Factors Related to Planned and Unplanned Pregnancies

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BACKGROUND. Given the efficacy of most contraceptive options, it is of concern that most pregnancies in the United States are unplanned. Besides reducing the woman's and family's preparedness for parenting, unplanned pregnancies are at higher risk for inadequate prenatal care, perinatal morbidity, and significant postnatal problems. Little is known about the factors responsible for the high rates of unplanned pregnancy.

METHODS. One hundred ten pregnant women were surveyed to examine factors relating contraception to unplanned pregnancy.

RESULTS. Sixty-five percent of pregnancies were unplanned. There was a statistically significant association between having unplanned pregnancies and being single or divorced. Women who had planned their pregnancies tended to be more satisfied with contraceptives. In sexual encounters, women with unplanned pregnancies were more likely to use no contraception or to practice "withdrawal" or use condoms rather than hormonal contraception; to be influenced by their partner regarding birth control use; and to forget to use contraception.

CONCLUSIONS. All women of childbearing age who are sexually active can benefit from planning pregnancies. Counseling that accesses a woman's expectations regarding birth control, followed by a careful explanation of the side effects of a contraception choice, may reduce the rate of unplanned pregnancy. Counseling the male partner or sexually active men in contraceptive options may be equally important. Understanding factors that result in satisfaction with contraception may reduce unplanned pregnancies.

KEY WORDS. Pregnancy; contraception; contraception behavior; contraceptive agents; contraceptive devices; women; knowledge, attitudes, practice. *(J Fam Pract 1996; 43:161-166)*

Ideally, an occurrence as momentous as pregnancy is a planned event. The majority of the pregnancies in the United States are, however, unintended or unplanned.[1-5] Although unplanned pregnancy among teenagers is a problem, it is not limited to this age group. Unplanned pregnancies appear to be on the increase among both single and married women, as well as among special groups such as adolescents and women over age 35.[1,3,6]

Whether mistimed or unintended, unplanned pregnancies can be viewed as a health risk that can lead to long-term behavioral and psychological consequences for a woman and/or her child. Over one half of these pregnancies are terminated in abortion, and when carried to term, are less likely to receive adequate prenatal care.[1,7] Women with unplanned pregnancy are more likely to smoke cigarettes and use alcohol during pregnancy, behaviors that can increase risk for a low-birthweight infant.[1] There is evidence that children of unplanned pregnancies are also at higher risk for poor school performance, abuse,[8,9] and neglect.[10]

In an era when effective contraception is readily available, identifying causal factors related to unplanned pregnancy is a complex task. Previous studies have focused on sociodemographic variables related to unplanned pregnancies. Teenagers, single women and women having an income below the poverty level are most likely to have unplanned pregnancies.[3,6,10] With the exception of teen pregnancy, few studies have focused on modifiable variables relating to unplanned pregnancy. Health education in secondary schools has served as a preventive intervention for teenage pregnancies, but has met with mixed results, as have many other approaches

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to prevention. Physicians' provision of general information and discussion of birth control with sexually active women does not appear sufficient to decrease unplanned pregnancy.[11] Knowledge of women's beliefs, expectations, and behaviors when choosing and using birth control may be an important contributing factor in unplanned pregnancies. Factors such as poor adherence to contraceptive use and dissatisfaction with contraceptives have been linked with unplanned pregnancy, but these potential factors have not been evaluated comprehensively.[10]

The purpose of the current study was to examine the relationship between unplanned pregnancy and birth control variables (type used, beliefs, and side effects). We expected to find that women with lower satisfaction with their birth control choice would be more likely to have unplanned pregnancies. Additionally, we expected replication of associations between unplanned pregnancy and sociodemographic variables of young age, single marital status, and low personal income.

METHODS

One hundred ten women who were pregnant and receiving prenatal care in an outpatient family practice center that serves as a residency training site in northeastern Tennessee were surveyed by two student researchers over two summers (May to July 1994, and May to July 1995). Participants were interviewed in privacy, and informed consent was obtained. There was no attempt to contact women before they registered for the pregnancy; rather, women were interviewed before or after their prenatal appointments. Pregnancy was chosen as the time frame to interview women because it is a period during which women would attend the office regularly, and it provided a sample of women who had recently been sexually active and who would not be using contraception at the time of interview.

The surveys requested information pertaining to sociodemographic variables, and included an obstetric and contraception use history, a 22-item questionnaire measuring beliefs and attitudes about birth control, and a 13-item birth control experiences questionnaire pertaining to the most recent form of birth control used. These questionnaires allowed for Likert-type responses to questions and were developed for use in this study. As a part of the obstetrics and contraception history, each participant was asked, "Did you plan this pregnancy?" This question served to divide the participants into two comparable groups.

The data were analyzed calculating simple statistics and frequencies of the two groups. Differences between groups on measured variables were evaluated by chi-square analyses.

RESULTS

Of the 110 women who were interviewed, 39 (35%) had planned the pregnancy and 71 (65%) had not. At the time of the interview, 100 of the pregnancies were "wanted." Table 1 presents the sociodemographic variables of the planned and unplanned

TABLE 1

Demographic Variables of Women with Planned and Unplanned Pregnancy

Variable	Percentage Within Group: Planned (n=39)	Unplanned (n=71)
Marital status*		
Single/divorced	19	47
Married/live together	81	53
Race		
White	97	90
Black	3	10
Education level		
Less than 12 years	49	49
High school degree or greater	51	51
Number of adults in house (including self)		
One	3	18
Two or more	97	82
Annual household income		
<$20,000	77	79
>$20,000	13	17
Unknown	10	4
Employed during pregnancy		
Full-time	46	18
Part-time	13	20
Unemployed	41	62
Employed prior to pregnancy		
Full-time	46	52
Part-time	14	25
Unemployed	40	23
Receive public assistance	85	94

*Groups significantly different, χ^2, $P<.05$.

groups. There were no statistically significant differences between the women with planned and unplanned pregnancies with respect to age, race, education level, total number of people living in the household, number of adults in the household, number of children under age 10, income level, participation in public assistance programs, or work status prior to pregnancy. The only statistically significant difference between groups was marital status. Women who were single (divorced or never married) were significantly more likely to have an unplanned pregnancy (χ^2=7.26, *df*=1, *P*<.01).

TABLE 2

Obstetric History by Pregnancy Group

Variable	Planned Group Mean(SD)	Planned Group Range	Unplanned Group Mean(SD)	Unplanned Group Range
Age, y	24.02(4.39)	17-37	23.13(4.93)	16-37
Miscarriages	0.23(0.54)	0-2	0.26(0.36)	0-2
Abortions	(no abortions)		0.11 (0.36)	0-2
No. of children	0.70 (0.85)	0-3	0.94(1.34)	0-6
Age started using birth control, y	17.74 (3.40)	12-27	16.71(2.96)	11-32

Women in the unplanned group were more likely to report that they became pregnant while using contraception (23% unplanned vs 3% planned). The average age of the unplanned group was 23.13 years (range, 17 to 37) as compared with 24.13 years (range, 16 to 37) for the planned group. This was the first pregnancy for 53% of the unplanned group and 50% of the planned group. The average age of initiating contraception use in women who had unplanned pregnancies was 16.7 years (range, 11 to 32), and in the planned pregnancy group, it was 17.7 years (range, 12 to 27). Seventy-five percent of the planned group and 83% of the unplanned group had discussed contraception with their physician in the past. The obstetric histories of the two groups were not significantly different on any of the measured variables (Table 2).

TABLE 3

Contraception Used Before Index Pregnancy

Type	Percentage Within Group: Planned Group	Percentage Within Group: Unplanned Group
Oral contraceptives	56	38
Condoms	20	25
Depo-Provera or Norplant	8	5
Other (eg, diaphragm)	3	2
"Withdrawal" or nothing*	13	31

*Pairs significantly different, χ^2, *P*<.05.

There were differences in contraceptive use between the two groups. The majority of women in the study used some form of birth control. Oral contraceptive pills (OCPs) were the most frequently used form of contraception among women with both planned and unplanned pregnancies (56% and 38%, respectively). Thirty-one percent of the women with unplanned pregnancies used either no contraception or a method with questionable efficacy (ie, "withdrawal"); this percentage is significantly different from the 13% in the planned pregnancy group (χ^2=4.50, *df*=1, *P*<.05). The type of contraception used by each group is presented in Table 3.

The two questionnaires revealed very few differences between groups. Both groups reported breakthrough bleeding, cramps, and headaches as birth control problems. In response to the questionnaire addressing beliefs and attitudes about contraception, all women from both groups indicated that availability of their birth control choice was not a problem. A higher percentage of women in the unplanned group than the percentage of women in the planned group indicated that forgetting to use birth control was a problem (36% vs 14%, respectively).

A higher percentage of women who planned pregnancies were satisfied or very satisfied with their contraception (62% vs 43%). Women in the unplanned group were significantly more likely to be influenced by their partner with respect to contraceptive choice (χ^2=4.18, *df*=1, *P*<.05). The frequencies of responses on the birth control questionnaire are presented for both groups in Table 4, and the frequencies of responses on the beliefs and attitudes questionnaire are presented in Table 5.

TABLE 4

Ratings of Birth Control Experiences

Variable	Percentage Within Group* Planned Group (n=37)	Unplanned Group (n=67)
Breakthrough bleeding	16	12
Cramps	13	25
Weight gain	19	12
Bloating	13	13
Headaches	24	21
Breast soreness	5	7
Vaginal discomfort	3	7
Chloasma (pregnancy mask)	3	1
Energy level	11	9
Messy to use	3	4
Rashes	5	1
Difficult to obtain	0	0
Partner does not like	11	7

*Percentage of women within each group responding "more of a problem for me" for each questionnaire item. These responses correspond to 4 or 5 on 7-point Likert-type scale on the birth control questionnaire.

DISCUSSION

This study supports the idea that women dissatisfied with birth control are more likely to have an unplanned pregnancy, although the differences only approached statistical significance (χ^2=3.40, df=1, P=.066). While this study offers no causal relations among variables, there were associations and interrelations between sociodemographic variables and specific experiences that enhance our understanding of issues related to planned and unplanned pregnancy.

Being single was associated with having an unplanned pregnancy in this study, a finding consistent with other studies in this topic area.[3-5] Age and household income were not related to the likelihood of a woman planning her pregnancy. Age did not predict unplanned pregnancy in this population; however, although only 20% of the population was younger than age 20, our selection criterion of being 18 or above is likely to have excluded a percentage of younger pregnant women. Most of the women in this study had a low household income: only 16% of the participants had incomes of more than $20,000 per year. Therefore, our results do not represent a normal distribution of incomes. While low income does not preclude planning a pregnancy, previous studies have found that younger age and poverty are related to higher rates of unplanned pregnancy.[3-5,9]

In this study, 22% of the participants used no contraception or a contraceptive choice with very poor efficacy (ie, "withdrawal"). A significantly higher percentage of women with unplanned pregnancies used forms of contraception with poorer efficacy (31% unplanned vs 13% planned). Interestingly, the choice of "withdrawal" was not an option on the survey but was written in the "other" category on our survey. This strategy was not even considered by the authors but apparently is a common practice for women, as evidenced by the 12 participants who listed it. Using no contraception, of course, places a woman at a higher risk for pregnancy. Other studies with larger databases report that 90% of women at risk for unplanned pregnancy use contraception; 10% do not, and these alone account for 53% of unplanned pregnancies.[10,12]

Using less effective methods of contraception has been previously associated with unplanned pregnancy.[10] In this study, more women who planned their pregnancy used hormonal forms of contraception—OCPs or injectable/implantable hormones—than did women with unplanned pregnancies. In addition to either not using contraception or using less effective methods of contraception, a higher percentage of women who had unplanned pregnancies responded "very true" to the survey statement that they "sometimes forget to use contraceptives." This correlates with the finding that a greater percentage of women in the unplanned group indicated that they had become pregnant while using birth control.

The findings of the present study suggest that the decision-making process of women in the unplanned pregnancy group is different from that of women in the planned group with respect to choosing and utilizing contraception. In the unplanned group, women were significantly more likely to be influenced by their partner in birth control choice. This finding may be caused by women responding more to the comments and preferences of their partner than to their own needs and satisfaction in making birth control choices. Again, our findings support the hypothesis that planned pregnancies are related to satisfaction with birth control choice. Satisfaction with contraception is likely to improve compliance and result in better and more efficient use, thus allowing a woman to plan her pregnancy.

The use of more efficient hormonal contraception rather than less efficient barrier contraception or no contraception would likely help women prevent unplanned pregnancies. Women's beliefs and expectations about their contraception may be more important, however. Although medical providers believe oral contraceptives are safe and effective, women may not agree. In a 1985 Gallup poll of adult women, 75% felt that oral contraceptives were high-risk drugs, 50% felt their use produced more risk than childbirth, and 30% felt they caused cancer.[13] In a review of studies on users of OCPs between 1966 and 1989, compliance rates for OCPs were less than 60%.[14] It appears that fewer women are using more reliable and effective methods, such as OCPs, and more are using less reliable methods, such as condoms, foams, and gels, than 10 years ago.[3,4,15,16]

A deterrent to the use of contraception is the fear of side effects and complications.[4] In this study, however, women in the planned and unplanned groups did not have significantly different side-effects experiences. It is possible that a mismatch between a woman's expectations and the actual side effects experienced while using a particular method of contraception is the factor that has the greatest influence on a woman's decision to change to a less effective contraceptive method.

This study has limitations, and the findings should be viewed as preliminary. All of the findings are associations of variables and are not causal. Our primary research variable of "plannedness" was derived from the response to a single question. While this divides the participants into two comparison groups, it is overly simplistic and likely excludes other relevant factors. Most other research on this topic shares the same limitations. Future studies could avoid these limitations by improving the operational definition of planned and unplanned pregnancy. Only pregnant women were enrolled in

TABLE 5

Beliefs and Attitudes About Birth Control

Questionnaire Item	Percentage Within Group*	
	Planned Group (n=37)	Unplanned Group (n=67)
My partner wanted me to use†	19	37
Overall, satisfied with birth control‡	62	43
Caused complications in pregnancy	3	24
Improved relationship with family	5	21
Would use an additional birth control	11	3
Would forget to use	30	42
Others would know type of birth control	5	3
Menstruation is "regular"	32	51
Caused breast enlargement	0	3
Reduced my risk of getting UTI	22	15
Improved my relations with partner	16	22
Enjoyed sexual feelings/encounters	24	18
Fears about reduced fertility in future	16	22
Was the most affordable	24	30
Reduced my risk of getting STD	22	30
Causes more mood changes	22	18
Confidence about *not* getting pregnant	82	57
Was a daily hassle	19	18
Reduced my risk of getting AIDS	22	24
Would cause cancer	13	12
Was very convenient to use	62	64
Felt more in control of life	35	31

*Percentage of women within each group responding "more true for me," with respect to form of birth control used prior to pregnancy. These responses correspond to 4 or 5 on 7-point Likert-type scale on the beliefs and attitudes questionnaire.
†Significant difference between groups, χ^2, P=.04.
‡Difference between groups approached significance, χ^2, P =.065.
AIDS denotes acquired immunodeficiency syndrome; UTI, urinary tract infection; STD, sexually transmitted disease.

this study. Nationwide, more than one half of unplanned pregnancies end in abortion. There was no way to contact or find the women in this practice who had already opted for abortion. The unplanned pregnancies in this study are likely to be mistimed rather than unwanted. Further studies including women with unplanned pregnancies that ended in abortion might show a greater disparity between the group who planned and the group who did not plan their pregnancies. Additionally, while pregnancy was chosen for reasons listed previously, it is possible that women currently using birth control methods may be more accurate or reliable in their survey responses than the women in this study. A final limitation in this cross-sectional study is that women in the unplanned group could have become dissatisfied with their contraception after learning they were pregnant and may be subject to retrospective bias.

Use of this information by health care providers may be a complex task. An equal percentage of women in the unplanned group as in the planned group had received counseling regarding contraception from their physician. Availability was not perceived as a problem by any participant in this study. Obviously, health care providers should encourage the use of any form of contraception as opposed to none, and the value of more effective hormonal methods rather than less reliable methods should be emphasized.

The choice of who should provide and who should receive counseling is interesting. Our study found that single women with unplanned pregnancies were more likely to be influenced by their sex partner in choosing contraception. Sexually active single men and women appear to be important recipients of information about contraception. Contraception counseling may need to elicit the concerns of both the woman and her partner so that side effects or experiences are less likely to be perceived negatively. The woman's expectations of contraception, prior contraceptive history, and satisfaction may be as important as the method chosen. Analysis of women's expectations is needed to provide more effective counseling advice. Further, a study including the sexual partners of single women in counseling may improve rates of unplanned pregnancy. Such interventions may go well beyond what can be accomplished in a physician's office, as social policies and norms may have far more impact than individual counseling.

Identifying the factors that place a woman at risk for an unplanned pregnancy can help health care providers offer more effective counseling and better follow-up. Additionally, and possibly more importantly, women who feel more in control of their fertility may lead healthier lives and be better prepared for motherhood.

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