilities and, among them, the proportion at risk for unplanned pregnancy; describe and compare current contraceptive use by women with and without disabilities; and explore associations between disability and contraceptive use.

METHODS
Study Design
The NSFG is a cross-sectional survey of U.S. reproductive-age women and men. A complete description of the survey instruments, sampling methods and data collection has been

published previously.[14] The 2011–2013 sample included 5,601 women aged 15–44 who are representative of the U.S. civilian, noninstitutionalized population; minorities and teenagers were oversampled, and data were adjusted for nonresponse.[14] The response rate for female interviewees was 73%.[15] Trained female interviewers conducted in-home surveys of women from September 2011 to September 2013, using the same procedures as were employed in previous rounds of the survey. Interviewers verbally administered the survey and recorded each response on a laptop. The final portion of the survey, which explored potentially sensitive topics, used audio computer-assisted self-interview; respondents listened to questions through headsets and typed answers into a laptop.

This study focused on a subset of the NSFG sample: women with physical or sensory disabilities. The 2011–2013 round of the survey was the first to include self-reported measures that differentiated individuals who have sensory disabilities and physical disabilities from those who have cognitive and psychological disabilities;[16] all but three women (5,598) responded to these questions. These items reflected categories and language similar to those used by the CDC Disability and Health Data System,[17] asking whether respondents have "serious difficulty hearing" (148 gave positive responses), "serious difficulty seeing even with glasses or contact lenses" (304), "serious difficulty walking or climbing stairs" (193), or "serious difficulty dressing or bathing" (53). In all, 545 women (10% of the sample) reported having at least one physical or sensory disability.

We determined the number of women with disabilities who were at risk for unplanned pregnancy by subtracting the number not at risk from our subsample. We considered women not at risk if they were surgically sterile (e.g., had had a hysterectomy) or had a male partner who was surgically sterile (e.g., had had a vasectomy); were medically sterile (e.g., postmenopausal) or had a male partner who was medically sterile (e.g., had impaired sperm function); were currently pregnant; were less than eight weeks postpartum; were actively seeking pregnancy; had never had heterosexual intercourse; or had not had heterosexual intercourse in the last three months.

Our subsample of women with disabilities did not include those with intellectual and developmental disabilities because these individuals cannot be accurately identified from the survey data. Women were asked if they have serious difficulty with different tasks (concentrating, remembering, making decisions, running errands alone) because of "physical, mental or emotional conditions," but were not asked to identify specific conditions. And the NSFG did not ascertain intellectual disability by requesting results of a recently administered psychometric test (e.g., IQ score) or asking for a written statement from a psychometrist, as recommended by the CDC.[18]

*This category comprised women who responded that they were "living with a male partner, not married."

Measures

•*Dependent measure.* Our dependent measure was use of reversible contraceptives, which we grouped according to effectiveness.[19] "Highly effective" methods comprised IUDs and progestin implants (also referred to as long-acting reversible contraceptive, or LARC, methods). "Moderately effective" methods were the pill, the transdermal patch, the vaginal ring and the injectable. The category "less effective" methods was made up of male and female condoms, withdrawal, spermicides, the diaphragm and natural family planning. Use of none of the above methods was categorized as "no method." Per the NSFG interview protocol, women could report up to four methods; the most effective one was considered the primary method.[20] Although the CDC categorizes the diaphragm as a moderately effective method,[21] we categorized it as less effective because of its high rate of failure in one year of typical use (12%) and its high rate of discontinuation at one year (57%).[19]

•*Independent measures.* We examined characteristics that have been associated with contraceptive use among a nationally representative sample of females:[15] age (15–24, 25–34, 35–44); race and ethnicity (non-Hispanic white, non-Hispanic black, Hispanic, other); education (some high school, high school or GED; some college; bachelor's degree or higher); income, as a percentage of the federal poverty level (less than 100%, 100–249%, or 250% or more); current insurance (private/Medigap, Medicaid/Children's Health Insurance Program/state insurance, Medicare, or underinsured/uninsured); marital status (married, cohabiting,* single); receipt of any birth control counseling in the last 12 months; desire for a baby in the future; and parity (nulliparous or parous).

We recognized the importance of accounting for medical conditions and drug therapy that may influence clinical and patient decisions regarding contraceptive selection, but the lack of appropriate variables (e.g., current medication lists) and small samples (e.g., few women had recently received a diagnosis of cancer) precluded us from doing so. Instead, we included related measures of health: self-rating of general health (excellent, very good, good, fair, poor); body mass index, based upon reported weight and height, and classified per the World Health Organization definition (less than 25, 25–29, 30–39, 40 or greater);[22] and ever having been advised by a physician to never get pregnant. Because smoking is a contraindication to estrogen use among women aged 35 or older,[23] we also assessed whether respondents had smoked at least one cigarette a day, on average, in the last 12 months; we constructed this variable by combining two measures of smoking history ("Have you smoked at least 100 cigarettes in your lifetime?" and if yes, "Approximately, how many cigarettes on average have you smoked daily in the last year?").

Analysis

All analyses were conducted with Stata 13.1. For descriptive analyses, we estimated percentages of women by selected sociodemographic and personal characteristics. We

calculated weighted population estimates as recommended by the National Center for Health Statistics to account for the survey's complex sampling strategy and nonresponse.[16] To compare characteristics of women with disabilities and women without disabilities, we used log binomial regression and calculated prevalence ratios with associated 95% confidence intervals. Chi-square tests were used to explore associations between the presence of disability and contraceptive category.

To assess the association between disability and contraceptive category, we conducted multinomial logistic regression. Women using less effective methods were designated as the reference group so that the relative odds of using no method could be estimated; we deemed the latter important because nonusers account for a disproportionately high proportion of unplanned pregnancies annually.[24,25] Designating users of less effective methods as the reference category also allowed us to highlight the relative odds of using moderately and highly effective methods. Because of small sample sizes, we were unable to include disability type as a variable in the multinomial regression model. Instead, we conducted a supplementary bivariate analysis to explore differences in contraceptive methods based on the presence of hearing disability only, visual disability only or physical disability only. Alpha was set at p<.05.

Because all data were de-identified, the University of Michigan Institutional Review Board deemed this study exempt from regulation.

RESULTS

Among the 545 women with disabilities, 39% were at risk of unplanned pregnancy, and 19% reported more than one disability. Women with disabilities differed from others on every sociodemographic and personal characteristic studied (Table 1). They were more likely to be aged 35–44, rather than 15–24 (prevalence ratio, 1.6), and were more likely to be Hispanic or black, rather than white (1.3 and 1.5, respectively). Lower socioeconomic status—as reflected by having less than a college degree, having an income that was less than 250% of the federal poverty level and lacking private insurance—had a consistently positive association with the presence of disability (1.3–3.0).

Women with disabilities were more likely than others to report fair or poor health (prevalence ratio, 5.0), a body mass index of 30 or more (prevalence ratios, 1.8–3.1), and having smoked at least one cigarette per day in the last 12 months (2.0). They were more likely than women without disabilities to have been advised never to get pregnant (3.6) and were less likely to want a child in the future (0.8), yet were more likely to have given birth (1.4).

Among women at risk of unplanned pregnancy, those with disabilities used moderately effective methods less frequently than those without disabilities (26% vs. 38%—Table 2). The pill accounted for 68% of use of moderately effective methods among women with disabilities and for 75% of such use among women without disabilities (not shown). The prevalence of nonuse was higher among women with disabilities (27%, representing an estimated 2.1 million such

women) than among others (15%). A supplementary bivariate analysis revealed no differences in contraceptive method use based upon the presence of hearing disability only, visual disability only or physical disability only (not shown).

In our multinomial logistic regression analysis (Table 3), after adjustment for sociodemographic and personal characteristics, disability was associated with decreased odds of using moderately effective methods or highly effective methods, rather than no method (odds ratio, 0.6 for each), but was no longer associated with contraceptive nonuse. Black women had lower odds than white women of using moderately effective or highly effective methods (0.5 for each). Other characteristics that were associated with reduced odds of using highly effective and moderately effective methods were being aged 35–44, being underinsured or uninsured, and not having received birth control counseling in the last 12 months. A number of characteristics had different associations with use of moderately effective and highly effective methods. Notably, daily smoking was associated with decreased odds of using moderately effective methods (most of which contain estrogen and should not be used by women aged 35 or older who smoke[23]), but was not related to use of highly effective methods or no method.

DISCUSSION

Ten percent of women in this population-based sample reported a physical or sensory disability. Among these women, four in 10 were at risk of unplanned pregnancy, yet three in 10 of those at risk used no birth control. A weighted population estimate based on these data suggests that 2.1 million women with disabilities are candidates for contraceptive services. In our adjusted model, the odds of using moderately effective and highly effective contraceptive methods were approximately 40% lower among women with disabilities than among women without disabilities. Women with disabilities were more likely than others to smoke, be obese (i.e., have a body mass index of 30 or greater), and report fair or poor health, which may make them less appropriate candidates for the most commonly used hormonal methods, such as the pill.

The vast majority of women at risk of unintended pregnancy who were using moderately effective methods, whether they had a disability or not, identified the pill as their main method, a finding consistent with those of prior national studies.[15] Because pills with progestin and estrogen are more effective than progestin-only pills, they are more often prescribed and used in the United States.[26] However, the use of estrogen-containing oral contraceptives may be relatively or absolutely contraindicated among women with certain medical conditions, such as complicated diabetes, because of a potential increased risk of thrombotic complications (e.g., a blood clot in a leg or lung).[27] The fact that women with disabilities were more likely to smoke, be obese and report fair or poor health, characteristics associated with higher rates of thrombosis and related medical complications,[28,29] is one possible reason that they used moderately effective methods less frequently than women without disabilities.

TABLE 1. Percentage distribution of U.S. women aged 15–44, by selected characteristics, according to disability status; and prevalence ratios (and 95% confidence intervals) from binomial regression analysis assessing associations between having a disability and these characteristics—National Survey of Family Growth, 2011–2013

Characteristic	Physical or sensory disability (N=545)	No physical or sensory disability (N=5,053)	Prevalence ratio
Age			
15–24 (ref)	30.3	36.3	1.00
25–34	31.2	37.1	1.01 (0.82–1.24)
35–44	38.5	26.6	1.63 (1.35–1.98)*
Race/ethnicity			
Non-Hispanic white (ref)	36.9	45.3	1.00
Hispanic	28.4	25.8	1.32 (1.08–1.61)*
Non-Hispanic black	25.9	20.4	1.49 (1.22–1.83)*
Other	8.8	8.5	1.24 (0.92–1.68)
Education			
≥college (ref)	9.8	22.0	1.00
Some college	25.7	30.4	1.83 (1.35–2.49)*
High school/GED	32.8	25.9	2.64 (1.96–3.55)*
Some high school	31.7	21.7	2.99 (2.22–4.03)*
Income as % of federal poverty level			
≥250% (ref)	21.3	34.1	1.00
100–249%	27.7	32.7	1.33 (1.05–1.68)*
<100%	51.0	33.2	2.26 (1.84–2.78)*
Current medical insurance			
Private/Medigap (ref)	28.4	50.7	1.00
Medicaid/CHIP/state	37.6	22.1	2.71 (2.23–3.31)*
Medicare	9.4	5.7	2.62 (1.95–3.52)*
Underinsured/uninsured	24.6	21.5	1.93 (1.54–2.40)*
Marital status			
Single (ref)	58.9	55.5	1.00
Cohabiting†	18.3	13.1	1.28 (1.04–1.57)*
Married	22.8	31.4	0.71 (0.58–0.86)*
Self-reported general health			
Excellent/very good (ref)	44.4	68.4	1.00
Good	27.6	25.1	1.62 (1.33–1.97)*
Fair/poor	28.0	6.5	4.87 (4.07–5.82)*
Body mass index			
<25 (ref)	25.7	38.1	1.00
25–29	21.8	27.3	1.17 (0.90–1.52)
30–39	38.3	28.8	1.84 (1.46–2.31)*
≥40	14.2	5.8	3.06 (2.30–4.07)*
Smoked ≥1 cigarette/day in last 12 months			
No (ref)	62.7	79.0	1.00
Yes	37.3	21.0	2.04 (1.73–2.40)*
Received birth control counseling in last 12 months			
Yes (ref)	15.3	19.5	1.00
No	84.7	80.5	1.31 (1.05–1.64)*
Doctor ever advised never to get pregnant‡			
No (ref)	89.0	97.4	1.00
Yes	11.0	2.6	3.62 (2.78–4.72)*
Wants baby sometime in the future			
No (ref)	39.3	34.6	1.00
Yes	60.7	65.4	0.84 (0.71–0.98)*
Parity			
0 (ref)	36.0	44.8	1.00
≥1	64.0	55.2	1.39 (1.18–1.65)*
Total	100.0	100.0	

*p<.05. †Women who responded that they were "living with a male partner, not married." ‡Excludes women who were sterile; Ns were 409 for women with disabilities and 4,347 for women without disabilities. *Notes:* The number of missing cases was small except for body mass index; Ns for that measure were 431 for women with disabilities and 3,842 for women without disabilities. ref=reference category. CHIP=Children's Health Insurance Program.

TABLE 2. Percentage distribution of women at risk for unplanned pregnancy, by type of contraceptive method currently used, according to disability status

Type of method	Physical or sensory disability (N=180)	No physical or sensory disability (N=2,123)
Highly effective	13.3	18.8
Moderately effective**	25.6	37.9
Less effective	34.4	28.0
No method***	26.7	15.3
Total	100.0	100.0

**p<.01. ***p<.001. *Notes:* Highly effective methods are IUDs and implants; moderately effective methods are the pill, patch, ring and injectable; less effective methods are all others. Women who did not include information on body mass index or smoking are excluded.

Women with disabilities were more likely than others to report characteristics that may make them ideal candidates for highly effective methods (e.g., not wanting future children, having been advised never to get pregnant, being in fair or poor health). Yet they had lower odds than women without disabilities of using these highly effective methods, even after adjustment for age and parity. These results raise questions that deserve further exploration: For women with disabilities who want to delay pregnancy over a long period of time, what information, if any, is given regarding the advantages and disadvantages associated with highly effective methods? For women who cannot have or do not want any future pregnancies, are providers discussing how the risks and benefits associated with these methods compare with those of female sterilization? What provider and patient knowledge and attitudes underlie these discussions?

The fact that moderately effective methods require a provider prescription or provider administration, and highly effective ones require a procedural visit, may partially explain why these methods are used less by women with disabilities than by other women, and less effective methods (the majority of which are available without a prescription) are not. For women with disabilities, face-to-face clinical visits are still associated with barriers related to physical accommodations to assist with navigation.[13] For example, in several studies, most medical facilities were "externally" accessible with ramps for wheelchair users, yet "internal" accessibility to specialized equipment, such as appropriate weight scales, lagged behind.[30–32] To safely obtain a LARC method, particularly an IUD, which requires a pelvic examination, women who use wheelchairs need adjustable tables and assistance from staff members trained in proper transfer and patient positioning.[33–35] If women do not receive the assistance and accommodations necessary, it is unlikely that they will request LARC devices. Similarly, providers will be unlikely to discuss or offer highly effective methods if they perceive that the necessary procedures will be complicated because of transfer and positioning difficulties.

In the bivariate analysis, the prevalence of contraceptive nonuse was significantly elevated among women with disabilities. These women were older than oth-

ers and were more likely to belong to racial and ethnic minority groups, to have less than a college education and to lack private insurance, characteristics associated with elevated odds of contraceptive nonuse.[24,25] After adjustment for these characteristics, the odds of nonuse no longer varied by disability. Strategies to improve reproductive health among women with disabilities must therefore address multiple disparities that transcend the presence of disability alone.

Consistent with prior research,[36] our analyses showed that disabled women are more likely than others to be members of disadvantaged populations, including uninsured individuals and Medicaid recipients. Therefore, the contraceptive provision of the 2012 U.S. Patient Care and Affordable Care Act, which eliminates the burden of patient cost-sharing for federally approved contraceptive methods and devices,[37] has the potential to improve birth control access for women with disabilities. Researchers have reported that after the act went into effect, out-of-pocket spending for oral contraceptives among privately insured women, but not Medicaid recipients, decreased, possibly because of inconsistent implementation of the contraceptive provision by different state Medicaid agencies.[38] Future research should assess the impact of state variations in Medicaid expansion and implementation on contraceptive access among women with disabilities, particularly for highly effective methods, which incur the highest out-of-pocket costs.

Limitations

Our study had several limitations. First, disability measures were not stratified by level of severity. Women with complete hearing or visual loss were unlikely to be included because part of the survey required listening to survey questions through headphones and typing on a laptop. To maintain confidentiality, only the participant and interviewer were allowed in the room during the survey; assistance from others, such as sign language interpreters, was thus precluded.[39] Second, we were unable to examine contraceptive categories across disability types in our multinomial regression model because of small cell counts. However, a bivariate analysis did not detect any variations in contraceptive use according to the presence of hearing loss only, visual loss only or physical disability only. Third, we could not adjust for a wide variety of medical conditions or current medications that may have affected contraceptive decision making and use. If women with disabilities had a higher prevalence of conditions that preclude the use of estrogen and that were not fully accounted for in the regression model, the adjusted odds of moderately effective method use may have been underestimated.

Conclusion

This study contributes new knowledge regarding the need for contraceptive services among U.S. women with physical or sensory disabilities. Even after adjustment for socioeconomic disadvantage, women with disabilities had reduced

TABLE 3. Odds ratios (and 95% confidence intervals) from multinomial regression analyses assessing associations between selected characteristics and women's use of no, moderately effective or highly effective reversible contraceptive methods, rather than less effective ones

Characteristic	No method	Moderately effective	Highly effective
Has physical or sensory disability			
No (ref)	1.00	1.00	1.00
Yes	1.22 (0.80–1.87)	0.64 (0.42–0.98)**	0.55 (0.33–0.92)**
Age			
15–24	1.00	1.00	1.00
25–34	1.07 (0.76–1.51)	0.86 (0.66–1.13)	0.78 (0.56–1.08)
35–44	1.44 (0.96–2.15)	0.66 (0.47–0.93)**	0.46 (0.30–0.70)***
Race/ethnicity			
White (ref)	1.00	1.00	1.00
Black	0.93 (0.56–1.15)	0.51 (0.38–0.70)***	0.50 (0.34–0.74)***
Hispanic	0.80 (0.56–1.15)	0.58 (0.43–0.78)***	0.92 (0.66–1.28)
Other	1.09 (0.67–1.76)	0.76 (0.52–1.13)	0.50 (0.29–0.86)**
Education			
≥college (ref)	1.00	1.00	1.00
Some college	1.55 (1.06–2.27)**	1.10 (0.83–1.48)	0.95 (0.66–1.28)
High school/GED	1.37 (0.88–2.12)	0.90 (0.63–1.27)	0.82 (0.54–1.24)
Some high school	2.08 (1.21–3.54)***	1.21 (0.75–1.94)	0.85 (0.50–1.44)
Income as % of poverty level			
≥250% (ref)	1.00	1.00	1.00
100–249%	1.10 (0.77–1.56)	1.15 (0.87–1.51)	1.28 (0.91–1.80)
<100%	1.17 (0.78–1.76)	1.08 (0.77–1.52)	1.47 (0.99–2.19)
Current medical insurance			
Private/Medigap (ref)	1.00	1.00	1.00
Medicaid/CHIP/state	1.56 (1.02–2.38)**	1.13 (0.79–1.63)	0.86 (0.57–1.30)
Medicare	0.94 (0.49–1.81)	1.23 (0.77–1.98)	1.22 (0.70–2.12)
Underinsured/uninsured	1.06 (0.75–1.50)	0.47 (0.35–0.64)***	0.64 (0.45–0.91)**
Marital status			
Married (ref)	1.00	1.00	1.00
Cohabiting	1.04 (0.67–1.59)	1.66 (1.19–2.32)***	1.52 (1.04–2.23)**
Single	1.66 (1.19–2.31)***	1.78 (1.35–2.35)***	1.35 (0.98–1.87)
Self-reported general health			
Excellent/very good (ref)	1.00	1.00	1.00
Good	0.93 (0.68–1.26)	0.76 (0.59–0.99)**	0.74 (0.55–1.01)
Fair/poor	0.73 (0.44–1.22)	0.75 (0.48–1.17)	0.66 (0.39–1.12)
Smoked ≥1 cigarette/day in last 12 months			
No (ref)	1.00	1.00	1.00
Yes	1.05 (0.77–1.45)	0.73 (0.56–0.97)**	1.05 (0.77–1.45)
Body mass index			
< 25 (ref)	1.00	1.00	1.00
25–29	1.03 (0.74–1.44)	1.14 (0.88–1.48)	1.08 (0.79–1.48)
30–39	1.30 (0.93–1.82)	1.10 (0.83–1.47)	1.40 (1.01–1.94)**
≥40	0.83 (0.44–1.58)	0.92 (0.54–1.57)	1.45 (0.80–2.61)
Received birth control counseling in last 12 months			
Yes	1.00	1.00	1.00
No	1.05 (0.76–1.46)	0.43 (0.34–0.55)***	0.68 (0.51–0.92)**
Doctor ever advised to never get pregnant			
No	1.00	1.00	1.00
Yes	1.43 (0.74–2.77)	0.70 (0.35–1.43)	0.97 (0.46–2.00)
Parity			
0	1.00	1.00	1.00
≥1	1.24 (0.90–1.71)	1.37 (1.06–1.78)**	0.24 (0.16–0.34)***

**p<.01. ***p<.001. *Notes:* Highly effective methods are IUDs and implants; moderately effective methods are the pill, patch, ring and injectable; less effective methods are all others. Women who did not include information on body mass index or smoking are excluded. CHIP=Children's Health Insurance Program. ref=reference group.

odds of using moderately effective and highly effective methods. Future research, including qualitative studies, should explore factors that contribute to these disparities. Studies that describe and probe reasons underlying contraceptive behavior across subgroups with different disability types and severity of disability are necessary.

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