

Adolesc Health. Author manuscript; available in PMC 2006 October 13.

Published in final edited form as:

J Adolesc Health. 2004 December; 35(6): 453-461.

Adolescent Pregnancy Intentions and Pregnancy Outcomes: A Longitudinal Examination

CYNTHIA ROSENGARD, Ph.D., MAUREEN G. PHIPPS, M.D., M.P.H., NANCY E. ADLER, Ph.D., and JONATHAN M. ELLEN, M.D.

From the Division of General Internal Medicine, Department of Medicine, Rhode Island Hospital, Brown University School of Medicine, Providence, Rhode Island

Departments of Obstetrics and Gynecology and Community Health, Women & Infants Hospital, Brown University School of Medicine, Providence, Rhode Island

University of California, San Francisco, San Francisco, California

Division of General Pediatrics and Adolescent Medicine, Department of Pediatrics, Johns Hopkins School of Medicine, Baltimore, Maryland

Abstract

Purpose—(a) To examine different methods of assessing pregnancy intention; (b) to identify psychosocial differences between those who indicate pregnancy intentions and those who do not; and (c) to examine the relationship between pregnancy intentions and subsequent pregnancy at 6-month follow-up in nonpregnant (at baseline), sexually experienced adolescent females.

Methods—Longitudinal cohort study of 354 sexually experienced female adolescents attending either a STD clinic or HMO adolescent medicine clinic in northern California. Student's t-tests and regressions examined psychosocial differences between females who reported "any" and "no" pregnancy intentions. ANOVAs examined differences among different combinations of pregnancy plans/likelihood. Chi-square analyses assessed associations between baseline pregnancy intentions and subsequent pregnancy.

Results—Adolescents' reports of their pregnancy plans and their assessments of pregnancy likelihood differed from one another ($\chi^2 = 50.39$, df = 1, p < .001). Pregnancy attitudes and baseline contraceptive use differentiated those with inconsistent pregnancy intentions (Not Planning, but Likely) from those with clear pregnancy intentions (Planning and Likely, and Not Planning and Not Likely) (Pregnancy Attitudes: F [2,338] = 68.96, p < .0001; Contraceptive Use: F [2,308] = 14.87, p < .0001). Suspected pregnancies and positive pregnancy test results were associated with baseline pregnancy intentions (Suspected: $\chi^2 = 19.08$, df = 2, p < .01; Positive Results: $\chi^2 = 8.84$, df = 2, p = .015).

Conclusions—To reduce adolescent childbearing we must assess pregnancy intentions in multiple ways. Information/education might benefit those female adolescents with inconsistent reports of pregnancy intentions.

Keywords

Pregnancy intentions; Adolescent females; Attitudes; Intentions; Contraceptive use	
	_

Address correspondence to: Dr. Cynthia Rosengard, Rhode Island Hospital, Division of General Internal Medicine, Multiphasic Building, First Floor, 593 Eddy Street, Providence, RI 02903. E-mail: cynthia_rosengard@brown.edu.

The research was supported by the National Institute of Allergy and Infectious Diseases (Grant# AI36986) and the Maternal and Child Health Bureau Training Grant (Grant# MCJ000978A).

More than 880,000 adolescent girls between 15 and 19 years old became pregnant in the United States in 1996, representing 19% of sexually active girls in this age group [1,2]. More than 75% of teen pregnancies are considered unplanned or unintended and approximately 35% of all teen pregnancies end in abortion [3]. For adolescents continuing a pregnancy, approximately 40% to 60% of births are considered the result of unintended pregnancies [3–7]. Fifty-six percent of teen pregnancies result in live births and one in four teenage mothers has another child within 2 years [3,4,8].

The term "pregnancy intention" is widely used, and loosely interpreted. For example, definitions of intention include degrees of "wantedness," "planning," "timing," and "happiness" regarding a pregnancy [6,9–14]. To illustrate the differences between these terms, often used interchangeably, a study of 110 women receiving prenatal care indicated that, whereas 35% of the pregnancies were considered "planned," 91% of them were "wanted" [15].

Often, "intention" to be pregnant is measured during pregnancy or after birth. The idea of pregnancy intention, however, relates to a woman's feelings before conception, whereas whether a woman wants to have a baby may change and reflect her emotional state during or after pregnancy, as well as beforehand [13,16]. Because the idea of pregnancy intention attempts to capture a woman's preconception attitude toward a pregnancy, it is important to recognize the timing of when these questions are asked. For example, after birth, a higher proportion state their pregnancies are wanted (interpreted as intended) as compared with when questioned during pregnancy [17,18]. This trend may reflect more positive and socially accepted feelings about having the child as the pregnancy continues [19,20]. Pregnancy intention has been studied retrospectively through interviews with women who are currently pregnant [4], who have recently given birth [17], or who present for pregnancy testing [13]. Because prospective longitudinal studies investigating pregnancy intention in adolescents are scant, we do not know much about adolescents who intend to become pregnant before conception or whether pregnancy intentions predict later pregnancy outcomes.

Understanding the process of adolescent pregnancy intention has significant clinical application. Adolescent pregnancies are often characterized by delayed initiation of prenatal care, poor prenatal health behaviors, and low birth weight infants [18,21,22]. Other research has shown a similar increased risk of these outcomes among women with unintended pregnancies [10,23,24]. Recent work also suggests that even healthy infants born to teenage mothers are at increased risk of post-neonatal death [25]. Clearly, understanding adolescents' motivations for pregnancy, the factors (i.e., attitudes, beliefs, intentions) that characterize those adolescents who indicate a desire for pregnancy, and how pregnancy intentions influence later pregnancy may aid in efforts to reduce the negative health consequences of teenage childbearing in the United States.

We examined adolescent pregnancy intentions (likelihood and planning) and pregnancy (at 6-month follow-up) to answer the following research questions: (a) How do different ways of measuring pregnancy intention (planning and likelihood assessments) differ from one another, and is a combined measure a better predictor of subsequent behavior and outcomes?; (b) How do nonpregnant adolescent females who intend to become pregnant in the next 6 months differ in psychosocial variables from those who do not intend to become pregnant?; (c) Do baseline pregnancy intentions predict the likelihood of pregnancy 6 months later? The findings from this study may help to broaden our understanding of pregnancy intentions among adolescent females before conception and identify targets for intervention to prevent teenage pregnancies.

Methods

Participants and Recruitment

One hundred seventy-four female adolescents from a municipal sexually transmitted disease (STD) clinic and 214 from a health maintenance organization (HMO) clinic in Northern California were recruited between June 1996 and June 1998 [26]. The study's protocol was approved by the Institutional Review Board at the University of California, San Francisco. For both clinics, adolescents were recruited in the waiting area before their clinician visit. Adolescents' reasons for seeking care ranged from suspected STDs and contraceptive services to annual physical examinations. Eligibility criteria included: age = 14–19 years old, English-speaking ability, vaginal or anal intercourse in the preceding three months, and residence within the local metropolitan area. Participants were contacted and re-interviewed 6 months later. Over 90% of those who participated at baseline completed the follow-up.

Administration of Measures

Data were collected as part of a larger study examining perceived risk of STDs, perceived risk of pregnancy, and sexual decision-making [27]. After obtaining written informed consent, a research assistant conducted a structured interview with each participant in a private room and filled out corresponding questionnaires with the participants' answers to questions. The interview assessed demographics, perceived risk of STDs, attitudes toward condom use, perceived social norms regarding condom use, condom self-efficacy, and intentions to use a condom. The pregnancy attitudes/intention, oral contraceptive pill (OCP) attitudes, perceived risk of pregnancy, and abortion intentions items were included within this interview. Six-month follow-up interviews were conducted at the clinics from which participants were recruited. Participants were offered compensation of \$15.00 to participate in each interview.

Baseline Interviews

Selection of psychosocial variables was guided by the Theory of Planned Behavior [28].

Demographics—Participants indicated their age, gender, self-identified racial/ethnic group, and mother's educational attainment.

Pregnancy attitudes and intention—Attitudes toward pregnancy and pregnancy intention were assessed by scales developed for the current study. Three 5-point Likert scale items assessed: (a) how worried, (b) how upset, and (c) how happy an adolescent would be if she got pregnant in the next 6 months. A Total Pregnancy Attitudes Score was calculated by taking the mean of these three items (worried and upset items were reverse scored) ($\alpha = .82$). Higher scores on this measure indicated more positive attitudes toward pregnancy. Pregnancy intention was measured by two items (one for likely and one for planning) that assessed: (a) how likely she thought it was that she would get pregnant and (b) the degree to which she agreed that she planned to get pregnant in the next 6 months. Responses for these items were rated on 5-point Likert scales (ranging from "Not at all Likely"/"Definitely No" to "Extremely Likely"/"Definitely Yes"). All participants were asked if they were currently pregnant (at baseline)—none reported a known pregnancy at that time.

An *OCP attitudes* scale was created from a set of items assessing possible outcomes of using oral contraceptive pills (OCPs), using composite expectancy-value items by multiplying the expectancy for each item (e.g., "If you were taking the birth control pill every day, how likely is it to affect your menstrual period?") with its corresponding value (e.g., "How good or bad would it be if the pill affected your menstrual period?") and summing the products (α = .55). Higher numbers indicate more positive attitudes toward oral contraceptive pills. *OCP intentions* were measured by asking participants to indicate how likely they were and how sure

they were (separate items) that they would use the oral contraceptive pill in the next 6 months ($\alpha = .96$).

We measured *perceptions of risk of pregnancy* using newly developed items that included how likely participants thought they were to get pregnant in the next 6 months (a) if they used birth control pills every day, and (b) if they didn't use any form of contraceptive at all.

Participants' *abortion intentions* were measured by asking them to indicate how likely they were to have an abortion and how sure they were they would or would not have an abortion (separate items) if they became pregnant in the next 6 months ($\alpha = .97$). Abortion intentions were included to measure their potential influence on pregnancy intentions among adolescents.

Participants were asked how frequently they had *used contraceptive methods* (including OCPs, Nor-plant/Depo-Provera[®], diaphragms/cervical caps, vaginal suppositories, condoms, and withdrawal) in the past 6 months.

Six-month Follow-up Interviews

Six months later participants were asked to indicate: (a) if during the previous 6 months they had ever thought they were pregnant ("Yes" or "No") (Suspected Pregnancy), and (b) if they had taken a pregnancy test, the results of the test (positive or negative) (Pregnancy Test Results). If they reported a positive pregnancy test, participants were asked what they had decided to do about the pregnancy. Participants were again asked how frequently they had used contraceptive methods in the previous 6 months.

Data Analysis Plan

Responses to pregnancy plans and pregnancy likelihood items were dichotomized to contrast those who indicated "no intention to become pregnant" (not planning or not likely) from those who indicated "any intention to become pregnant" (planning or likely) in the next 6 months. We initially chose to examine pregnancy plans separately from pregnancy likelihood to highlight the possible differences associated with assessing pregnancy intention using each of these questions. We then created combination pregnancy intention groups using cross-tabs of the dichotomized pregnancy intention (plan/likely) items ("Planning and Likely," "Not Planning, but Likely," "Planning, but Not Likely," and "Not Planning and Not Likely"). However, because few females reported planning, but not likely, this group was dropped from further analyses. We conducted a series of one-way analyses of variance (ANOVAs) to determine psychosocial variables that would differentiate the remaining three intention groups. To determine if there were significant differences in pregnancy outcomes (suspected pregnancy and pregnancy test results) among the pregnancy intention groups, we conducted Chi-square analyses. All analyses were conducted using SPSS 10.0 software [29].

Results

Of the 388 females who provided baseline data, 354 (91.2%) returned for the 6-month follow-up interview. The participants ranged in age from 14 to 19 years with an average age of 16.84 (SD = 1.37). Of the total, 97 (27 $\frac{1}{2}$ %) were African-American; 72 (20.3%) were white; 60 (16.9%) were Latina/Hispanic; 57 (16.1%) were Asian American; and 68 (19.2%) were Mixed/ Other race/ethnicity. One hundred forty-seven (44%) of the adolescents' mothers had graduated from high school or less, 164 (46%) had attended or graduated from college, 6 (1.7%) had obtained an advanced degree (masters or doctoral), and 30 (7.5%) did not know their mother's educational attainment.

Comparing those adolescents who participated in the 6-month follow-up data with those who only provided baseline data yielded no significant differences in age, racial/ethnic composition,

or maternal education. Of the 354 who provided 6-month follow-up data, 159 (45% of the follow-up sample) had thought during the previous 6 months that they might be pregnant; 91 (25.7% of follow-up sample and 57.2% of suspected pregnancies) had taken a pregnancy test, and 33 (9.3% of sample and 36.3% of those who took a pregnancy test) had received positive pregnancy test results. Of those who reported a positive pregnancy test, 11 (33.3%) had decided to keep the pregnancy, 18 (54.5%) had decided to have an abortion, and 4 (12.2%) had experienced a miscarriage (Figure 1).

Pregnancy Intentions

Although the majority of the sample (76.5%) indicated *no plans* to become pregnant in the next 6 months, 66% of the sample indicated that there was at least some *likelihood* that they would become pregnant in the next 6 months. We developed cross-tabs and ran Chi-square analyses of participants' dichotomized responses to pregnancy plan and pregnancy likelihood items. We found that the pattern of responses to these two items were significantly different from one another ($\chi^2 = 50.39$, df = 1, p < .001).

Determinants of Pregnancy Intentions

Plan—A series of Student's *t*-tests were conducted to identify differences between those who indicated any pregnancy plans and those with no plans to be pregnant in the next 6 months (Table 1). There were ethnic group differences in planning; a larger percentage of African-American and Hispanic adolescent females indicated any pregnancy plans as compared with white, Asian, or Mixed/Other groups ($\chi^2 = 36.55$, df = 6, p < .001). Those who indicated any plans to become pregnant in the next 6 months demonstrated more positive attitudes toward pregnancy, lower assessments of the risk of pregnancy while using no contraceptives, weaker intentions to get an abortion, less contraceptive use in the previous 6 months at baseline, and weaker contraceptive intentions than those who indicated no plans to become pregnant in the next 6 months (Table 1).

Likelihood—As with those who had at least some plans to become pregnant, those who perceived any likelihood of becoming pregnant in the next 6 months differed from those who reported no likelihood of becoming pregnant in the next 6 months on pregnancy attitudes, perceived risk of pregnancy without using contraceptives, abortion intentions, and contraceptive use. Additionally, those who perceived any likelihood of becoming pregnant report weaker intentions to use condoms in the future than those who reported no likelihood of becoming pregnant in the next 6 months (Table 1). There were no ethnic group differences associated with perceived likelihood of pregnancy.

Combinations of Plan/Likelihood—To determine the interplay between pregnancy plans and pregnancy likelihood, we created pregnancy intentions groups, based on the combination of the dichotomized answers to intention items. The resulting groups were: (a) those who indicated that they were planning and likely to become pregnant ("Planning and Likely," n = 69/19.4%), (b) those who were not planning, but likely to get pregnant ("Not Planning, but Likely," n = 156/43.9%), and (c) those who were not planning and not likely to get pregnant ("Not Planning and Not Likely," n = 117/33%). The group who was planning, but not likely to become pregnant (n = 13/3.7%) was too small to include in the analyses. In a series of oneway ANOVAs we compared psychosocial variables that might differentiate the pregnancy intentions groups. There were significant differences in pregnancy attitudes, perceived risk of pregnancy using no contraceptives as well as abortion intentions and contraceptive use (Table 2).

In particular, it is interesting to note how those with inconsistent reports of pregnancy intentions ("Not Planning, but Likely") differed from those with clear pregnancy intentions ("Planning

and Likely" and "Not Planning and Not Likely"). Those with inconsistent reports of pregnancy intentions were less likely to be African-Americans and more likely to be white, reported less positive attitudes toward pregnancy, higher abortion intentions, and used contraceptives more than those who clearly intended to become pregnant. However, those with inconsistent pregnancy intentions also indicated more positive attitudes toward pregnancy, and less contraceptive use than those who clearly indicated no pregnancy intentions (Table 2).

Pregnancy Intention and Pregnancy Outcomes

To determine if those adolescents who indicated different combinations of pregnancy plans/ likelihood at baseline differed in their experiences of suspected pregnancy and/or positive pregnancy test results at 6-month follow-up, we ran Chi-square analyses (Table 3). Those who clearly indicated a desire for pregnancy ("Planning and Likely") were more likely to have a suspected pregnancy and a positive pregnancy test results than those who indicated inconsistent pregnancy intentions ("Not Planning, but Likely") and those who clearly indicated no pregnancy intentions ("Not Planning and Not Likely"). Additionally, those who indicated inconsistent pregnancy test results than those who clearly indicated no pregnancy intentions ("Not Planning and Not Likely"). Nearly a third of those who indicated inconsistent pregnancy intentions (30.2%) reported positive pregnancy test results in the past 6 months. Importantly, nearly 40% of those with inconsistent pregnancy intentions reported not using contraceptives every time they had sex. Additionally, more than 75% of those who reported positive pregnancy test results reported that they would be terminating or had already terminated the pregnancy (data not shown).

Discussion

This longitudinal study of sexually active adolescents gives us a unique perspective on adolescent beliefs, attitudes, values, intentions and behaviors surrounding the complex issue of pregnancy intention. Pregnancy intention has been studied retrospectively through interviews with women who are currently pregnant [4], who have recently given birth [17], or who present for pregnancy testing [13]. The value of the current study is that nonpregnant adolescents were interviewed at baseline about their plans and likelihood of becoming pregnant and they were prospectively followed for a 6-month period to assess whether they suspected that they might be pregnant, whether they took a pregnancy test and the results of that test. The analysis helps to estimate the value of pregnancy intention (characterized by pregnancy plans and likelihood) in predicting actual pregnancy. In the relatively short study follow-up interval, 45% of the female adolescents sampled reported they suspected they might be pregnant during the past 6 months, 26% were suspicious enough to take a pregnancy test, and almost 10% had a positive pregnancy test in the 6-month period.

Despite a majority of the teens expressing no plans to become pregnant in the next 6 months, there was tremendous variability in their assessments of the likelihood that they would become pregnant in the next 6 months. Although both planning and likelihood have been considered means by which pregnancy "intentions" are measured [6,8,11], it is clear that they do not represent unitary constructs to adolescent females before conception. It is possible that questions regarding female adolescents' *plans* for pregnancy reflect their sense of internal control regarding their reproductive intentions, whereas questions of adolescents' assessments of *likelihood* of becoming pregnant reflect their perceptions of external forces' influence on their immediate reproductive futures. One study of adolescents' judgments of vulnerability to pregnancy found that locus of control acted as a moderator of such judgments [30].

Another possibility is that those who indicate a disjuncture between their pregnancy plans and pregnancy likelihood are more ambivalent about their pregnancy intentions and are more

comfortable indicating that it is likely to occur than that they are planning to become pregnant [31]. A recent study found that adolescents' ambivalent pregnancy "attitudes" were associated with subsequent occurrence of a pregnancy one year later [32]. An alternative view is that inconsistency in responses between planning for pregnancy and likelihood of pregnancy does not reflect ambivalence about getting pregnant but about what is required to prevent pregnancy. In this view, the "inconsistent" adolescents are not necessarily wanting to get pregnant more than the "no planning, no likelihood" group, but are cognizant that they may not be as likely to use contraception for a variety of reasons. Thus, the same behavior (not using contraception effectively) may reflect lack of motivation to avoid pregnancy or lack of commitment to using contraception. Additionally, there were differences in reported pregnancy plans among those from various ethnic/racial groups with African-American and Latino/Hispanic adolescent girls reporting more pregnancy plans than Whites and Asian Americans. It is possible that these differences reflect cultural expectations for taking on adult roles and the different perceived future options for adolescents in these groups [33].

The variables that distinguished those who indicated pregnancy intentions from those who indicated no such intentions can be considered "markers" of stronger pregnancy intentions among adolescent females who are not currently pregnant and may represent targets of intervention.

Prediction of Pregnancy Outcomes

Using the combined measure of pregnancy intention (plans and likelihood) revealed differences in the intention groups on the outcomes of suspected pregnancies and positive pregnancy test results in predictable ways. Those who indicated clear pregnancy intentions ("Planning and Likely") were more likely to report suspected pregnancies and positive test results than those with inconsistent pregnancy intentions ("Not Planning, but Likely"). Those with inconsistent pregnancy intentions ("Not Planning, but Likely") were, in turn, more likely to report these pregnancy outcomes than those who clearly indicated no intention to become pregnant ("Not Planning and Not Likely"). Importantly, more than two-thirds of those with positive pregnancy test results, who reported inconsistent pregnancy intentions at baseline, indicated during the 6-month follow-up interview that they planned to, or had already aborted their pregnancy.

Limitations

Interpretation of our findings should take into account a number of limitations. We relied on self-report data that can be influenced by social desirability. In particular, the outcomes of interest (suspected pregnancy and positive pregnancy test results) may have been underestimates owing to self-report biases. Additionally, because our study sample was a sexually experienced adolescent group who attended an urban STD clinic or adolescent medicine clinic in an AIDS-epicenter, our results may not generalize to other adolescent populations who are not yet sexually active or who live in other geographical areas. Finally, because the original aims of the larger study did not include a focus on pregnancy intentions, per se, we were not able to characterize the adolescents in our sample with respect to all of the issues that might have influenced their pregnancy intentions (e.g., past experiences with pregnancy and/or abortion).

Conclusions

Given that the responses to questions of pregnancy plan and pregnancy likelihood were not always the same, assessing pregnancy intentions using a number of questions is important to capture the meaning of these different concepts for adolescent girls who are not yet pregnant, but at risk for pregnancy. Clearly, if clinicians or counselors simply ask adolescent girls if they are planning to become pregnant, they are likely to be missing important aspects of pregnancy

intentions that might be captured in also assessing their perceptions of likelihood regarding pregnancy.

Because those adolescents with inconsistent pregnancy intentions (i.e., not planning, but likely to become pregnant) report more suspected pregnancies and more positive pregnancy test results than those with clear intentions to avoid pregnancy, it is important to consider and intervene with this "at risk" sub-group of adolescent females, especially with respect to issues of the need for available emergency contraception, consideration of pregnancy termination, and/or preparation for a healthy pregnancy, delivery and baby. Adolescents who suspect they may have been pregnant in the past 6 months are at risk for becoming pregnant. Therefore, discussions regarding pregnancy plans and pregnancy likelihood may help focus counseling and educational efforts directed at these young women. Pregnancy likelihood and lower use of contraceptives at follow-up were strong predictors of positive pregnancy test results, suggesting a counseling intervention focused on adolescents' perceptions of the life circumstances that influence conception and contraceptive use may be beneficial.

Interventions to alter pregnancy intentions ought to focus particularly on the modifiable influences on pregnancy plans (i.e., attitudes toward condoms and pregnancy) and on assessments of pregnancy likelihood (i.e., self-efficacy to use condoms and attitudes toward pregnancy). Interventions aimed at enhancing condom and contraceptive self-efficacy and attitudes, providing more realistic views of the realities of pregnancy and childbearing, and encouraging greater contraceptive use in sexually experienced adolescent females could to reduce the occurrence of adolescent pregnancy.

References

- Henshaw SK, Feivelson DJ. Teenage abortion and pregnancy statistics. Fam Plann Perspect 2000;32:272–80. [PubMed: 11138863]
- Alan Gutmacher Institute. New York, NY: Alan Guttmacher Institute; 1999. Teenage Pregnancy: Overall Trends and State-by-state Information.
- 3. Henshaw SK. Unintended pregnancy in the United States. Fam Plann Perspect 1998;30:24–9. [PubMed: 9494812]
- Ahluwalia IB, Johnson C, Rogers M, Melvin C. Pregnancy Risk Assessment Monitoring System (PRAMS): Unintended pregnancy among women having a live birth. J Womens Health Gend Based Med 1999;8:587–9. [PubMed: 10839641]
- 5. Frost, JJ.; Oslak, S. New York, NY: Alan Gutmacher Institute; 1999. Teenagers' Pregnancy Intentions and Decisions: A Study of Young Women in California Choosing to Give Birth (occasional report).
- 6. Rubin V, East PL. Adolescents' pregnancy intentions: Relations to life situations and caretaking behaviors prenatally and 2 years postpartum. J Adolesc Health 1999;24:313–20. [PubMed: 10331837]
- 7. United States Department of Health and Human Services. Washington, DC: Government Printing Office; 2000. Healthy People 2010: Understanding and Improving Health.
- 8. Kalmuss DS, Namerow PB. Subsequent childbearing among teenage mothers: The determinants of a closely spaced second birth. Fam Plann Perspect 1994;26:149–53. [PubMed: 7957815]
- 9. Fischer RC, Stanford JB, Jameson P, et al. Exploring the concepts of intended, planned, and wanted pregnancy. J Fam Pract 1999;48:117–22. [PubMed: 10037542]
- Hellerstedt WL, Pirie PL, Lando HA, et al. Differences in preconceptional and prenatal behaviors in women with intended and unintended pregnancies. Am J Public Health 1998;88:663–6. [PubMed: 9551015]
- 11. Klerman LV. The intendedness of pregnancy: A concept in transition. Matern Child Health J 2000;4:155–62. [PubMed: 11097502]
- 12. Kost K, Forrest JD. Intention status of U.S. births in 1988: Differences by mother's socioeconomic and demographic characteristics. Fam Plann Perspect 1995;27:11–7. [PubMed: 7720847]

13. Sable MR, Libbus MK. Pregnancy intention and pregnancy happiness: Are they different? Matern Child Health J 2000;4:191–6. [PubMed: 11097507]

- 14. Sable MR, Wilkinson DS. Pregnancy intentions, pregnancy attitudes, and the use of prenatal care in Missouri. Matern Child Health J 1998;2:155–65. [PubMed: 10728272]
- 15. Rosenfeld JA, Everett KD. Factors related to planned and unplanned pregnancies. J Fam Pract 1996;43:161–6. [PubMed: 8708626]
- 16. Trussell J, Vaughan B, Stanford J. Are all contraceptive failures unintended pregnancies? Evidence from the 1995 National Survey of Family Growth Fam Plann Perspect 1999;31:246–7.
- 17. Joyce T, Kaestner R, Korenman S. On the validity of retrospective assessment of pregnancy intentions. Demography 2002;39:199–213. [PubMed: 11852837]
- 18. Joyce T, Kaestner R, Korenman S. The stability of pregnancy intentions and pregnancy-related maternal behaviors. Matern Child Health J 2000;4:171–8. [PubMed: 11097504]
- 19. Kaufmann R, Morris L, Spitz A. Comparison of two question sequences for assessing pregnancy intentions. Am J Epidemiol 1997;145:810–6. [PubMed: 9143211]
- 20. Melvin CL, Rogers M, Gilbert BC, et al. Pregnancy intention: How PRAMS data can inform programs and policy. Pregnancy Risk Assessment Monitoring System Matern Child Health J 2000;4:197–201.
- 21. Brown, SS.; Eisenberg, L., editors. Washington, DC: National Academy Press; 1995. The best intentions: Unintended pregnancy and the well-being of children and families.
- 22. Felice ME, Feinstein RA, Fisher MM, et al. Adolescent pregnancy—current trends and issues: 1998. Pediatrics 1999;103:516–20. [PubMed: 9925856]
- 23. Kost K, Landry DJ, Darroch JE. Predicting maternal behaviors during pregnancy: Does intention status matter? Fam Plann Perspect 1998;30:79–88. [PubMed: 9561873]
- 24. Pulley L, Klerman LV, Tang H, et al. The extent of pregnancy mistiming and its association with maternal characteristics and behaviors and pregnancy outcomes. Perspect Sex Reprod Health 2002;34:206–11. [PubMed: 12214911]
- 25. Phipps MG, Blume JD, DeMonner SM. Young maternal age associated with increased risk of postneonatal death. Obstet Gynecol 2002;100:481–6. [PubMed: 12220767]
- 26. Ellen JM, Adler NE, Gurvey JE, et al. Adolescent condom use and perceptions of risk for sexually transmitted diseases: A prospective study. Sex Transm Dis 2002;29:756–62. [PubMed: 12466716]
- 27. Ellen JM, Adler NE, Gurvey JE, et al. Has the perception of risk failed as a variable because it is too general? The case of sexually transmitted diseases. J Appl Soc Psychol 2002;32:648–63.
- 28. Ajzen, I. From intentions to actions: A theory of planning behavior. In: Kuhl, J.; Beckman, J., editors. Action Control: From Cognition to Behavior. Berlin: Springer-Verlag; 1985. p. 11-39.
- 29. SPSS for Windows. Chicago, IL: SPSS, Inc.; 1999.
- 30. Gerrard M, Luus CAE. Judgments of vulnerability to pregnancy: The role of risk factors and individual differences. Pers Soc Psychol Bull 1995;21:160–71.
- 31. Zabin LS, Astone NM, Emerson MR. Do adolescents want babies? The relationship between attitudes and behavior. J Res Adolesc 1993;3:67–86. [PubMed: 12318551]
- 32. Jaccard J, Dodge T, Dittus P. Do adolescents want to avoid pregnancy? Attitudes toward pregnancy as predictors of pregnancy. J Adolesc Health 2003;33:79–83. [PubMed: 12890598]
- 33. Labasan, LM. The Role of Childbearing Attitudes (dissertation). Palo Alto, CA: Pacific Graduate School of Psychology; 2000. The Onset of Sexual Intercourse in Asian American and Latino(a) Adolescents.

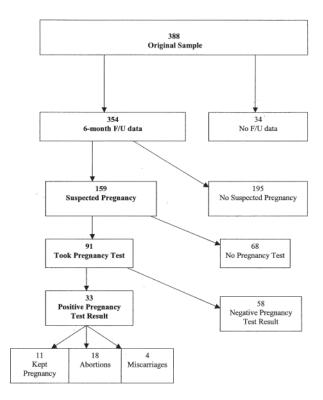


Figure 1. Flow chart of participant follow-up and pregnancy outcomes

NIH-PA Author Manuscript

NIH-PA Author Manuscript

NIH-PA Author Manuscript

Table 1Differences in Baseline Variables Between Those Who Intend (Plan or Likely) to be Pregnant (Any) and Those Who Do Not Intend (Plan or Likely) to be Pregnant (None) in the Next Six Months (n = 355)

	Pregnancy Plans	Figurs		
I	None (280)	Any (75)	None (121)	Any (225)
Demographics				
Age (mean years)	16.86 (1.4)	16.75 (1.3)	16.93 (1.3)	16.77 (1.4)
Race/Ethnicity				
African-American	64 (22.9%)	33 (44.0%)	25 (20.7%)	70 (31.1%)
White	68 (24.3%)	4 (5.3%)	29 (24.0%)	41 (18.2%)
Hispanic/Latino	44 (15.7%)	16 (21.3%)	21 (17.4%)	36 (16.0%)
Asian	53 (18.9%)	10 (13.3%)	24 (19.8%)	37 (16.4%)
Mixed/Other	51 (18.2%)	12 (16.0%)	22 (18.2%)	41 (18.2%)
SES (mother's educ.) (med.)	4.0	3.0	4.0	4.0
Individual variables				
Contraceptive attitudes	8.53 (4.9)	7.64 (4.6)	8.72 (4.9)	8.14 (4.9)
Pregnancy attitudes ^a	2.11 (0.9)	3.37 (0.9)	$1.88(0.9)^{**}$	2.60 (1.1)
Perceived risk of pregnancy				
Using OCPs	2.38 (0.9)	2.51 (0.9)	2.29 (0.9)	2.47 (0.8)
No contraceptives ^a	4.69 (0.6)	4.49 (0.8)	4.75 (0.6)	4.59 (0.7)
Perceived risk of STDs	50.12 (31.6)	47.33 (32.9)	49.04 (33.5)	49.54 (31.0)
Abortion intentions ^a	$3.60(1.5)^{**}$	2.18 (1.3)	3.58 (1.6)*	3.15 (1.6)
Behavioral variables				
Condom use	3.58 (1.6)	3.64 (1.6)	3.23 (1.7)	3.84 (1.5)
Condom intentions	3.09 (0.9)	2.90 (0.9)	3.20 (0.8)*	2.98 (0.9)
Contraceptive use ^a	4.23 (1.1)	3.54 (1.4)	4.51 (0.9)	3.90 (1.3)
Contraceptive intentions	3.13 (1.6)	2.66 (1.5)	3.19 (1.7)	2.94 (1.6)

 $^{^{\}it q}$ These variables distinguish both "planning" and "likelihood."

NIH-PA Author Manuscript

Baseline Comparisons Among Plan and Likelihood Combination Groups

		M (SD) or n (%)	
	Planning and Likely (n = 69)	Not Planning, But Likely (n = 156)	Not Planning and Not Likely (n = 117)
Age (years)	16.75 (1.30)	16.77 (1.40)	16.92 (1.29)
Race/ethnicity African-American. <i>ab</i>	31 (44.9)	39 (25.0)	23 (19.7)
White, ab	4 (5.8)	37 (23.7)	29 (24.8)
Hispanic/Latino	14 (20.3)	22 (14.1)	20 (17.1)
Asian	9 (13.0)	28 (17.9)	24 (20.6)
Mixed/Other	11 (15.9)	30 (19.2)	21 (18.0)
SES (parents' education) (median)	3.00	4.00	4.00
Contraceptive attitudes	7.75 (4.62)	8.31 (4.95)	8.82 (4.94)
Pregnancy attitudes, abc	3.43 (0.93)	2.24 (0.89)	1.87 (0.85)
Perceived risk of STDs	46.65 (33.27)	50.81 (29.98)	48.60 (33.53)
Perceived risk of pregnancy			
With OCPs	2.52 (0.85)	2.44 (0.79)	2.30 (0.96)
With no contraceptives b	4.46 (0.78)	4.64 (0.64)	4.74 (0.60)
Abortion intentions, ab	2.20 (1.34)	3.57 (1.46)	3.63 (1.54)
Condom use	3.57 (1.63)	3.98 (1.49)	3.18 (1.71)
Condom intentions	2.87 (0.87)	3.02 (0.85)	3.19 (0.84)
Contraceptive use, abc	3.53 (1.45)	4.07 (1.18)	4.52 (0.86)
Contraceptive intentions	2.68 (1.49)	3.06 (1.58)	3.22 (1.71)

All significant at p < .05 level.

 $^{\it a}$ Planning and Likely significantly different from Not Planning, But Likely.

 \ensuremath{b} Planning and Likely significantly different from Not Planning and Not Likely.

 $^{\mathcal{C}}$ Not Planning, But Likely significantly different from No Planning and Not Likely.

NIH-PA Author Manuscript

NIH-PA Author Manuscript

 Table 3

 Comparisons Among Baseline Pregnancy Plan/Likelihood Combination Groups and Pregnancy Outcomes (Suspected Pregnancy and Pregnancy Test Results)

	Planning and Likely	Not Planning, But Likely	Not Planning and Not Likely	RC
Pregnancy suspicions ^a n No Yes	69 25 (36.2%) 44 (63.8%)	156 81 (51.9%) 75 (48.1%)	117 80 (68.4%) 37 (31.6%)	OSENGARD
regnancy test resuns n Negative Positive	30 14 (46.7%) 16 (53.3%)	43 30 (69.8%) 13 (30.2%)	16 14 (87.5%) 2 (12.5%)	et al.

 $a^{2}\chi^{2} = 19.08, df = 2, p < .01.$

 $b_{\chi}^2 = 8.84, df = 2, p = .015.$