Continued and On-Time Participation in a Weekly Online Survey
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Introduction

We are conducting new research to investigate unintended pregnancies during the transition to adulthood. Investigation of these issues requires detailed, dynamic measures of relationships (including sexual behavior), contraceptive use, activities that compete with childbearing (including school and work), and community context. Our investigation also requires detailed, dynamic measures of beliefs, expectations, and willingness to engage in those and related behaviors. Available data resources for studying unintended pregnancy suffer from fundamental weaknesses, particularly retrospective reporting error. We have designed a new approach, a weekly online journal-based survey, to collect prospective measures to study these events. Our approach will provide new estimates of the prevalence of unintended pregnancy among young adults, new insights into the contexts producing unintended pregnancies among young adults, and new measurement strategies.

Our overarching question for this project asks how prevalent unintended pregnancy is during the transition to adulthood, and why. To advance our understanding of the processes leading to unintended pregnancy during the transition to adulthood, this project has four specific aims: (1) collect new detailed, dynamic measures of unintended pregnancy; (2) collect new detailed, dynamic measures of behavioral, attitudinal, and community context aspects of relationships (including sexual behavior), contraceptive use, pregnancy, and activities that compete with childbearing; (3) provide alternative estimates of the prevalence of unintended pregnancy based on new, prospective measurement strategies and directly compare these new prevalence estimates to those based on national studies; and (4) determine which attitudinal, behavioral, and contextual aspects of relationships, contraceptive use, and activities that compete with childbearing increase unintended pregnancy rates during the transition to adulthood. The new approach we employ is made possible by recent advances in computer assisted interviewing technologies that facilitate the collection of detailed weekly journal-based measures. This strategy allows us to document detailed dynamics over time in key domains of social life that are likely to change rapidly in early adulthood.

To meet the specific aims of our research, we are conducting a large-scale mixed-method data collection project with a cohort of approximately 1,250 18- and 19-year old women in a representative county in Michigan. After a 60-minute in-person baseline interview, the women are enrolled in a weekly journal-based survey for 2.5 years. The journal consists of a 5-minute web- or phone-based interview focused on the past week's experiences with contraceptive use and other behaviors, as well as prospective pregnancy intentions. The objective of the current paper is to evaluate weekly participation in the journal portion of the study, with a focus on the factors that contribute to continued participation and timeliness of journal completion.

Background

Although the United States experienced declines in unintended childbearing in the 1970s and early1980s, levels have recently risen, and the most recent national estimates indicate that approximately 35% of live births from 1997-2002 were unintended at the time of conception

(Chandra et al. 2005). Unintended childbearing is associated with a wide range of negative health statuses for children and mothers (Brown and Eisenberg 1995). In fact, the combination of these negative health statuses and rising levels of unintended childbearing led the U.S. Department of Health and Human Services (in its National Health Promotion and Disease Prevention Objectives) to target a substantial reduction in unintended childbearing in its objectives for both 2000 (formulated in 1990) and 2010 (formulated in 2000). According to data available from the most recent national estimates of unintended childbearing, the goal for 2000 was not met, and the goal for 2010 is not likely to be met either. Research that has addressed the social consequences of unintended childbearing suggests that they may be severe, may permeate multiple aspects of social life, and may persist for the very long term (Axinn et al. 1998; Barber et al. 1999; Baydar 1995; Brown and Eisenberg 1995).

The causal nature of the relationship between unintended childbearing and negative health statuses is the subject of some debate (Barber 2003; Barber et al. 2003; Barber and East 2003; Brown and Eisenberg 1995; Joyce et al. 2000, 2002; Korenman et al. 2002). Unfortunately, without random assignment of unintended births (experimental designs), it is impossible to determine causation with great certainty. Unintended births are drawn disproportionately from lower income mothers with less education. Thus, it is unclear whether the children would suffer negative outcomes regardless of whether their births are unintended. Some analyses featuring fixed-effects models suggest that perhaps these relationships are not causal, because siblings within the same family experience similar outcomes regardless of the intention status of their birth (e.g., Joyce et al. 2000). Although it is impossible to completely rule out this unobserved heterogeneity hypothesis, new evidence suggests that many of the consequences of unintended childbearing are likely to apply equally to all children in the family, not just the child born from the unintended birth (Barber 2003; Barber et al. 2003; Barber and East 2003). Thus, a family-level effect is to be expected – rather than an effect on only the child born from the unintended pregnancy. Unfortunately, as Joyce et al. (2000) suggest, the fixed-effects model strategy may not be an appropriate approach if the consequences of unintended childbearing that produce the relationship between unintended childbearing and child development are experienced by all of the children in a family. Thus, it seems likely that at least part of this negative association is causal.

While the debate continues to swirl around the consequences of unintended pregnancy, there is no debating the harmful health and social status consequences associated with it. Yet most scholars, caught up in the escalating discussion of cause and effect, have largely ignored a key question: why are unintended pregnancies so prevalent, and what, if anything, can social scientists do to better understand their occurrence? In fact, the high rates of unintended pregnancy are a major health and public policy concern, even if they have no causal consequences, because the occurrence of pregnancies to women who do not want them is itself a negative health outcome. For this reason, the United States' Office of Population Affairs operates the country's Title X family planning clinic program with the main aim of offering services to ensure that women do not have pregnancies they do not want (Alan Guttmacher Institute 2002; Frost 1996, 2001; Mosher 1990). A more comprehensive scientific understanding of unintended pregnancy is essential to the formulation of programs and related policies aimed at reducing unintended pregnancy.

Mismatches between intentions and behavior – such as an unintended pregnancy – are also of great theoretical interest. A long-standing body of theory in the social sciences argues that individuals' beliefs, attitudes, and intentions are an essential determinant of their behavioral

choices (Ajzen 1988; Fishbein and Ajzen 1975; Mead 1934). On the other hand, the confrontation between these intentions and the physical, social, or psychological constraints that prevent individuals from realizing their intentions is an equally longstanding topic of theoretical inquiry (Alexander 1989, 1990; Alexander et al. 1987; Coleman 1994; Giddens1984). Clearly individuals do not always choose, nor are they always able to act in ways that are consistent with their intentions (Bagozzi and Warshaw 1990; Grube and Morgan 1990; Liska 1984; Schoen et al. 1999; Wright 1998). Recent theoretical advances in the study of relationships among attitudes, intentions, and behavior explicitly recognize these constraints (Ajzen 1988, 1991; Ajzen and Madden 1986; Gibbons et al. 1995, 1998). Nevertheless, empirical evidence of the micro-dynamics connecting intentions, behavioral constraints, and behavior remains illusive. Investigation of unintended pregnancy has the potential to advance these theories because pregnancy-related attitudes and intentions must confront constraints related to relationships, sexuality, contraception, contraceptive failure, and activities that compete with childbearing, to determine actual pregnancy outcomes (Schoen et al. 1999). Investigating the detailed micro-dynamics of the social context of unintended pregnancy will provide significant new insight into these issues.

One of the major obstacles to scientific research on unintended pregnancy is the measurement of unintended pregnancy. Most study designs, such as that used in the National Survey of Family Growth (NSFG), feature a single cross-sectional interview with lifetime retrospective reporting. As a result, all measures of unintended childbearing are based on retrospective reporting of intention, contraception, happiness, and relationship status for pregnancies that occurred sometime before the interview, often years before the interview. Each of these important dimensions is subject to somewhat different levels of retrospective reporting error, but methodological research on surveys suggests that these errors will be substantial and significant (Groves et al. 2001; Schwarz and Sudman 1994; Sudman et al. 1996). Of greatest concern is that individuals alter their feelings to become more consistent with behavior (Festinger 1957; Williams et al. 1999), which may produce substantial underestimates of the true level of unintended childbearing. A second, closely related concern is that retrospective reporting severely limits the extent to which these studies can measure temporal dynamics in intentions/attitudes, relationship characteristics, or contraceptive use. In other words, existing measures of intentions, relationships, and contraception are limited to a single referent time point per pregnancy and do not measure how behavioral, attitudinal, and contextual aspects of relationships and contraceptive use may change directly before or after a pregnancy.

Longitudinal studies, which interview the same young women multiple times, address some potential shortcomings of the cross-sectional measures. The National Longitudinal Study of Adolescent Health (Add Health), the National Longitudinal Survey of Youth (NLSY), and the National Survey of Families and Households (NSFH) are all important alternatives to the cross-sectional measures of unintended pregnancy. Multiple interviews with the same young women at multiple times allow measurement of intentions, contraception, happiness about pregnancy, and relationship characteristics at one time point, followed by subsequent measurement of pregnancy. This design greatly reduces the risk of retrospective reporting error. Unfortunately, even in these designs, lengthy gaps between interviews greatly increase the chance of changes in the immediate context of pregnancy and retrospective reporting errors about that context. Without very frequent re-interviews, it is impossible to fully capture the temporal dynamics in intentions, contraception, happiness toward pregnancy, and relationship characteristics. The costs

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of face-to-face interviews prohibit frequent re-interviewing – an alternative strategy is a high scientific priority.

To address the critical limitations in existing measures of unintended pregnancy, we are intensively measuring these key processes. Specifically, we are collecting weekly journal-based attitudinal and behavioral measures of pregnancy, relationships, and contraceptive use, and conducting semi-structured follow-up interviews with young women who avoid pregnancy as well as those who become pregnant. These measures reduce the retrospective reporting period to one week, and capture the dynamics in attitudinal and behavioral aspects of relationships and contraceptive use during the early adult years, when both the instability and the risk of unintended pregnancy are at their peak. Relatively recent changes in the US population, such as widespread access to computers and the Internet as well as cellular and other telephone technologies, as well as recent advances in computer assisted interviewing technologies, have opened substantial new avenues for social and behavioral measurement (Couper 2005), such as electronic journaling. The electronic data collection journal we propose provides the flexibility to add contingent measures, based on specific events. So, for example, as a new relationship begins and changes, we can measure the different relevant dimensions of that relationship, including physical intimacy, time spent together, commitment, conflict, and couple identity. We believe that weekly measurement is the correct periodicity for several reasons. First, very frequent measurement is important to ensure accurate recall of coitus-specific methods, such as condoms. Second, NSFG Cycle 6 (2002) data suggest that more than 12% of women aged 18 to 22 years of age use multiple contraceptive methods per month, indicating high levels of instability and change. Third, previous diary studies suggest that high response rates are, in part, because the diary becomes part of the respondent's routine and is thus less likely to be forgotten (Halpern et al. 1994; Jaccard et al. 2004; Searles et al. 1995). In addition, not all questions are asked of every respondent each week. For example, attitude questions are rotated so that each is asked quarterly. Overall, a weekly measurement strategy balances the need for a routine with the costs of minimizing measurement error while not being overly-burdensome to respondents. While our study design greatly improves our ability to study unintended pregnancies, issues of concern remain, particularly attrition and timeliness of the weekly journal submissions, which is the focus of the current paper.

Data and Methods

Sample

Our sample consists of young women, ages 18-19, residing in a Michigan county. Their names and contact information have been obtained from public records. To be eligible in the recruitment phase of the study, the young women must be no younger than 18 and no older than 19 at the time they are first sampled. We have drawn our sample in five replicates, each of which is representative of the population. The approximate dates at which each replicate enters the field are: 1) March 2008; 2) July 2008; 3) November 2008; 4) March 2009; and 5) July 2009.

Study Design

An initial 60-minute face-to-face survey interview is conducted to assess important aspects of their family background; demographic information; key attitudes, values, and beliefs; current and past friendship and romantic relationships; education; and career trajectories. Women who complete the baseline interview are re-interviewed weekly for a period of approximately 2.5

years, to provide dynamic measurement of rapidly changing aspects of their lives, including relationships (described in detail below). We are also conducting semi-structured interviews with a subsample of respondents chosen based on information in the weekly surveys.

Once the in-person baseline interview is completed, all respondents are invited to participate in the weekly journal-based survey. The survey period for each respondent is approximately 2.5 years, and during that time each respondent can potentially complete up to 183 surveys (if they complete a new survey every 5 days). We know that most respondents will not complete 183, but we have designed the journal to offer as much flexibility and encouragement to respondents as possible – in an effort to motivate them to complete a high number of surveys during their 2.5 year period.

The first weekly survey, or journal 1, is conducted immediately following the baseline interview – in most cases, while the field interviewer is still in the respondent's home. Respondents are enrolled into the weekly data collection by the field interviewer – using a decision-making flow chart, the field interviewer works with the respondent to determine the mode the respondent will use to complete the survey each week (i.e., by telephone with an interviewer, by internet with the respondent using her own computer, or by internet using a laptop and dial-up connection provided to the respondent). The field interviewer completes journal 1 with the respondent, ideally using the same mode to which the respondent is assigned. So, if the respondent is assigned to the telephone mode, the field interviewer helps the respondent dial the toll-free study phone number and waits while the respondent completes journal 1 with the phone interviewer. If the respondent is assigned to an internet mode, the field interviewer assists them in logging on to the study web portal and completing their first journal. Given that access to computers and internet connections may change across the study period, respondents initially assigned to the internet (either using their own computer or a study-provided laptop) may, in any week, call the toll-free study phone number to complete their journal with an interviewer over the phone. Tailoring the data collection mode to the respondent's individual preference is our first step in reducing nonresponse – research clearly demonstrates that tailoring the mode to the respondent can powerfully reduce nonresponse (Groves and Couper 1998; Groves et al. 2004). However, even with mode tailoring and incentives ($35 for the baseline interview and $1 per weekly survey with $5 bonuses for on-time completion of five weekly surveys in a row), there is some failure to complete the weekly journals as well as some delayed completion. We have developed a strategy of successive follow-up in the case of non-completion, first through automated reminders and then personal contacts by phone, email, or letter (described below).

Five days after journal 1 is completed, journal 2 becomes "live". At this point, the respondent can access her journal 2 through the study web portal, or can call the toll-free study phone number and take her survey with a phone interviewer. Seven days after journal 1 is completed, an invite is sent to the respondent to complete journal 2 (if the respondent has not already completed journal 2 on her own). This invite is in the format requested by the respondent at the time of enrollment – email, cell phone text message, or both. Once a survey is completed, the next survey becomes live 5 days later, and an invite is sent 7 days later, and so on. If the survey is not completed on the day of the invite, a reminder email/text message is sent the next day. And, if the survey is not completed the day of the first reminder, a second reminder email/text message is sent the following day. If the survey still is not completed, a new invite is sent via email/text message 14 days after the last survey was completed, with reminders the next

day and following day if needed. This pattern of new invites sent every 7 days continues until an interview is completed and a new pattern begins.

In addition to the automated email/text reminder protocol, respondents who do not complete their surveys also receive a series of telephone, email, and letter reminders. If 10 days elapse since the last completed survey, phone interviewers attempt to contact the respondent by phone. If the respondent is reached, the phone interviewer attempts to complete the survey with the respondent at that time. If the respondent is unable to do the survey at that time, the phone interviewer reminds the respondent to do her own interview – giving her the study website or the toll-free study phone number to call at a later time. If an answering machine/voicemail is reached, the phone interview leaves a message for the respondent to visit the website or to call the toll-free number. If another person is reached (e.g., a parent, sibling, or roommate), a message is left for the respondent to call the toll-free number (the website address is never provided to anyone other than a respondent). If the respondent does not complete her survey on the 10th day, a second phone attempt is made on day 11 and a similar protocol is followed. If the survey still is not completed after these two phone contact attempts, phone and email contact attempts are made on day 12. At day 19, phone and email contact attempts are made again and a letter is also mailed. If 24 days have passed since the last completed survey, only a phone contact attempt is made. A refusal conversion packet that includes a letter and a study trinket (e.g., pen, chapstick, compact, pencil) is mailed if it has been 30 days since the last completed survey. Face-to-face contact with the field interviewer who conducted the baseline interview is attempted as a last resort.

We have completed the first replicate and are in the field with the second replicate. To date, we have completed 400 baseline interviews and 3,674 weekly surveys (between one and twenty-five per woman, depending on baseline interview date). Our experience indicates that our incentive scheme, coupled with the cooperative nature of this age group and their interest in the subject matter has resulted in extremely high cooperation rates. We anticipate a 90% response rate for the baseline interview, with the 10% consisting of respondents who are difficult to locate, and very few respondents declining to participate. Furthermore, weekly survey participation rates have thus far been phenomenal. Approximately 95% of the weekly surveys have been completed, another 1.8% are awaiting completion but not yet late, and 3.2% are currently late or missing. Our field and phone lab interviewers have developed an excellent rapport with the study respondents, and we expect that rapport to greatly contribute to our success in reducing nonresponse and attrition. Nevertheless, there are some respondents who have discontinued participation in the weekly surveys. In addition, while most respondents who are still completing the weekly surveys do so between 8 and 9 days after their last completed survey, there are some respondents who do so 10 days or later and some who do so more often than others. In order to improve our ability to obtain weekly measures, we need to better understand the factors associated with continued participation and timeliness of survey completion; this is the objective of the present analysis.

Measures

Continued Participation. Respondents are coded 1 if they are still participating in the journal-based surveys (i.e., respondents are less than 30 days late on their most recent journal) and 0 otherwise.

Timeliness of Survey Completion. We examine two measures of timeliness. The first variable is coded 1 if respondents have been late (defined as 10 or more days since last completed journal) on 25% or fewer of their completed journals and 0 if they are late on more than 25% of their completed journals. The second variable is coded 1 if respondents are never late on their completed journals and 0 if they have ever been late.

Sociodemographic characteristics. A select set of sociodemographic characteristics measured at the baseline interview are included in the current analyses. Age is coded in years. Race is coded as white, black, Native American, and Asian/Pacific Islander. Due to small numbers in the last two groups (see Table 1), the logistic regression model includes a dummy for black versus non-black. Ethnicity is a dichotomous variable, coded 1 if the respondent is Hispanic and 0 otherwise. Education is operationalized as the highest grade completed with those who completed 12th grade or less coded 1 and those who completed more than 12th grade coded 0. School enrollment includes the following categories: 1) not enrolled, 2) high school, 3) two year college, 4) four year college, and 5) vocational, technical or other. Employment status is a dichotomous measure, coded 1 if employed at the time of the baseline interview and 0 otherwise. A respondent is coded as receiving public assistance if she identified receiving at least one of the following: 1) WIC, 2) FIP, 3) cash welfare, or 4) food stamps. Respondents were also asked whether they had enough money at the end of the month. Response categories include: 1) some money left over, 2) just enough money to make ends meet, and 3) not enough money to make ends meet. Two non-mutually exclusive dichotomous measures are created from a question that asks the respondent who she is currently living with: 1) living with a parent or grandparent (1/0), and 2) living with a romantic partner (1/0). Family structure is based on information about who the respondent lived with while growing up and includes the following four categories: 1) both biological parents, 2) biological parent and step-parent, 3) single biological parent only, and 4) other situations. Parental income is measured as a dichotomous variable that is coded 1 if the parents' total household income in the past 12 months was $14,999 or less and 0 otherwise. Two continuous measures of religion are also examined: religious attendance (ranging from never to several times per week) and the importance of religion (ranging from not important to more important than anything else).

Sexual, contraceptive, and pregnancy experiences. Sexual, contraceptive, and pregnancy experiences as of the baseline interview are also investigated. A dichotomous indicator of ever having had vaginal sexual intercourse is included, as is a categorical measure of age at first sexual intercourse (14 years old or younger, 15-16 years old, and 17 years old or older). Lifetime number of sexual partners is collapsed into two categories: 1) one partner, and 2) two or more partners. Respondents who are currently using some method of birth control are coded 1 and 0 otherwise; similar coding is applied for those who have ever had sex without using birth control. Prior pregnancy experience is included as a three category variable: 1) no prior pregnancies, 2) one prior pregnancy, and 3) two or more prior pregnancies. We also include a dichotomous measure for currently pregnant as of the baseline interview (1/0).

Relationship characteristics. We include several characteristics of the relationship that respondents identified as current at the baseline interview. Relationship type is a three category measure for married, engaged, and dating. Age difference between the respondent and her partner is created by comparing their ages and is collapsed into the following categories: 1)

partner is 1-2 years younger, 2) partner is the same age, 3) partner is 1-2 years older, and 4) partner is 3 or more years older. A dichotomous indicator for racial difference between partners is included (1=respondent and partner are difference races and 0=otherwise). Length of the relationship is measured in months by comparing the relationship start date and the interview date. Dichotomous indicators for the following are also examined: ever had sex with the partner, ever talked about birth control with the partner, currently living with the partner, had a child with the partner, spend a lot of time with the partner, exclusive with the partner, and ever fought with the partner. Satisfaction with and commitment to the partner are continuous measures ranging from not at all to extremely. Power in the relationships is based on a question that asks who decides what to do or where to go (respondent, partner, or both).

Interviewer observations. At the end of the baseline interview, the field interviewer answered a series of questions about the respondent, her home, and the neighborhood where her home is located. A select set of measures is included in the current analysis. Interviewers assessed the attractiveness of the respondent's physical appearance and personality; response categories range from very unattractive to very attractive. Interviewers also assessed how well they thought the respondent would comply with the journal portion of the study, ranging from very poorly to extremely well. Measures about how concerned the interviewer felt for her safety and whether repairs were needed are also investigated; separate categories for "not observed" are included for situations where the interview was not conducted in the respondent's home.

Contact information and reminder mode. At the conclusion of the baseline interview, the field interviewer enrolls the respondent in the journal portion of the study by showing her how to do the first journal, which the respondent then completes on her own. In addition to information required for questions asked in subsequent weeks, such as relationship and pregnancy status, the first journal asks the respondent to provide a home number, cell number, and an email address. Dichotomous variables indicate whether the respondent provided each of these. Respondents also select the type of automated reminder they would prefer to receive: text message, email, or both. This is also included in the current analyses.

Journal changes. Respondents are asked several of the same questions across weeks in order to capture change, including whether they are still in a relationship, what the status of the relationships is, who the partners are, and whether they are currently pregnant or probably pregnant. This information is used to create three separate dichotomous change measures: 1) any change in relationship status (e.g., not in a relationship to dating), 2) any change in partners (Partner A to Partner B), and 3) any change in pregnancy status (e.g., not pregnant to probably pregnant).

Analytic Strategy

We begin by providing descriptive statistics of the sample of young women and their relationships as of the baseline interview. We then estimate logistic regression models for each of the three outcomes. All analyses are conducted using Stata/SE 10.0.

Preliminary Results

The first six tables provide a detailed description of the first 400 study respondents at the baseline interview and the first journal, as well as a brief summary of any changes experienced by the study respondents across the weekly surveys. The last table provides the bivariate logistic regression results of continued participation (less than 30 days late on the next journal) and two measures of timeliness (late on 25% or fewer of the journals and never late on any journals) on each respondent-level variable.

Table 1 presents the percentage distributions of a select set of sociodemographic characteristics. The majority of respondents are 19 years old, 40% are African American, and about 8% are Hispanic. About 60% of the respondents have completed 12th grade or less. Almost 13% of respondents were enrolled in high school at the time of the baseline interview, about half were enrolled in college, and less than a third were not enrolled in school. Almost half of the respondents were employed at the time of the baseline interview. Thirty percent of respondents reported currently receiving public assistance and over half reported having just enough or not enough money at the end of the month to make ends meet. Almost three quarters of the respondents lived with their parents or grandparents.

Table 2 presents the sexual, contraceptive, and pregnancy experiences of sexually active respondents (over 75% of the 400 respondents). About a quarter of respondents first had sex at the age of 14 or younger, 46% did so between 15 and 16 years old, and less than one third first had sex at 17 years old or older. Almost 20% reported having only one sexual partner and another 30% reported two or three, with the remaining reporting four or more lifetime sexual partners. Over half of the respondents were currently using some method of birth control at the time of the baseline interview and a similar percentage reported ever having had sex without using birth control. Almost 30% of respondents reported at least one previous pregnancy and slightly over 4% were pregnant at the time of the baseline interview.

Table 3 presents select characteristics of respondents' current relationship in the baseline interview (over 72% of the 400 respondents reported being in a relationship at the baseline interview). Almost 3% of respondents in a relationship were married to their partners and another 8% were engaged. One-quarter of respondents' relationships were with a partner who was the same age and almost 30% had partners who were three or more years older. Thirteen percent of partners identified were a different race than the respondent. Relationship length ranged from less than one month to over eight years with an average length of about 18 months. Almost 80% of the relationships involved sexual activity. Almost 20% of respondents were living with their partners at the time of interview. Twelve percent of respondents had at least one child with the partner. The majority of relationships were exclusive and both satisfaction with and commitment to partners was high (about 4 on a scale of 1 (not at all) to 5 (extremely). About two-thirds of the respondents had ever fought with their partner.

Table 4 presents the interviewer's assessment of the respondent, her home, and her neighborhood. Interviewers rated the majority of respondents as being physically attractive or about average. Most respondents' personalities were also rated to be attractive. Interviewers reported being concerned for their safety when they went to interview the respondent in about 5% of interviews. Interviewers said that the respondent's home needed repairs in about one third of the interviews. Interviewers felt that most of the respondents would comply very well or extremely well with the weekly journal portion of the study.

Table 5 presents information about the type of contact information the respondents' provided at the first journal and respondents' preferred type of automated reminder. About 75% of respondents provided a home number, over 80% provided a cell number, and a similar percentage provided an email address. The majority of respondents (42.7%) requested to be reminded about weekly journals via email only, over a quarter wanted to be reminded via text message only, and a similar percentage requested both types of reminders.

Table 6 presents a brief summary of the types of changes that are captured in the weekly surveys for those respondents who completed more than one weekly survey thus far (about 87% of the 400 respondents). Over 40% of respondents experienced at least one major relationship change (e.g., not in a relationship to dating). Over 20% of respondents changed partners at least once across weekly surveys. About 10% of respondents experienced at least one change in pregnancy status (e.g., not pregnant to probably pregnant). As of the last weekly survey completed by these respondents, 7.3% reported being pregnant and another 1.2% thought that they were probably pregnant (results not shown).

Table 7 presents the results of separate bivariate logistic regression models for each of the three dependent variables of interest on each respondent-level independent variable. The results for continued participation (less than 30 days late on next journal) are presented in the first column and the two timeliness measures, late on 25% or fewer completed journals and never late on any completed journals, are presented in the second and third columns, respectively.

Sociodemographic characteristics. Several sociodemographic characteristics of the young women are associated with the three outcomes. Although black respondents are no more or less likely to be still participating or late on 25% or fewer completed journals, they do have lower odds of never being late on all completed journals compared to non-black respondents. Compared to respondents with more than 12th grade education, those with 12th grade or less have lower odds of continued participation, late on 25% or fewer completed journals, and never being late on any completed journals. A similar pattern of association is found for not being enrolled in school compared to being enrolled in a four year college, which is associated with decreased odds of all three outcomes. Respondents who are enrolled in high school do not differ significantly from those who are enrolled in a four year college in terms of continued participation but do have lower odds of being on time. Respondents who reported receiving public assistance have lower odds of continued participation and timeliness. Compared to respondents who reported having some money left over at the end of the month, those who had just enough or not enough money have lower odds of timeliness only. Parental income, however, is not associated with any of the outcomes. Respondents who are living with their parents or grandparents are two times more likely to still be participating in the journal compared to those who are living in another situation but do not differ in terms of timeliness. Family structure is also associated with continued participation and timeliness. For instance, respondents who lived with a single parent while growing up are less likely to be still participating and less likely to have completed their journals on time.

Sex, contraception, and pregnancy experiences. Respondents who had ever had sexual intercourse have lower odds of continued participation and timeliness, however, the age at which first sex occurred does not differentiate respondents on any of the outcomes. Respondents with two or more lifetime sexual partners do not differ from those with only one in terms of continued participation but are less likely to complete their journals in a timely manner. Ever having had sex without birth control is negatively associated with timeliness. Respondents who were

pregnant as of the baseline interview have lower odds of still participation and of timely journal completion.

Relationship characteristics. A few of the characteristics of respondents' relationships are also associated with continued participation and timeliness of journal submissions. For instance, married respondents have much lower odds of still participating in the journal portion of the study compared to respondents who are dating. Respondents who have had sex with their partner have much lower odds of continued participation and of never being late on their completed journals relative to those who have not had sex with their partner. As the satisfaction with the partner increases, the odds of never being late also increase.

Interviewer observations. Respondents' physical and personality attractiveness are each associated with the outcomes but with somewhat different patterns. While physical attractiveness is not associated with continued participation, personality attractiveness is; those who were rated as having attractive and very attractive personalities are over two times more likely to still be participating compared to those who were rated as having about average personalities. On the other hand, while personality attractiveness does not differentiate timeliness of journal completion, physical attractiveness does with those on both ends of the spectrum (very unattractive/unattractive and very attractive) having higher odds of never being late. Journal compliance is associated with all three outcomes. For instance, respondents whose interviewers assessed them as doing extremely well on the journals are four times more likely than those assessed as doing fairly well to still be participating in the study. These respondents are also more likely to be late on 25% of fewer journals.

Contact information and reminder mode. Having provided an email at the first journal appears to be a very important indicator of continued participation and timeliness with those who did so being much more likely to still be participating and to be on time on journal submissions. While providing a cell phone did not differentiate continued participation, it did increase the odds of never being late on any journals.

In the final paper to be presented at the PAA conference, we will update all analysis to include additional respondents enrolled in the study between now and the end of the third replicate. We will also estimate multivariate logistic regressions. We will investigate additional respondent-level characteristics and attitudes and will also examine the extent to which events and changes that occur across weeks influence continued participation and timeliness (e.g., Does experiencing a break-up decrease the likelihood of continued participation in subsequent weeks? Does the start of a new relationship result in being late on the next weekly survey?) We anticipate estimating models of the hazard of attrition and late surveys using time-varying predictors from the weekly journals.

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Table 1. Sociodemographic Characteristics of Respondents at Baseline Interview, MSYW, 2008

	Percentage
Age	
18 years old	42.0
19 years old	48.5
20 years old	9.5
Race	
White	58.0
Black	40.0
Native American	1.7
Asian	0.3
Ethnicity	
Non-Hispanic	91.8
Hispanic	8.2
Highest grade completed	
12th grade or less	60.5
More than 12th grade	39.5
School enrollment and type	
Not enrolled in school	31.7
High school	12.8
2 year college	23.5
4 year college	26.0
Vocational/technical/other	6.0
Employment status	
Not employed	51.3
Employed	48.7
Receiving public assistance	
No	70.0
Yes	30.0
Enough money at end of month	
Some money left over	47.0
Just enough money to make ends meet	35.5
Not enough money to make ends meet	17.5

Table 1. Continued

	Percentage
Living with parents/grandparents	
No	28.0
Yes	72.0
Living with romantic partner	
No	85.0
Yes	15.0
Family Structure	
Two biological parents	44.5
One biological parent/one step parent	6.5
One biological parent only	23.2
Other	23.8
Parent's income	
$14,999 or less	13.8
$15,000-$44,999	24.5
$45,000-$74,999	16.0
$75,000 or greater	17.2
Don't know/Refused	28.5
Religious attendance	
Never	20.5
Less than once a month	21.0
Once a month	9.7
A few times a week	18.0
Once a week	18.0
Several times a week	12.3
Religious importance	
Not important	7.8
Somewhat important	31.5
Very important	35.7
More important than anything else	25.0
N	400

Table 2. Sexual, Contraceptive, and Pregnancy Experiences of Sexually Active Respondents at Baseline Interview, MSYW, 2008

	Percentage
Age at first sex	
14 years old or younger	23.2
15-16 years old	46.6
17 years old or older	30.2
Lifetime number of sexual partners	
One	19.5
Two	15.1
Three	16.8
Four	11.7
Five	11.1
Six or more	25.8
Currently using birth control	
No	46.0
Yes	54.0
Ever had sex without birth control	
No	44.3
Yes	55.7
Number of prior pregnancies	
Zero	69.5
One	18.8
Two or more	11.7
Currently pregnant	
No	95.6
Yes	4.4
N	298

Table 3. Characteristics of Respondents' Relationships at Baseline Interview, MSYW, 2008

	Percentage or Mean(Median)
Relationship type	
Married	2.8
Engaged	8.7
Dating	88.5
Age difference between partners	
Partner 1-2 years younger	9.0
Partner same age	24.9
Partner 1-2 years older	36.3
Partner 3+ years older	29.8
Race difference between partners	
No	89.9
Yes	13.1
Length of relationship (months)	17.85(11)
Ever had sex with partner	
No	20.4
Yes	79.6
Talked about birth control with partner	
No	25.6
Yes	74.4
Living with partner	
No	80.6
Yes	19.4
Had a child with partner	
No	87.5
Yes	12.5
Spend a lot of time with partner	
No	14.9
Yes	85.1
Exclusive with partner	
No	13.5
Yes	86.5
Satisfaction with partner	4.10(4)
Commitment to partner	4.47(5)
Power in relationship	
Respondent	11.1
Partner	1.7
Both	87.2
Ever fight	
No	36.0
Yes	64.0
N	289

Table 4. Interviewer Observations at Baseline Interview, MSYW, 2008

	Percentage or Mean(Median)
Respondent physical attractiveness	
Very unattractive	2.5
Unattractive	4.5
About average	38.8
Attractive	39.5
Very attractive	14.7
Respondent personality attractiveness	
Very unattractive	1.5
Unattractive	3.5
About average	30.3
Attractive	47.7
Very attractive	17.0
Interviewer concerned for safety	
No	89.5
Yes	5.3
Not observed	5.2
Repairs needed in respondent's home	
No	54.5
Yes	36.0
Not observed	9.5
Respondent journal compliance	
Very poorly	1.0
Poorly	4.5
Fairly well	24.3
Very well	49.2
Extremely well	21.0
N	400

Table 5. Contact Information Provided by Respondents and Preferred Automated Reminder Mode Requested at First Journal, MSYW, 2008

	Percentage or Mean(Median)
Provided home number	
No	24.3
Yes	75.7
Provided cell number	
No	16.4
Yes	83.6
Provided email address	
No	17.1
Yes	82.9
Type of reminder	
Text message	26.6
Email	42.7
Both	26.9
Missing	3.8
N	391

Table 6. Changes in Relationship Status, Partners, and Pregnancy Status among Respondents Who Completed More Than One Weekly Journal, MSYW, 2008

	Percentage
Any change in relationship status across journals	
No	58.3
Yes	41.7
Any change in partners across journals	
No	78.8
Yes	21.2
Any change in pregnancy status across journals	
No	90.4
Yes	9.6
N	345

Table 7. Bivariate Logistic Regression Results (Odds Ratios) of Continued Participation and Timeliness Dependent Variables on Each Respondent-Level Independent Variable

	Continued Participation	Timeliness	
	<30 days late on last journal	Late on 25% or fewer journals	Never late on any journals
Sociodemographic Characteristics (BL)			
Age (ref: 19 years)			
18 years	1.12	0.77	0.76
20 years	0.74	0.67	0.78
Race (ref: Non-black)			
Black	1.04	0.45	0.47**
Ethnicity (ref: Non-Hispanic)			
Hispanic	0.98	1.53	1.51
Highest grade completed (ref: >12th grade)			
12th grade or less	0.28***	0.50**	0.40***
School enrollment and type (ref: 4-year college)			
Not enrolled	0.46*	0.36***	0.34**
High school	0.50	0.43*	0.29**
2-year college	2.36	0.75	0.57
Vocational/technical/other	0.81	0.39+	0.39
Employment status (ref: Not employed)			
Employed	0.92	1.19	0.98
Receiving public assistance (ref: No)			
Yes	0.53*	0.40***	0.52*
Enough money at end of month (ref: Some left)			
Just enough to make ends meet	0.87	0.56*	0.54*
Not enough to make ends meet	0.57+	0.34**	0.38*
Living with parents/grandparents (ref: No)			
Yes	2.17**	1.20	1.10
Living with romantic partner (ref: No)			
Yes	0.68	0.48*	0.75
Family structure (ref: Two biological)			
Biological/step	0.50	0.56	0.32*
One biological only	0.49*	0.41**	0.35**
Other	0.53+	0.44**	0.36**
Parents' income (ref: >$14,999)			
$14,999 or less	0.51+	0.67	0.70
Don't know/refused	0.75	0.85	1.37
Religious attendance (Range: Never to several times per week)	0.99	0.94	0.86*
Religious importance (Range: Not important to more important than anything else)	0.93	0.88	0.81

Table 7. Continued

	Continued Participation	Timeliness	
	<30 days late on last journal	Late on 25% or fewer journals	Never late on any journals
Sex, Contraception, and Pregnancy (BL)			
Ever had sex (ref: No)			
Yes	0.36*	0.43**	0.38***
Age at first sex (ref: 15-16 years old)			
Never had sex	2.35*	2.18**	2.11*
14 years old or younger	0.80	0.82	0.63
17 years old or older	0.73	0.95	0.62
Lifetime number of sexual partners (ref: One)			
Never had sex	1.95	1.30	1.39
Two or more	0.66	0.48*	0.43*
Currently using birth control (ref: No)			
Yes	1.59+	1.47+	1.46
Ever had sex without birth control (ref: No)			
Yes	0.71	0.59*	0.54*
Number of prior pregnancies (ref: None)			
One	0.62	0.37**	0.46+
Two or more	0.24+	0.63	0.62
Currently pregnant (ref: No)			
Yes	0.99*	0.99**	0.99***
Relationship Characteristics (BL)			
Relationship status (ref: Dating)			
Not in a relationship	1.67	1.81*	1.20
Married	0.23*	1.15	1.78
Engaged	0.49	0.58	0.31
Age difference between partners (ref: Same age)			
Not in a relationship	1.05	1.08*	0.96
Partner 1-2 years younger	0.48	0.41+	0.79
Partner 1-2 years older	0.42*	0.40**	0.54
Partner 3+ years older	0.54	0.60	0.86
Race difference between partners (ref: No)			
Not in a relationship	1.84+	1.95**	1.20
Yes	0.79	1.32	0.66
Length of relationship (months)	0.99	1.00	1.01
Ever had sex with partner (ref: No)			
Not in a relationship	0.82	1.51	0.67
Yes	0.37*	0.76	0.43*
Talked about birth control with partner (ref: No)			
Not in a relationship	1.99+	2.27*	1.08
Yes	1.07	1.29	0.81
Living with partner (ref: No)			
Not in a relationship	1.87+	1.77*	1.27
Yes	0.93	0.71	1.01

Table 7. Continued

	Continued Participation	Timeliness	
	<30 days late on last journal	Late on 25% or fewer journals	Never late on any journals
Relationship Characteristics (BL) (cont.)			
Had a child with partner (ref: No)			
Not in a relationship	1.68	1.83*	1.18
Yes	0.45*	0.75	0.49
Spends a lot of time with partner (ref: No)			
Not in a relationship	1.21	2.03+	1.35
Yes	0.59	1.10	1.08
Exclusive with partner (ref: No)			
Not in a relationship	1.58	2.47*	1.68
Yes	0.81	1.37	1.39
Satisfaction with partner (Range: Not all to extremely)	1.24+	1.28+	1.50*
Commitment with partner (Range: Not all to extremely)	1.05	1.11	1.28
Power in relationship (ref: Both)			
Not in a relationship	1.79+	1.80*	1.20
Respondent or Partner	0.67	0.71	0.63
Ever fight (ref: No)			
Not in a relationship	1.66	1.67+	1.35
Yes	0.81	0.83	1.11
Interviewer Observations (BL)			
Physical attractiveness (ref: About average)			
Very unattractive/attractive	0.88	1.42	3.23*
Attractive	0.95	1.07	1.08
Very attractive	2.12	2.11*	2.18*
Personality attractiveness (ref: About average)			
Very unattractive/attractive	1.04	0.99	1.77
Attractive	2.19**	1.05	1.16
Very attractive	2.79**	1.58	1.64
Interviewer concerned for safety (ref: No)			
Yes	0.57	0.59	0.52
Not observed	4.33	1.52	0.69
Repairs needed on respondent's home (ref: No)			
Yes	1.01	0.68	0.87
Not observed	2.75	1.29	0.84
Journal compliance (ref: Fairly well)			
Very poorly/poorly	1.38	1.07	1.59
Very well	2.53**	2.24**	2.13*
Extremely well	4.37**	2.85**	1.85

Table 7. Continued

	Continued Participation	Timeliness	
	<30 days late on last journal	Late on 25% or fewer journals	Never late on any journals
Contact Information/Reminder Mode (J1)			
Provided home number (ref: No)			
Yes	1.48	1.33	1.01
Provided cell number (ref: No)			
Yes	1.61	1.02	2.24*
Provided email address (ref: No)			
Yes	4.19***	3.63***	2.52*
Type of reminder (ref: Both)			
Text message	0.62	0.75	1.06
Email	0.76	1.00	0.82
Missing	0.33+	0.07*	0.22
N	391	345	345

Notes: These are the results of separate bivariate regressions; each independent variable is included in a separate regression model. BL=Baseline Interview. J1=First Journal.
$+ p \leq 0.10$; $* p \leq 0.05$; $** p \leq 0.01$; $*** p \leq 0.001$