

Age Differences in the Prevalence and Correlates of Inconsistent Contraceptive Use and Non-Use: Findings from the 2006-2010 National Survey of Family Growth

Karen Pazol; Maura K. Whiteman; Suzanne G. Folger; Athena P. Kourtis; Polly A. Marchbanks; Denise J. Jamieson¹

¹Centers for Disease Control and Prevention, Division of Reproductive Health

Background: In the United States 49% of all pregnancies each year are unintended.¹ Unintended pregnancy rates are highest among women aged 18-24 years,² and public concern has focused on unintended pregnancies among teens.²⁻⁴ However, among women in older age groups, the proportion of pregnancies that are unintended, as well as the ratio of pregnancies that end in abortion versus live birth, remains high.^{2,5} Similarly, while the consequences of unintended pregnancy for teens have received substantial public attention, the likelihood of negative health outcomes also is elevated for older women and their children.⁶⁻⁹ Preventing unintended pregnancy should be a public health priority for women of all ages.

Unintended pregnancy is preventable with correct and consistent contraceptive use: only 5% of unintended pregnancies are due to contraceptive failure, with the remaining 95% attributable to inconsistent contraceptive use or contraception non-use.^{10,11} Women at risk for unintended pregnancy who fail to consistently use contraception provide many reasons, including the inability to obtain contraception, concern about side effects or long-term health problems, difficulty using a method, lack of partner support, infrequent /unanticipated intercourse, the perception that they cannot get pregnant, and ambivalence or lack of concern about becoming pregnant.¹¹⁻¹⁶ Because many of these factors may vary over the course of a woman's reproductive years, it is important to understand how the prevalence and reasons for inconsistent contraceptive use and non-use vary by age.

Objectives: This analysis seeks to determine: 1) the age-group specific percentage of women at risk for unintended pregnancy who are inconsistent contraceptive users or non-users; 2) the age-specific predictors of inconsistent contraceptive use and non-use among women at risk for unintended pregnancy.

Methods: We used data from the 2006-2010 National Survey of Family Growth (NSFG). We considered women at risk for unintended pregnancy if they had intercourse during any of the 12 months leading up to their interview, and, during at least one sexually active month, they were not: pregnant, seeking pregnancy, or sterile by means other than a sterilizing operation (tubal sterilization or hysterectomy), and did not have a partner who was sterile by means other than a vasectomy. We defined *non-users* as women who did not use contraception during any month they were at risk. *Inconsistent users* did not use a contraceptive method during one or more at-risk months, or did not use a method the last time they had intercourse. *Consistent users* were women who used a method during every at-risk month as well as the last time they had intercourse. We used sample weights from the NSFG to estimate age-group specific prevalence of inconsistent contraceptive use and non-use. In addition, we considered variables related to method dissatisfaction (proportion of methods ever used that were discontinued due to dissatisfaction), access to contraception (health insurance coverage and receipt of birth control services over the past 12 months), relationship status (married, cohabiting or single) and frequency of intercourse (number of months of non-intercourse), intentions for future childbearing, perceived difficulty achieving pregnancy, and demographics (household income, highest education level completed, and race/ethnicity). Chi-squared tests were used to determine if the pattern of contraceptive use differed by each variable of interest. In addition, we constructed multivariable polytomous logistic regression models to assess the odds of contraceptive non-use and inconsistent use vs. consistent use. In our initial model, we entered all of our variables of interest along with their two-way interaction with age. We then used a backwards elimination procedure to delete interaction terms sequentially, until only significant ($p < 0.05$) interaction terms were retained. All covariates were retained based on previous association reported in the literature and their univariable association. Finally, age-stratified models were constructed to evaluate the effect of variables that interacted significantly with age. The above series of models were constructed for all women at risk for unintended pregnancy, and, to evaluate the effect of method dissatisfaction, for the subset of women at risk who had ever used a contraceptive method.

Results: Of the 12,279 women who participated in the 2006-2010 NSFG, 2,806 were excluded from this analysis because they did not have intercourse in the 12 months leading up to their interview, or they only had intercourse during months when they were pregnant or trying to get pregnant, or they or their partner were sterile by means other than a sterilizing operation. An additional 89 women were excluded because of missing calendar data on contraceptive use or sexual activity, resulting in a final sample of 9,384 women. Overall 10.3% of women were contraceptive non-users, 12.9% were inconsistent user, and 76.8% were consistent users. Of the 1,322 inconsistent users, 238 (18%) used contraception at some point of every at-risk month, but not at their last intercourse. Characteristics of women included in the sample are presented in **Table 1**.

The distribution of women by consistency of contraceptive use differed significantly by age group and other variables of interest (**Table 2**). The percentage of women who were contraceptive non-users was lowest for teens aged 15-19 years (4.6%) and then women aged 20-24 years (8.9%), while rising to approximately 11% among women in older age groups. By contrast, inconsistent contraceptive use was lowest for women aged 40-44 years (7%) and then women aged 35-39 years (8.6%), while rising to 15-16% among women in younger age groups.

Multivariable polytomous logistic regression models indicated that the effect of health insurance over the past 12 months ($p < 0.0001$), marital status ($p = 0.01$), periods of non-intercourse ($p = 0.006$), intentions to have (more) children ($p < 0.0001$), and perceived difficulty in achieving pregnancy ($p = 0.005$) had different effects on inconsistent contraceptive use and non-use for women of different age groups.¹ Models specific to teens indicated that having no health insurance over the past 12 months vs. private insurance, and having public vs. private insurance increased the odds of inconsistent vs. consistent contraceptive use (**Table 3**) and had an even greater effect on the odds of contraceptive non-use vs. consistent use (**Table 4**). Models specific to women aged 20-24 years also indicated that health insurance influenced the odds of inconsistent contraceptive use and non-use, but in addition among this age group,

¹ Original age categories were collapsed for modeling due to similarities in the prevalence of inconsistent method use and non-use among women aged 20-24 and 25-29 years, and among women aged 35-39 and 40-44 years.

plans for having (more) children increased the odds of contraceptive non-use, and perceived difficulty achieving pregnancy increased the odds of inconsistent use and non-use. Among women aged 25-34 years, health insurance had no influence on the odds of inconsistent contraceptive use or non-use. However, women who were single and cohabiting vs. married had *reduced* odds of inconsistent contraceptive use, and single vs. married women also had reduced odds of contraceptive non-use. By contrast, intentions to have (more) children and perceived difficulty in achieving pregnancy increased the odds of inconsistent contraceptive use and non-use. Among women aged 35-44 years, health insurance, relationship status, and periods of non-intercourse had only modest or no effect on the odds of inconsistent contraceptive use or nonuse. By contrast, intentions to have (more) children and perceived difficulty achieving pregnancy increased the odds of inconsistent contraceptive use, and these variables had an even greater impact on contraceptive non-use.

In models including the subset of women at risk for unintended pregnancy who ever used a contraceptive method, history of method discontinuation due to dissatisfaction had little association with the consistency of contraceptive use among most age groups (data not shown). However, among teens, method discontinuation due to dissatisfaction increased the odds of method non-use (>0 to 50% vs. no discontinuation due to dissatisfaction: aOR=3.8; 95% CI, 1.0-13.9; \geq 50% vs. no discontinuation due to dissatisfaction: aOR=4.2; 95% CI, 1.4-12.6).

Conclusions: Inconsistent contraceptive use and non-use is common among women of all ages. While the prevalence of contraceptive non-use was highest among women in older age groups, the prevalence of inconsistent method use was highest among women in younger age groups. Health insurance and discontinuation of methods due to dissatisfaction had a greater influence on inconsistent contraceptive use and non-use among younger women, whereas intentions to have (more) children and perceived difficulty achieving pregnancy became more important for women in older age groups. Interventions to reduce unintended pregnancy should account for different influences on contraceptive use across age groups.

Table 1: Characteristics of women at risk for unintended pregnancy,¹ 2006-2010 National Survey of Family Growth

Characteristic	Total Unweighted N = 9,384	
	Unweighted N ²	Weighted % (95% CI)
Age (yrs)		
15-19	962	8.5 (7.8, 9.19)
20-24	1,710	17.2 (15.8, 18.6)
25-29	2,062	19.3 (18.1, 20.7)
30-34	1,773	17.0 (15.8, 18.4)
35-39	1,523	19.3 (18.0, 20.6)
40-44	1,354	18.7 (17.4, 20.2)
Method discontinuation due to dissatisfaction		
Never used a method	64	0.6 (0.4, 0.8)
Never discontinued method due to dissatisfaction	4,759	51.2 (49.4, 53.1)
Discontinued > 0 to 50% of methods used	3,194	33.9 (32.4, 35.5)
Discontinued ≥ 50% of methods used	1,340	14.3 (13.1, 15.5)
Health insurance coverage over the past 12 months		
Private	5,137	61.6 (58.6, 64.5)
Public	2,187	17.6 (15.9, 19.5)
None	2,060	20.8 (18.7, 23.0)
Received birth control services in the past 12 months³		
Yes	4,365	44.2 (42.4, 46.0)
No	5,017	55.8 (54.0, 57.6)
Relationship status		
Married	3,801	51.1 (48.9, 53.3)
Cohabiting	1,389	13.8 (12.6, 15.1)
Single	4,194	35.1 (33.2, 37.0)
Months without intercourse over the past 12 months		
0 months	5,101	59.9 (58.1, 61.6)
1-4 months	2,103	20.3 (19.0, 21.6)
≥5 months	2,180	19.9 (18.7, 21.1)
Intentions to have (more) children		
Intends to have (more) children	4,398	43.4 (41.5, 45.3)
Doesn't intend/uncertain about having (more) children	4,986	56.6 (54.7, 58.5)
Not surgically sterile, but reports it would be difficult/ impossible to get pregnant		
Yes	603	6.5 (5.9, 7.3)
No	8,781	93.5 (92.7, 94.1)
Household income		
<100% FPL	2,504	20.9 (19.2, 22.7)
100 to 400% FPL	5,292	59.6 (58.0, 61.1)
≥ 400% FPL	1,588	19.6 (18.0, 21.3)
Highest level of education completed⁴		
≤ 12 th grade	1,609	14.1 (12.6, 15.7)
High school or equivalent	2,629	27.2 (25.6, 28.8)
Some college or higher	5,145	58.8 (56.3, 61.3)
Race/Ethnicity		
Non-Hispanic White	2,085	17.1 (14.0, 20.8)
Non-Hispanic Black	4,706	61.2 (57.5, 64.8)
Hispanic	1,887	13.6 (11.6, 15.9)
Other or Multiple Race	706	8.0 (6.4, 10.0)

¹Includes women who had sexual intercourse in the past year during at least one month in which they were not pregnant, trying to get pregnant, sterile, or had a partner who was sterile.

²Due to missing values, totals by characteristic may differ.

³Received counseling or information about birth control, a medical check-up related to using birth control, or a birth control method or a prescription for a birth control method from a healthcare provider.

⁴Because women <20 years have not had the opportunity to complete their education, the highest level of education obtained by a woman's mother or mother figures has been used for women aged 15-19 years.

Table 2 Percentage of women at risk for unintended pregnancy¹ by consistency of contraceptive use, 2006-2010 National Survey of Family Growth

Characteristic	Non-Users		Inconsistent User		Consistent Users	
	N Unweighted	% (95% CI) Weighted	N Unweighted	% (95% CI) Weighted	N Unweighted	% (95% CI) Weighted
Age (yrs)*						
15-19	48	4.6 (3.3, 6.4)	167	15.8 (12.7, 19.5)	747	79.6 (75.6, 83.4)
20-24	151	8.9 (7.0, 11.4)	320	16.3 (13.5, 19.6)	1,239	74.7 (71.1, 78.1)
25-29	222	11.0 (9.2, 13.2)	329	16.0 (13.7, 18.6)	1,511	73.0 (70.0, 75.8)
30-34	224	11.7 (9.4, 14.4)	241	15.2 (12.9, 17.9)	1,308	73.1 (69.6, 76.4)
35-39	197	11.1 (9.0, 13.6)	153	8.6 (6.8, 10.9)	1,173	80.3 (77.1, 83.1)
40-44	173	11.3 (9.0, 14.0)	112	7.4 (5.5, 10.0)	1,069	81.3 (77.8, 84.4)
Method discontinuation attributed to dissatisfaction*						
Never used a method	64	100 (N/A)**	N/A	N/A	N/A	N/A
Never discontinued method	504	10.2 (9.0,11.7)	647	12.3 (10.8,13.8)	3,608	77.5 (75.5, 79.4)
Discontinued < 50% of methods used	284	8.6 (7.1,10.5)	484	13.6 (11.8,15.5)	2,426	77.8 (75.2, 80.1)
Discontinued ≥ 50% of methods used	159	10.4 (8.3,12.8)	190	14.2 (11.6,17.3)	991	75.5 (71.7,78.8)
Health insurance coverage over the past 12 months*						
Private	453	8.4 (7.24, 9.7)	594	11.0 (9.9, 12.2)	4,090	80.6 (79.0, 82.2)
Public	303	13.8 (11.4, 16.6)	431	18.4 (16.0, 21.0)	1,453	67.9 (64.5, 71.1)
None	259	13.1 (10.4, 16.3)	297	13.7 (11.9, 15.9)	1,504	73.2 (69.7, 76.5)
Received birth control services in the past 12 months ^{2,*}						
Yes	164	3.5 (2.71, 4.5)	731	15.2 (13.7, 16.7)	3,470	81.4 (79.6, 83.1)
No	851	15.7 (14.2, 17.3)	590	11.1 (9.5, 12.8)	3,576	73.3 (71.1, 75.3)
Relationship status						
Married	515	11.4 (9.9, 13.1)	495	12.7 (11.1, 14.3)	2,791	75.9 (73.9, 77.9)
Cohabiting	164	13.2 (10.7, 16.1)	219	13.9 (11.3, 17.0)	1,006	73.0 (69.6, 76.2)
Single	336	7.5 (6.2, 9.1)	608	12.8 (11.2, 14.6)	3,250	79.7 (77.3, 82.0)
Months without intercourse over the past 12 months						
0 months	581	10.3 (9.1, 11.7)	679	12.3 (11.1, 13.7)	3,841	77.4 (75.7, 78.9)
1-4 months	226	10.6 (8.7, 12.9)	395	17.9 (15.3, 20.9)	1,482	71.5 (68.1, 74.7)
≥5 months	208	9.9 (8.0, 12.3)	248	9.4 (7.7, 11.4)	1,724	80.6 (77.7, 83.3)
Intentions to have (more) children						
Intends to have (more) children	517	12.5 (11.0, 14.0)	733	16.0 (14.3, 17.8)	3,148	71.6 (69.2, 73.9)
Doesn't intend/uncertain about having (more) children	498	8.6 (7.3, 10.1)	589	10.5 (9.1, 12.1)	3,899	80.7 (78.7, 82.8)
Not surgically sterile, but reports it would be difficult/ impossible to get pregnant						
Yes	226	36.2 (30.9, 41.9)	119	19.8 (15.2, 25.4)	258	44.0 (38.3, 49.9)
No	789	8.5 (7.5, 9.5)	1,203	12.4 (11.3, 13.6)	6,789	79.1 (77.6, 80.6)

Household income						
<100% FPL	340	12.4 (10.5, 14.5)	435	17.4 (15.1, 19.9)	1,729	70.3 (67.4, 73.1)
100 to 400% FPL	501	9.4 (8.1, 10.75)	701	11.4 (10.2, 12.8)	4,090	79.3 (77.5, 80.9)
≥ 400% FPL	174	10.9 (8.7, 13.6)	186	12.6 (10.5, 15.0)	1,228	76.5 (72.7, 79.9)
Highest level of education completed ³						
≤ 12 th grade	231	14.2 (11.7, 17.3)	296	18.4 (14.9, 22.5)	1,082	67.4 (63.1, 71.3)
High school or equivalent	327	11.5 (9.8, 13.8)	409	14.4 (12.5, 16.6)	1,893	73.9 (71.3, 76.4)
Some college or higher	457	8.7 (7.4, 10.2)	617	10.8 (9.6, 12.2)	4,071	80.5 (78.4, 82.4)
Race/Ethnicity						
Non-Hispanic White	411	8.4 (7.2, 9.7)	543	10.9 (9.5, 12.4)	3,752	80.8 (79.1, 82.3)
Non-Hispanic Black	275	16.3 (13.3, 19.8)	314	15.1 (13.3, 17.1)	1,298	68.6 (65.0, 71.9)
Hispanic	236	10.8 (9.1, 12.8)	359	17.7 (15.1, 20.6)	1,490	71.5 (68.3, 74.6)
Other or Multiple Race	93	13.7 (9.7, 18.8)	106	14.1 (10.5, 18.8)	507	72.2 (64.5, 78.8)

¹Includes women who had sexual intercourse in the past year during at least one month in which they were not pregnant, trying to get pregnant, sterile, or had a partner who was sterile.

²Includes receiving: a checkup or medical test for birth control; counseling or information about birth control; or a prescription for birth control or a contraceptive method.

³Because women <20 years have not had the opportunity to complete their education, the highest level of education obtained a woman's mother or mother figures has been used for women aged 15-19 years.

*Indicates $p < 0.01$.

** Not applicable.

Table 3: Multivariable odds of inconsistent method use¹ among women at risk for unintended pregnancy,² stratified by age for variables having a significant interaction with age

Characteristic	15-19 years		20-24 years		25-34 years		35-44 years	
	aOR ³	95% CI	aOR	95% CI	aOR	95% CI	aOR	95% CI
Health insurance coverage over the past 12 months								
Private	REF	---	REF	---	REF	---	REF	---
Public	1.71	1.02-2.88	1.80	1.14-2.86	1.26	0.86-1.85	1.57	0.80-2.94
None	2.45	1.22-4.92	1.36	0.86-2.14	0.71	0.48-1.04	1.10	0.64-1.88
Relationship status								
Married	REF	---	REF	---	REF	---	REF	---
Cohabiting	1.40	0.38-5.07	0.75	0.45-1.24	0.51	0.32-0.81	0.57	0.30-1.07
Single	0.75	0.21-2.69	0.56	0.30-1.02	0.55	0.40-0.77	1.06	0.69-1.64
Months without intercourse over the past 12 months								
0 months	REF	---	REF	---	REF	---	REF	---
1-4 months	1.11	0.61-2.03	1.10	0.69-1.77	1.84	1.30-2.60	1.55	0.95-2.53
≥5 months	0.59	0.32-1.09	0.64	0.38-1.08	0.57	0.39-0.84	1.08	0.65-1.81
Plans for (more) children								
Intends to have (more) children	1.10	0.50-2.43	0.98	0.68-1.40	1.68	1.23-2.29	2.75	1.16-4.70
Doesn't intend/uncertain about having (more) children	REF	---	REF	---	REF	---	REF	---
Not surgically sterile, but reports it would be difficult/ impossible to get pregnant								
Yes	2.51	0.86-7.31	2.19	1.11-4.32	3.76	2.29-6.20	3.36	1.71-6.62
No	REF	---	REF	---	REF	---	REF	---

¹Significant findings are in bold.

²Includes women who had sexual intercourse in the past year during at least one month in which they were not pregnant, trying to get pregnant, sterile, or had a partner who was sterile.

³ Model adjusted variables included in the table, and for having received birth control services in the past 12 months, household income, household income, education, and race/ethnicity.

Table 4: Multivariable odds of method non-use¹ among women at risk for unintended pregnancy², stratified by age for variables having a significant interaction with age

Characteristics	15-19 years		20-24 years		25-34 years		35-44 years	
	aOR ³	95% CI	aOR	95% CI	aOR	95% CI	aOR	95% CI
Health insurance coverage over the past 12 months								
Private	REF	---	REF	---	REF	---	REF	---
Public	5.00	1.50-16.4	5.11	2.26-11.5	1.20	0.73-1.98	2.57	1.35-4.88
None	3.93	1.16-13.2	2.10	1.01-4.37	1.17	0.81-1.69	1.47	0.82-2.64
Relationship status								
Married	REF	---	REF	---	REF	---	REF	---
Cohabiting	3.19	0.58-17.6	0.58	0.26-1.28	1.11	0.72-1.72	0.64	0.32-1.29
Single	0.72	0.14-3.74	0.18	0.30-1.02	0.38	0.23-0.63	0.76	0.30-1.07
Months without intercourse over the past 12 months								
0 months	REF	---	REF	---	REF	---	REF	---
1-4 months	0.20	0.06-0.71	1.26	0.66-2.41	1.84	1.20-2.82	1.35	0.82-2.22
≥5 months	0.94	0.39-2.27	1.67	0.79-3.54	1.44	0.88-2.33	1.11	0.65-1.91
Plans for (more) children								
Intends to have (more) children	0.57	0.21-1.54	2.02	1.16-3.66	2.8	1.90-4.13	7.64	5.02-11.6
Doesn't intend/uncertain about having (more) children	REF	---	REF	---	REF	---	REF	---
Not surgically sterile, but reports it would be difficult/ impossible to get pregnant								
Yes	1.22	0.34-4.44	4.31	2.16-8.60	8.40	5.26-13.4	13.7	7.82-23.9
No	REF	---	REF	---	REF	---	REF	---

¹Significant findings are in bold.

²Includes women who had sexual intercourse in the past year during at least one month in which they were not pregnant, trying to get pregnant, sterile, or had a partner who was sterile.

³ Model adjusted variables included in the table, and for having received birth control services in the past 12 months, household income, household income, education, and race/ethnicity.

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