

# Pregnancy Ambivalence and Contraceptive Use Among Young Adults in the United States

By Jenny A. Higgins, Ronna A. Popkin and John S. Santelli

Jenny A. Higgins is assistant professor, Department of Gender and Women's Studies, University of Wisconsin–Madison. Ronna A. Popkin is a doctoral student, Department of Sociomedical Sciences, and John S. Santelli is clinical professor, Department of Population and Family Health, both at the Mailman School of Public Health, Columbia University, New York.

**CONTEXT:** Pregnancy ambivalence, or conflicted desire about having a baby, has been associated with decreased contraceptive use and unintended pregnancy. However, prior studies have neither included men nor focused on young adults, even though people in their 20s have the highest rates of unintended pregnancy.

**METHODS:** Nationally representative data from 2008–2009 were used to examine pregnancy ambivalence and its association with contraceptive practices among 774 respondents who were 18–29 years old and in current sexual relationships. Bivariate and multivariate analyses assessed relationships between pregnancy ambivalence, contraceptive use, gender and other social, demographic and psychosocial variables.

**RESULTS:** Forty-five percent of respondents exhibited pregnancy ambivalence. The proportion was higher among men than among women (53% vs. 36%), and the difference remained significant in the multivariate analysis (odds ratio, 2.9). Ambivalence was associated with lowered likelihood of contraceptive use, but this relationship was statistically significant only for men: Compared with men with clear intentions to avoid pregnancy, ambivalent men were less likely to have used any method of contraception in the last month (0.4).

**CONCLUSIONS:** The association between men's pregnancy ambivalence and contraceptive practices suggests that women should not remain the sole targets of pregnancy prevention programs. Further research should explore whether clinical interventions that assess and address pregnancy ambivalence for both women and men could lead to improved contraceptive counseling and use.

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Unintended pregnancy remains a central concern of public health practitioners and policymakers. Much of the concern has focused on adolescents, although women and men of all reproductive ages are involved in unintended pregnancies.<sup>1,2</sup> In fact, young adults are especially burdened by this health outcome; research has shown that 18–29-year-olds have a higher rate of unintended pregnancy than any other age-group.<sup>1</sup> The majority of unintended pregnancies among adults of all ages are caused not by contraceptive failure, but by inconsistent use or nonuse of contraceptives.<sup>1</sup> Despite decades of research, public health practitioners are still stymied in their ability to understand and address the factors that undermine contraceptive use and lead to unintended pregnancy, especially among young adults.

Though the social and demographic correlates of unintended pregnancy are well established (e.g., living below the poverty line and being in one's 20s, unmarried or poorly educated<sup>1</sup>), the psychosocial correlates of reduced contraceptive use are much less understood. Pregnancy ambivalence, or unresolved or contradictory feelings about whether one wants to have a child at a particular moment, is one of the few psychosocial characteristics that have been identified as strong correlates of contraceptive practices.<sup>3,4</sup> In this article, we explore pregnancy ambivalence and contraceptive use among young adults.

## BACKGROUND

The concept of pregnancy ambivalence evolved largely from discontent with existing measures of pregnancy intention, which tend to frame reproductive desires in terms of clear-cut categories, rather than along a nuanced spectrum.<sup>5,6</sup> According to the conventional, retrospective measures of pregnancy intention, a pregnancy may be classified as indisputably wanted at the time it occurred (intended), experienced earlier than desired (mistimed) or not desired at all (unwanted).<sup>7</sup> In contrast, pregnancy ambivalence refers to reproductive desires that may be contradictory or not clearly established, thereby capturing a greater range of pregnancy-related attitudes and feelings.<sup>8</sup> Some research suggests that this conflicted, or unresolved, orientation toward pregnancy may have emotional and sexual benefits, particularly in the context of a relationship.<sup>9</sup> Imagining a pregnancy with a partner, even if a baby is not fully intended, may increase intimacy within the couple<sup>9</sup> or help a woman appraise her current partner or relationship.<sup>10</sup> Pregnancy ambivalence may also capture individuals with a passive orientation toward pregnancy—those who are “not not trying to get pregnant.”<sup>9</sup>

Another way in which the concept of pregnancy ambivalence may improve upon former pregnancy intention measures pertains to the timing of measurement. A significant proportion of research on the intendedness of conception

has been based on women's retrospective reports of completed or terminated pregnancies.<sup>6-8</sup> In the case of population-based surveys, such as the National Survey of Family Growth (NSFG), measurement may happen several years after pregnancies occur, raising concerns about recall bias.<sup>5</sup> The concept of pregnancy ambivalence builds from the notion that it is important to assess one's emotional orientation toward pregnancy before it occurs, given that this orientation is more likely to shape contraceptive practices than are feelings measured months or years after the fact.<sup>3,8,11</sup>

Indeed, several studies have shown associations between pregnancy ambivalence and contraceptive practices. Studies of adolescents demonstrate lower use of contraceptives among young women classified as ambivalent about pregnancy than among those with clear intentions.<sup>11,12</sup> In an analysis of nationally representative data of 18-44-year-old women collected in 2004, Frost et al. found strong associations between pregnancy ambivalence and both contraceptive nonuse and gaps in use in the last year.<sup>13</sup> In fact, in that study, pregnancy ambivalence was more strongly associated with contraceptive practices than was a fatalistic attitude about pregnancy, provider satisfaction, race and ethnicity, parity, marital status or poverty level.

Such research indicates that the concept of pregnancy ambivalence may be helpful in explaining why and how people use contraceptives. In the current study, we build on prior research by focusing on young adults in general and young men in particular. A number of approaches have been used to capture the complexity of pregnancy ambivalence; ours represents a combination of approaches.

### Measuring Pregnancy Ambivalence

A common tactic researchers have used to measure pregnancy ambivalence is to investigate inconsistencies between a woman's plans, or intentions, to avoid pregnancy and how she thinks she would feel if she found out she was pregnant—in other words, the difference between pregnancy intention and affect.<sup>6,10,14,15</sup> According to this approach, women are considered ambivalent about pregnancy if, for example, they report that avoiding pregnancy is important, but also that they would be happy if they found out they were pregnant.

Another approach to assessing pregnancy ambivalence—and the one adopted in 1995 for Cycle 5 of the NSFG—examines consistency of attitudes and feelings about a given construct. With this method, a woman is considered ambivalent if she gives conflicting responses to paired statements that are designed to measure the same feeling but are worded differently (e.g., "I would look forward to telling my friends about a baby" and "I would dread telling my friends about a baby").<sup>16</sup>

Identifying those who say they do not know, do not care or are indifferent to the idea of a pregnancy is another method researchers have used to evaluate pregnancy ambivalence.<sup>17</sup> For example, in a pilot study, Schwarz and

colleagues<sup>8</sup> asked women if they were currently trying to get pregnant, and offered three response categories: "yes," "no" and "don't know." Only 2% responded "don't know." A question later in the same survey offered an expanded list of options—"trying to get pregnant," "wouldn't mind getting pregnant," "don't know," "wouldn't mind avoiding pregnancy" and "trying to avoid a pregnancy"—and the investigators classified all three middle options as ambivalent. According to this measure, 22% of women were categorized as ambivalent about pregnancy. In a subsequent survey of women at two ambulatory clinics, 29% expressed pregnancy ambivalence as captured by the more expansive definition;<sup>8</sup> these women were significantly less likely to have used a hormonal contraceptive at last intercourse than were women who expressed certainty about trying to avoid a pregnancy.

### Remaining Gaps and Study Hypotheses

At least two key gaps remain in our understanding of pregnancy ambivalence. First, no study of the topic has been conducted specifically among young adults. Individuals in their 20s may be more likely than adolescents to be ambivalent about avoiding pregnancy, since many have completed secondary schooling, cohabit with a partner or have assessed the marriage-and-children potential of their relationships.

Second, very few studies have included men in assessments of pregnancy ambivalence and contraceptive use. Preliminary qualitative research suggests that men's ambivalence about pregnancy may be related to contraceptive use.<sup>9</sup> The only male-inclusive quantitative study we could locate involved a nationally representative sample of Irish men and women aged 18-45.<sup>17</sup> When selecting reasons for not having used contraceptives in the last year, 11% of women and 12% of men in that study cited "not caring if pregnancy occurred." Moreover, research suggests that men's contraceptive attitudes can be strongly associated with use patterns, although these attitudes have typically been measured by asking women about their male partners' attitudes, rather than by asking men themselves.<sup>18-20</sup> Extending our understanding of contraceptive use requires further inquiry into men's pregnancy ambivalence.

To address these gaps, we have analyzed nationally representative data of U.S. 18-29-year-olds in 2008-2009. These data facilitate a focus on the age-group most affected by unintended pregnancy in the United States,<sup>1</sup> and on pregnancy intentions, attitudes and feelings among both genders. Finally, the data include a number of other psychosocial variables, such as pregnancy fatalism<sup>21</sup> and infertility fears,<sup>22</sup> that may affect the relationship between pregnancy ambivalence and contraceptive use. We explore two research questions. First, among young adults in the United States, what are men's and women's levels of pregnancy ambivalence? Second, is ambivalence associated with contraceptive use, even when relevant social, demographic and psychosocial variables are controlled for?

## METHODS

### Overview

Our data derive from the National Survey of Reproductive and Contraceptive Knowledge, also known as the Fog Zone survey, which was commissioned by the National Campaign to Prevent Teen and Unplanned Pregnancy and conducted by researchers at the Guttmacher Institute from October 2008 to April 2009. The survey involved a sample of 1,800 unmarried 18–29-year-olds. Preliminary findings, as well as a more in-depth description of the study design and methods, were released in 2010.<sup>23</sup>

The sample was selected so that the weighted results are statistically representative of the overall population of unmarried 18–29-year-old adults, as well as of unmarried young adults of each gender and race or ethnicity. In all, 177 were reached through random-digit dialing of landline phone numbers, 903 through a sample of landline numbers with a high probability of containing unmarried residents in their 20s and 720 by cell phone. The sample was stratified by type of phone number (landline vs. cell phone) and race and ethnicity; black and Hispanic young adults were oversampled. The field-tested questionnaire, which was offered in both English and Spanish, was approved by the Guttmacher Institute's institutional review board.

The total sample consisted of 903 men and 897 women. We restricted our analytic sample to those in a current sexual relationship (420 men and 499 women). We did so for two reasons. First, pregnancy ambivalence may be more common in ongoing relationships than in brand-new relationships or one-night stands.<sup>9</sup> Second, the sexual relationship variable was the only way to identify those respondents who likely had been sexually active in the last month. We also excluded respondents who were pregnant, actively trying to get pregnant or get a partner pregnant, or using female or male sterilization. The final sample consisted of 774 respondents (355 men and 419 women).

### Measures

•**Pregnancy ambivalence.** Our measure of pregnancy ambivalence involved responses to two survey items, one assessing intention and one assessing affect. Pregnancy intention was captured by the following question: "Thinking about your life right now, how important is it to you to avoid becoming [or getting someone] pregnant?" Response categories were "very important," "somewhat important," "a little important" and "not important." In addition, interviewers noted if respondents volunteered "don't know" as an answer. Pregnancy affect was

captured by the following question: "If you found out today that you were [or your partner was] pregnant, how would you feel?" Responses categories were "very upset," "a little upset," "a little pleased" and "very pleased"; volunteered responses included "don't know" and "wouldn't care."

Respondents were coded as having clear intentions to avoid pregnancy (i.e., being unambivalent about wanting to prevent a pregnancy) if they indicated that it was very important for them to avoid pregnancy and that they would be very upset or a little upset by a pregnancy. Respondents were coded as having clear desire for a pregnancy (i.e., being unambivalent about wanting a pregnancy) if they indicated that it was not important for them to avoid pregnancy and that they would be very pleased or a little pleased about discovering a pregnancy. This group was dropped from the analysis, because we were interested in comparing the contraceptive practices of those unambivalent about avoiding pregnancy and those ambivalent about pregnancy.

All other respondents were coded as ambivalent. This group included respondents who provided inconsistent or conflicting responses to the two items (e.g., very important to avoid pregnancy yet very pleased if a pregnancy occurred), those who gave midscale responses for both items (e.g., somewhat important to avoid pregnancy and a little pleased if a pregnancy were discovered), and those who were indifferent (e.g., "don't know" or "wouldn't care" on either question). Logistic regressions confirmed that all three categories of ambivalent respondents were more alike than different in terms of contraceptive use; compared with those who were unambivalent about wanting to prevent a pregnancy, all ambivalent groups had lower odds of contraceptive use. Thus, we combined these groups into one category of ambivalence.

•**Contraceptive use.** Respondents were asked if they had used any method to prevent pregnancy in the past month. If they had, they were asked which of the following methods they had used: pills, male condoms, injectables, the patch, IUDs, implants, the vaginal ring, spermicides, natural family planning, withdrawal, sterilization, emergency contraception and other methods (diaphragm, sponge, female condoms and spermicides).<sup>\*</sup> We coded the contraception variable in two ways. First, we grouped respondents into categories of no use or any use of a method in the last month. Second, because respondents could report more than one method, we grouped method type into four categories: female-controlled methods, male-controlled methods (condoms and withdrawal), both female- and male-controlled methods, and none.<sup>†</sup>

•**Social and demographic.** We included age, race and ethnicity, and education as controls because each of these variables has been associated with both pregnancy ambivalence and contraceptive use.<sup>24–26</sup> Also included was cohabitation, which has been associated with contraceptive use<sup>27</sup> but has never been explored in relation to pregnancy ambivalence.

\*Recall that sterilized respondents were excluded from our analysis.

†All of the respondents who reported using natural family planning, emergency contraception or "other" methods (diaphragms, sponges, female condoms or spermicides) had also used a more effective female method in the last month. Only two men and 16 women reported withdrawal use, so the male-controlled method category is made up almost entirely of condom users.

•**Psychosocial.** Though few studies have explored the psychosocial covariates of ambivalence, the Fog Zone data set included a wide range of variables that allowed us to control for pregnancy- and fertility-related attitudes that we hypothesized could be confounders of the relationship between pregnancy ambivalence and contraceptive use. For example, we conjectured that both pregnancy ambivalence and contraceptive use might be associated with relationship and pregnancy expectations, as well as certain attitudes about pregnancy. Participants were asked how likely they were to have a baby with their current partner. Response categories were “not at all likely,” “slightly likely,” “quite likely” and “extremely likely.” Five respondents volunteered “don’t know” and were dropped from the analysis. Respondents were also asked to state their level of agreement with the statement “Every pregnancy is a blessing.” Response categories were “strongly agree,” “somewhat agree,” “somewhat disagree” and “strongly disagree.” Eight respondents volunteered “neither” or “don’t know” and were dropped from the analysis.

We also included two psychosocial variables that have been associated with lowered odds of contraceptive use but have been relatively unexplored in relation to pregnancy ambivalence: fatalism about pregnancy<sup>21</sup> and concerns about infertility.<sup>22</sup> To capture pregnancy fatalism, we explored participants’ responses to the following prompt: “It doesn’t matter whether you use birth control or not; when it is your time to get pregnant, it will happen.” Responses were “strongly agree,” “somewhat agree,” “somewhat disagree” and “strongly disagree.” Five respondents volunteered “neither” or “don’t know” and were dropped from the analysis. To assess infertility, participants were asked, “Some people are unable to become pregnant, even if they want to. How likely do you think it is that you are infertile or will have difficulty getting pregnant [or getting a woman pregnant] when you want to?” Response categories were “not at all likely,” “slightly likely,” “quite likely” and “extremely likely.” The 10 respondents who volunteered “don’t know” were dropped from the analysis.

Fifteen men and eight women were lost via listwise deletion. Two-thirds of those who were dropped were ambivalent, and most had used birth control in the past month. We do not believe listwise deletion significantly affected the findings.

### Analyses

All analyses were conducted in Stata, version 12, using the complex survey settings to account for sample stratification and to weight the results appropriately. For bivariate analyses, we used cross-tabulations and chi-square tests to gauge associations between pregnancy ambivalence and contraceptive use and the psychosocial, social and demographic covariates. Variables that had marginally significant bivariate relationships with both ambivalence and contraceptive use ( $p < .10$ ) were included in our multivariate models.

We present results from two sets of multivariate analyses. The first was a logistic regression with pregnancy

ambivalence as the outcome variable and gender as the primary independent variable. Because the relationship between gender and ambivalence was highly significant, we then wanted to determine if the association between ambivalence and birth control use varied by gender. Thus, in the second set of analyses, we ran separate logistic regressions for men and women with ambivalence as an independent variable and contraceptive use as the outcome.

## RESULTS

### Descriptive and Bivariate

Overall, 45% of respondents exhibited ambivalence about pregnancy (Table 1, page 240). Men were significantly more likely than women to be ambivalent—53% of them provided ambivalent responses, compared with 36% of women.

Twenty-one percent of respondents reported using a female-controlled hormonal or long-acting contraceptive method in the past month, 29% a male-controlled method, 32% both a female- and a male-controlled method, and 19% no contraceptive method. Compared with men, women reported greater use of female-controlled methods and less use of male-controlled methods and dual methods, but the proportions of men and women reporting no method use in the last month were similar (17% and 20%). Compared with those with clear intentions to avoid pregnancy, ambivalent respondents were significantly more likely to have used no birth control method in the last month (25% vs. 14%); also, a smaller proportion of ambivalent respondents than of unambivalent respondents had used female-controlled methods (16% vs. 24%).

The mean participant age was 22 (not shown). Sixty-one percent of respondents were white, 18% were black, 15% were Hispanic and 6% were of another race or ethnicity. Fifteen percent did not have a high school diploma, 32% were high school graduates, 34% had some post-secondary schooling and 19% had graduated from college. Most respondents (72%) were not living with their partner. Whereas no significant gender differences existed across the social and demographic variables, pregnancy ambivalence was associated with both race and education. Compared with the proportion among unambivalent respondents, a greater proportion of ambivalent respondents were Hispanic (21% vs. 11%) and a smaller proportion were college graduates (12% vs. 24%).

Respondents demonstrated confidence in their prospects of childbearing with their current partner: Slightly more than half indicated that they were quite or extremely likely to have a baby with him or her. Compared with the proportion among ambivalent respondents, a greater proportion of unambivalent respondents reported they were not at all likely to ever have a baby with their current partner (24% vs. 15%); a smaller proportion reported that they were extremely likely to do so (25% vs. 38%).

A majority of respondents supported the notion that “every pregnancy is a blessing”; only 21% disagreed. A significantly greater proportion of women than of men

**TABLE 1. Percentage distribution of U.S. young adults aged 18–29 in current sexual relationships, by selected characteristics, according to gender and pregnancy ambivalence status, National Survey of Reproductive and Contraceptive Knowledge, 2008–2009**

Characteristic	Total (N=774)	Gender		Ambivalent	
		Male	Female	Yes	No
		(N=355)	(N=419)	(N=343)	(N=431)
<b>AMBIVALENT**</b>					
Yes	44.6	53.1	36.4	na	na
No	55.4	46.9	63.6	na	na
<b>CONTRACEPTIVE USE</b>					
<b>Used method in past month‡</b>					
Yes	81.6	83.1	80.0	75.7	86.3
No	18.5	16.9	20.0	24.3	13.7
<b>Current method***,†</b>					
Female-controlled methods	20.8	10.9	30.4	16.4	24.3
Male-controlled methods	28.5	35.6	21.7	24.1	32.1
Both female- and male-controlled methods	31.8	36.2	27.4	34.3	29.7
None	18.9	17.3	20.4	25.2	14.0
<b>SOCIAL AND DEMOGRAPHIC</b>					
<b>Age</b>					
18–19	26.4	25.9	26.8	23.1	29.0
20–21	16.9	13.0	20.6	16.8	16.9
22–24	20.1	21.7	18.5	19.0	21.0
25–29	36.7	39.4	34.0	41.1	33.1
<b>Race/ethnicity‡</b>					
White	60.5	62.0	59.1	57.3	63.1
Black	18.1	16.6	19.5	16.4	19.5
Hispanic	15.1	15.9	14.5	20.8	10.6
Other	6.2	5.6	6.9	5.5	6.8
<b>Education†</b>					
<high school	15.4	11.2	19.5	17.0	14.1
High school/GED	31.9	35.2	28.7	36.5	28.2
Some postsecondary	34.1	35.0	33.2	34.0	34.2
≥college	18.6	18.6	18.6	12.4	23.5
<b>Cohabiting</b>					
Yes	28.3	26.5	30.0	31.7	25.5
No	71.7	73.5	70.0	68.3	74.5
<b>PSYCHOSOCIAL</b>					
<b>Likelihood of having a baby with current partner†</b>					
Not at all likely	19.9	24.8	15.2	14.7	24.1
Slightly likely	27.7	29.2	26.2	27.4	27.9
Quite likely	21.6	18.8	24.4	20.3	22.7
Extremely likely	30.8	27.2	34.3	37.6	25.3
<b>Every pregnancy is a blessing***,§</b>					
Strongly agree	55.7	44.8	66.4	67.2	46.4
Somewhat agree	23.4	28.0	18.8	20.6	25.6
Somewhat disagree	13.5	15.9	11.2	10.2	16.2
Strongly disagree	7.4	11.3	3.6	2.0	11.8
<b>Pregnancy will happen regardless of contraceptive use§</b>					
Strongly agree	21.8	20.5	23.0	30.0	15.2
Somewhat agree	19.3	18.3	20.3	22.8	16.5
Somewhat disagree	14.8	14.4	15.2	20.2	10.6
Strongly disagree	44.1	46.8	41.4	27.0	57.7
<b>Likelihood of infertility‡</b>					
Not at all likely	45.8	50.8	41.0	50.0	42.5
Slightly likely	36.6	32.7	40.5	27.5	43.9
Quite/extremely likely	17.6	16.6	18.5	22.5	13.6
Total	100.0	100.0	100.0	100.0	100.0

\*\*Distributions by gender differ at p<.01. \*\*\*Distributions by gender differ at p<.001. †Distributions by ambivalence differ at p<.05. ‡Distributions by ambivalence differ at p<.01. §Distributions by ambivalence differ at p<.001. Notes: Percentages may not total 100.0 because of rounding. na=not applicable.

agreed with this statement (85% vs. 73%). Also, ambivalent respondents were significantly more likely than unambivalent respondents to agree (88% vs. 72%).

In response to the fatalistic notion that regardless of birth control use, “when it is your time to get pregnant, it will happen,” 22% of all respondents strongly agreed, 19% somewhat agreed, 15% somewhat disagreed and 44% strongly disagreed. Ambivalent respondents were significantly more likely than unambivalent respondents to agree with this statement (53% vs. 32%).

Surprisingly, more than half of respondents said it was at least slightly likely that they could not conceive. Compared with the proportion among ambivalent respondents, a greater proportion of unambivalent respondents thought that infertility was slightly likely (44% vs. 28%), but a lower proportion thought that infertility was quite or extremely likely (14% vs. 23%).

**Multivariate**

•**Pregnancy ambivalence.** The significant relationship between gender and ambivalence remained even when other variables were held constant (Table 2). Compared with women, men had approximately three times the odds of being ambivalent about pregnancy (odds ratio, 2.9). Those reporting that they were extremely likely to have a baby with their current partner were more likely to be ambivalent than were those who said they were not at all likely to do so (2.2). Participants who gave any response other than strongly agreeing that every pregnancy is a blessing had reduced odds of being ambivalent (0.1–0.4).

•**Contraceptive use.** Although pregnancy ambivalence was associated with reduced likelihood of contraceptive use for all respondents, the relationship was statistically significant only for men (Table 3). Compared with men with clear intentions to avoid pregnancy, ambivalent men were less likely to have used any contraceptive method with their partner in the last month, even when other associated variables were controlled for (odds ratio, 0.4). For men, somewhat agreeing that every pregnancy is a blessing and strongly disagreeing that pregnancy will happen when it is time regardless of birth control use were associated with increased odds of birth control use (4.3 and 2.9, respectively). Among women, blacks were less likely, and those who believed their own infertility was slightly likely, had elevated odds of reporting method use (0.3 and 2.4, respectively). Compared with women who had not completed high school, those with at least a high school diploma were more likely to have used birth control in the previous month (4.3–17.9).

We also explored whether ambivalence was associated with method type (not shown). We ran two multinomial regressions, stratified by gender, with ambivalence as an independent variable and contraceptive method type as the outcome. Among both men and women, unambivalent respondents appeared to have greater odds than ambivalent respondents of using any type of contraceptive method, rather than no method, in the last month; however, the only statistically significant comparisons were between men

**TABLE 2. Odds ratios from logistic regression analysis examining associations between selected characteristics of young adults and pregnancy ambivalence**

Characteristic	Odds ratio
<b>Gender</b>	
Male	2.92***
Female (ref)	1.00
<b>Likelihood of having a baby with current partner</b>	
Not at all likely (ref)	1.00
Slightly likely	1.53
Quite likely	1.48
Extremely likely	2.21*
<b>Every pregnancy is a blessing</b>	
Strongly agree (ref)	1.00
Somewhat agree	0.44**
Somewhat disagree	0.39**
Strongly disagree	0.08***

\*p<.05. \*\*p<.01. \*\*\*p<.001. Note: ref=reference group.

using a female-controlled or male-controlled method and those using no method. Compared with unambivalent men, ambivalent men were less likely to have used condoms or withdrawal (odds ratio, 0.2; p<.01) or female-controlled methods (0.2; p<.001) than no method in the last month.

## DISCUSSION

A considerable proportion of unmarried young adults in current sexual relationships exhibited contradictory desires about having a baby, indicating that adolescents are hardly the only ones to experience pregnancy ambivalence.<sup>11,12</sup> Young men were especially disposed to lack clarity about pregnancy desire; men had nearly three times the odds of women of being ambivalent even when other associated variables were held constant. One possible explanation for these findings is that because childbearing and childrearing are less associated with masculinity than with femininity,<sup>28</sup> men may be less certain about entering into parenthood. In addition, the work of childrearing continues to be disproportionately performed by women.<sup>29-31</sup> Thus, women may have a better sense of how their lives would be limited by a baby, and therefore may have clearer intentions to avoid pregnancy, while men may feel that pregnancy is ultimately their partner's choice and primary responsibility, and therefore may not have coherently formed opinions on the topic.

Pregnancy ambivalence was associated with reduced likelihood of contraceptive use for all respondents, but the association was statistically significant only for men. Unfortunately, the size of our sample did not allow for analyses by individual contraceptive methods, but we encourage future researchers to perform such analyses whenever possible. Reliance on user-dependent methods, particularly those used in the heat of the moment (e.g., condoms or withdrawal), is likely to have a different relationship with pregnancy ambivalence than reliance on user-independent methods (e.g., IUDs or implants).

We were surprised that ambivalence was not significantly associated with contraceptive practices for women in multivariate analyses, even though the relationship was

in the expected direction. We suspect that differences in measurement or study sample can explain why other studies have found statistically significant associations.<sup>3,4,11,12</sup> Our inclusion of certain psychosocial variables (such as pregnancy fatalism or perceived likelihood of having a baby with one's partner) may have soaked up some of the variance accounted for by pregnancy ambivalence in previous studies. Our conceptualization of pregnancy ambivalence, a hybrid of prior approaches to this topic, also may have affected outcomes. Among women, certain definitions of ambivalence may be more strongly associated with lack of contraceptive use than others. We strongly recommend continued dialogue and research on the benefits and drawbacks of various approaches, as well as a comparative analysis of which approaches seem to reveal the strongest associations with contraceptive use, method choice and unintended pregnancy. Given the strength of the association of pregnancy ambivalence with contraceptive practices among men in this study, and women in a number of others,<sup>3,4,11,12</sup> further examinations of this topic would be highly worthwhile.

**TABLE 3. Odds ratios from logistic regression analyses examining associations between selected characteristics of young adults and contraceptive use, by gender**

Characteristic	Male (N=343)	Female (N=412)
<b>AMBIVALENT</b>		
Yes	0.35**	0.63
No (ref)	1.00	1.00
<b>SOCIAL AND DEMOGRAPHIC</b>		
<b>Age</b>		
18-19 (ref)	1.00	1.00
20-21	1.64	1.66
22-24	1.26	0.96
25-29	1.46	1.09
<b>Race/ethnicity</b>		
White (ref)	1.00	1.00
Black	1.46	0.27*
Hispanic	0.68	0.81
Other	0.73	0.62
<b>Education</b>		
<high school (ref)	1.00	1.00
High school/GED	0.68	4.34**
Some postsecondary	1.31	4.26**
≥college	1.19	17.89***
<b>PSYCHOSOCIAL</b>		
<b>Every pregnancy is a blessing</b>		
Strongly agree (ref)	1.00	1.00
Somewhat agree	4.31*	1.24
Somewhat disagree	0.77	0.50
Strongly disagree	0.40	0.46
<b>Pregnancy will happen regardless of contraceptive use</b>		
Strongly agree (ref)	1.00	1.00
Somewhat agree	0.61	0.99
Somewhat disagree	1.25	0.62
Strongly disagree	2.87*	0.78
<b>Likelihood of infertility</b>		
Not at all likely (ref)	1.00	1.00
Slightly likely	1.46	2.43*
Quite/extremely likely	2.85	1.38

\*p<.05. \*\*p<.01. \*\*\*p<.001. Note: ref=reference group.

Future research should also examine pregnancy ambivalence within the context of the social and demographic variables that are linked to a heightened likelihood of unintended pregnancy. For example, socially disadvantaged women and men may be more susceptible to pregnancy ambivalence than the socially privileged; this disparity may add to the other reasons behind lower contraceptive use rates among the former group.<sup>17</sup> Much more work is needed to translate findings relating to ambivalence to the programmatic or policy level. What, if anything, can we do to help people clarify their pregnancy desires?

Our study suggests that women should not remain the sole targets of pregnancy prevention programs or interventions. Findings confirm prior qualitative research indicating that men's pregnancy ambivalence may be related to contraceptive use.<sup>9</sup> If further research indicates that clarifying one's desired time for pregnancy and parenthood helps improve contraceptive use, then programmatic and policy efforts should include both men and women. We strongly encourage public health practitioners to explore whether helping men as well as women clarify their pregnancy desires—and align pregnancy attitudes and plans with contraceptive practices—could help improve contraceptive use and reduce unintended pregnancies.

At the same time, research on pregnancy ambivalence underscores the tremendous difficulty people may have in clarifying their pregnancy and parenting desires. Our findings highlight several psychosocial variables that may contribute to such reproductive ambiguity. For example, a substantial proportion of respondents expressed some degree of pregnancy fatalism. Such culturally fueled attitudes<sup>32,33</sup> contribute to an environment in which a lack of clarity regarding desire for pregnancy may be normative, rather than exceptional. Thus, while we encourage pregnancy prevention programs to involve men and to potentially help young adults to define their pregnancy desires, we simultaneously ask public health practitioners to understand and support the idea that clarifying such desires can be difficult. Young adults and older adults, men and women alike, can struggle with determining exactly when, how or with whom to have a baby.

### Limitations

Our findings should be considered in light of study limitations. For example, our measurement of pregnancy ambivalence incorporates definitions that were previously used in some studies,<sup>6,10,14</sup> but it is inconsistent with others.<sup>16</sup> Our definition captures individuals who had conflicted, indifferent or wavering attitudes and feelings about pregnancy. We believe that this definition is an improvement over ones used in previous studies because it captures a broader range of pregnancy ambivalence; however, a narrower measure would likely yield different results.

Another limitation of our analysis is that respondents' reports of their partners' contraceptive methods may not have been accurate. In particular, men may have incorrectly assessed what method their partner used in the last

month, because use of hormonal and long-acting methods is undetectable. This shortcoming is hardly limited to our study; inherent data dangers exist whenever individuals report on their partners' method use. A number of researchers have interviewed both members of couples in their samples,<sup>34</sup> but comparing couples' reports was beyond the scope of this study.

An additional challenge of our analysis was our inability to assess ambivalence about contraceptive use. Many women and men are conflicted about contraceptive methods' benefits versus their side effects, both real and perceived.<sup>23</sup> We suspect that contraceptive ambivalence, like pregnancy ambivalence, may have strong associations with contraceptive practices, and we strongly encourage future research on this topic.

Finally, survey design precluded our ability to control for relationship duration. The longer couples have been together, the more open they may be to the possibility of having a child, even in the absence of explicit desire for a pregnancy.<sup>9</sup> Future studies should explore associations between pregnancy ambivalence and relationship length, quality and context wherever possible.

### Conclusion

These analyses document the pervasiveness of pregnancy ambivalence among unmarried young adults and its link to contraceptive use among young adult men. Findings underscore both the vulnerability of young adults to pregnancy ambivalence and the need for men's involvement in pregnancy prevention research, education and interventions.

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**Author contact:** [jenny.a.higgins@gmail.com](mailto:jenny.a.higgins@gmail.com)