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The Role of Mental Health Factors, Behavioral Factors, and Past Experiences in the Prediction of Rapid Repeat Pregnancy in Adolescence

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Abstract

Purpose—This study investigates the predictors of rapid repeat pregnancy (subsequent pregnancy within 24 months of previous pregnancy outcome) in a sample of urban adolescents.

Methods—Adolescents aged 12 to 19 years (N = 354) who were predominantly African American (94.1%) completed individual interviews during pregnancy and at 24 months post-partum. Logistic regression was used to determine the relationship between mental health factors, behavioral factors, and negative life experiences in the prediction of rapid repeat pregnancy.

Results—Forty-two percent (N = 147) of adolescents reported a rapid repeat pregnancy. Baseline reports of later age at menarche (12.43 vs. 11.91; p = .003) and a greater likelihood of aggression were significantly associated with having a rapid repeat pregnancy within 24 months. Age at

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Explanation of Author Contributions

C.P. Crittenden was the primary author and responsible for the whole content of the manuscript, including substantial contributions to conception and design of study, statistical analysis, interpretation of data, drafting the manuscript, and critical revision of the manuscript.

N.W. Boris assisted in the conceptual design of the study, reviewed and provided critical feedback of manuscript drafts, and assisted in portions of the writing.

J.C. Rice assisted in the conception of the data analysis plan, assisted with interpretation of data, and reviewed and provided critical feedback of manuscript drafts.

C.A. Taylor assisted with portions of the writing pertaining to research methods as well as reviewed and provided critical feedback of manuscript drafts.

D.L. Olds is responsible for acquisition of the original data, critical revision of the manuscript, and reviewed and provided feedback of manuscript drafts.

menarche and self reported aggression contributed independently to the prediction of a closely spaced second pregnancy ($p<.05$).

Conclusions—It is suggested that pubertal onset and individual mental health as it relates to measures of aggression should be considered when developing programs targeting adolescents at highest risk for rapid repeat pregnancy.

Keywords

Adolescents; Rapid repeat pregnancy; Pregnancy risk; Subsequent childbearing

Introduction

Despite declining birth rates over the past few decades, the United States continues to have the highest teenage pregnancy rate of all industrialized nations [1]. Repeat pregnancy among adolescent mothers, in particular the correlates and consequences of closely spaced pregnancies, have not been well researched. Repeat pregnancy may co-occur with other problems such as poor academic achievement [2] and economic hardship [3]. Further, early teen sexual activity and unintended pregnancy often cluster with other risk taking behaviors such as substance use and delinquent behavior [4].

Mothers who are extremely young and living in poverty are at highest risk for consequences related to closely spaced pregnancies [5]. Compared to older mothers, adolescent mothers are less likely to receive adequate prenatal care [6], with multiparous adolescents being at higher risk for micronutrient depletion both during and after pregnancy [7]. It is those adolescents that have a *rapid repeat pregnancy* with shorter *interpregnancy intervals* that may be at greatest risk for adverse health outcomes. *Rapid repeat pregnancy* (RRP) is defined as a subsequent pregnancy occurring within 24 months of the previous pregnancy outcome (or having an interpregnancy interval ≤ 24 months) [8,9]. The *interpregnancy interval* (IPI) comprises the period between the delivery of a live birth and the conception of the subsequent live birth, typically measured in months [10].

In 2002, nearly one in five births to adolescent mothers was a second order birth or higher, though analysis of how many pregnancies actually occurred within 24 months is unavailable [11]. The incidence of RRP appears to be highest in the youngest teens (11–16 years), with approximately 23–26% giving birth to a second child within two years following delivery of their first child [12]. Older teens (17–19 years) are also at high risk for a RRP with about 21% becoming pregnant again within 24 months [9]. The most important groups to study further are urban, minority teen mothers, as RRP in this group may have particularly serious effects for both young mothers and their offspring [5]. African American adolescents, in particular, are more likely than Caucasian adolescents to begin childbearing during the teen years [13] with the incidence of subsequent pregnancy occurring approximately 24 months from initial pregnancy resolution [14]. Among urban African American adolescents, external risks are often more salient such as poverty, drug infested neighborhoods, and increased crime, which may limit access to health care, affect the need for public assistance, and impact health of the young mother and child [15].

Social Predictors of Rapid Repeat Pregnancy

Empirical evidence regarding the predictors of RRP in adolescence is limited. Previous studies, however, have identified several socio-demographic or contextual factors which are associated with RRP. Early age at first birth [16,17], being married as a teen [14], an intended first pregnancy [18], and poor initial birth outcome (abortion, stillbirth, or miscarriage) [19] have each been linked to RRP. Data also reveal that low educational achievement [20], lack of

contraceptive use [21], and regular use of alcohol or drugs [22] may further contribute to RRP. Finally, teens that have poor family involvement [8], low levels of parental education (primarily maternal) [17], and have mothers who experienced a teen pregnancy [23] may also be at increased risk for RRP.

Longitudinal data on socio-demographic predictors of RRP are lacking. More studies have identified early age at first pregnancy as associated with RRP than any other single factor [8, 9,16]. While conflicting reports exist as to what defines "early" (i.e., 15, 16 or 17 years or younger), becoming pregnant once while a teen, at any age, may represent a critical marker for a closely spaced second pregnancy. Teens are less likely to possess self-regulated competence [24] and more likely to act relative to the present, making it difficult for them to perceive long-term outcomes of risk behavior based on individual judgment alone [25]. By focusing on the determinants of the first teen pregnancy, alternative explanations for RRP may be found.

Mental Health, Behavioral, and Experiential Factors

It is well established that antecedent mental health, behavioral, and experiential factors such as anxiety [26], depression [27], aggression [28], childhood trauma [29], and childhood abuse (physical and sexual) [30] are associated with an initial teen pregnancy. However, linkages between mental health and experiential factors with RRP are less understood, as these factors are rarely included in research on RRP. Only one longitudinal study from the last decade revealed a significant association between prior behavior and repeat pregnancy in adolescence [31]. Within a primarily African American sample, Miller-Johnson and colleagues (1999) found that girls who displayed stable patterns of aggressive behavior from third to fifth grade were at increased risk for pregnancy during adolescence, had more children, and were younger when they had them; on average aggressive girls had twice as many children as non-aggressive girls [31]. These results were consistent with an earlier longitudinal study that was the first to prospectively analyze childhood aggression in relation to both the timing and frequency of later adolescent childbearing [32]. However, neither study examined spacing of pregnancies or examined aggressive tendencies of the girls prior to pregnancy. There is a need to focus more attention on identifying specific risk factors for RRP among adolescents using longitudinal studies.

Research Objective

This study was designed to prospectively examine a wide range of predictors of RRP among a high-risk group of adolescents. Notably, where most previous research on RRP has been retrospective or cross-sectional in design, this study utilizes longitudinal data. Whereas others have generally studied the effects of mental health and experiential variables on an early first pregnancy, it is hypothesized that one or more of the following will predict RRP: (1) mental health factors, (2) behavioral factors (including aggression proxies, substance use, and birth control use), and (3) past life experiences (inclusive of childhood abuse history, prior pregnancy with poor outcome, and foster care history).

Methods

Sample

The study subsample (n = 357) was drawn from an existing longitudinal dataset gathered over a 2 year period. Baseline data was collected from June 1, 1990 through August 31, 1991 as part of the Memphis trial of the Nurse-Family Partnership [33]. Eligibility criteria included adolescents who were aged 19 years or younger, were less than 29 weeks gestation, had no previous live births and, had at least 2 socio-demographic risk characteristics (unmarried, <12 years education, or unemployed). The subsample for this study included only adolescents who

were randomized into a control group and received no nurse home visitation services. All data were collected by research staff following informed consent. Data were collected at registration (prior to randomization) and 24 months post-partum. The analyses reported in this article are based on the adolescents for whom complete 24 month follow-up data were available (n = 354). One participant had missing outcome data for subsequent pregnancy post-partum and was excluded, and two young women were lost to follow-up. Original Human Subjects approval was granted through the University of Rochester's Research Subjects Review Board on July 2, 1990. Additional approval for the present analysis was granted by the Tulane University Health Sciences Center.

Measures

Rapid Repeat Pregnancy—For this study, in accordance with previous research, RRP was defined as any pregnancy occurring within 24 months of the previous pregnancy outcome (inclusive of abortion, miscarriage, still birth, or live birth) [8,9]. At the 24 month post-partum interview, participants were asked questions pertaining to the number and outcome of subsequent pregnancies. The dates on which their first pregnancy ended and subsequent pregnancy began were recorded. The interpregnancy interval was calculated in months. All adolescents reporting a subsequent pregnancy and having an IPI of ≤24 months were coded as having a RRP. RRP is the only variable for this study that was assessed at 24 months. All of the other variables were assessed only at baseline (i.e., at the time of entry into the cohort).

Potential Predictors of RRP assessed at Baseline

Mental Health Factors: Three mental health indicators were assessed by interview at baseline: 1) good mental health index, 2) anxiety, and 3) depression. These indicators were taken directly from the 38-item version of the RAND Mental Heath Inventory (MHI) [34]. Responses to all items were assessed with a Likert-type scale ranging from 1 = *all of the time* to 5 = *never* and refer to the previous 30-day period; however, one question (How happy, satisfied, or pleased have you been with your personal life during the last thirty days?) was scored using a 6 point scale, ranging from 1 = *extremely happy* to 6 = *extremely unhappy*. Nineteen of the 38 items were reverse scored so that higher values indicated a higher level of the construct measured. Extensive examination of reliability and validity has been performed for this instrument [35]. Internal consistency, as documented in previous studies measured by Cronbach's alpha, ranged from 0.63 – 0.93 for subscales and 0.90 – 0.97 for higher order scales [36].

The mental health index score was created by calculating the average of all non-missing values (out of 38 items total) (higher score = better mental health functioning). The scores for anxiety and depression reflect the participant's average subscale score for that construct (higher score for the anxiety or depression subscale = more anxious or depressed). The anxiety subscale was comprised of 10-items, whereas the depression subscale had 9-items. In this study, Cronbach's alpha coefficient for the total score (mental health index) = 0.95, anxiety subscale = 0.86, and depression subscale = 0.83.

Aggression Proxies: Proxies for aggression were made up of six physical conflict items that were originally part of a larger, comprehensive assessment of participant self-efficacy across multiple domains of the Bandura theory [33]. Each was measured using a four-point Likert scale. Factor analysis during measure development suggested that these items were related and this scale has been used previously with a primary adolescent sample. For analytic purposes, each item was treated independently. Two items regarding the use of physical violence ranged in score from 1 = *none/not at all* to 4= *very/a great deal* (e.g. How likely are you to settle differences with people close to you without hitting, pushing, or getting physical with one another?); Cronbach's alpha = 0.72. Two additional items asked participants to indicate how much they agree with a particular statement (e.g., Sometimes people must use physical force

to let others know just how important something is to them; Cronbach's alpha = 0.72). Responses for these two items ranged from 1 = *strongly agree* to 4 = *strongly disagree*. The last two items assessed participants propensity to hit or push (e.g. How much [would/do] people close to you provoke you to hit or push [if you didn't want to]?); Cronbach's alpha = 0.72 and 0.74. These two items ranged in score from 1 = *none* to 4 = *a great deal.*

Substance use was assessed using 4-items with yes or no response options; 1) alcohol use in the past 14 days, 2) alcohol use during pregnancy, 3) cigarette use in the past 3 days, and 4) any drug use during pregnancy (inclusive of marijuana, crack, cocaine, amphetamines, LSD, PCP, hallucinogens, heroin, and other street drugs).

Negative Life Experiences: Three measures gathered at baseline were used to assess participants' past experiences. The first measure assessed whether the participant had experienced any contact abuse, physical or sexual during childhood. The second measure consisted of one item asking participants if they ever had a prior pregnancy with poor outcome (any pregnancy not ending in live birth). The third measure assessed foster care history: did you ever live in a foster home before age 13?

Birth control use: As reference point to gauge when pregnancy risk began, participants were asked at baseline to recall the month and year of their first period and month and year of first intercourse. Based on which experience happened first, participants were asked the following question: Since (month/year of first period or first intercourse, dependent on which occurred first) have you or any partner ever used birth control together? For those who said "yes," frequency of birth control use was assessed on a 5-point Likert scale (ranging from 1, *once in a while* to 5, *every time*).

Socio-demographic Factors: Fourteen variables describe the socio-demographic background of study members. Data were collected through a face to face interview at baseline. Participant's current age at intake and ethnicity were the first two measures. Household size was determined by how many people lived in the house and slept there at least four or more nights a week. The participants' status as head of household and whether or not she lived in government subsidized housing were also assessed. Discretionary household income was calculated by using subsistence standards for determining Medicaid eligibility in Tennessee. Education level, reflective of the highest grade in school the participant completed, was recorded. The education level of the participant's mother was documented. Because many participants were not able to be specific about the number of years of education obtained by their mothers, a categorical variable was formed that grouped participants' mothers' education level into three categories: more than high school, less than high school, and don't know. Information also was obtained regarding the participant's age at first sexual intercourse and age at first menstruation. Participant's employment status and whether or not her parents lived apart prior to age 13 also was measured. Lastly, the number of children born to the participant's mother and a measure of maternal support were collected. Maternal support was calculated as an average score of 7 positive social support items with responses from a 4-point Likert scale (e.g. How likely is it that she will go with you to the hospital when you are ready to deliver? 1 = *extremely unlikely*, 2 = *unlikely*, 3 = *likely*, 4 = *very likely*).

Statistical Analysis

Bivariate analyses were performed to determine whether differences existed between adolescents who reported a RRP and those who had only one pregnancy. The independent t test was used to assess continuous variables and Pearson's chi-square test was used for categorical variables. In order to explore the independent effect of predictor variables on the likelihood of RRP, binary logistic regressions were conducted. Initially, three full main effects

models (FME) were constructed in which all relevant predictor variables were entered into the model simultaneously. Model 1 included socio-demographic factors. Model 2 included good mental health index, anxiety, depression, aggression proxies, substance use, and birth control use. Model 3 included any contact abuse (physical or sexual) during childhood, prior pregnancy with poor outcome, and foster care history. Following the generation of the three FME models, forward stepwise modeling was used within each mode, first constructing a constant-only model (without any predictors), and then at each step adding the predictor with the largest Rao's efficient score statistic to the model, so long as the p value was less than p = 0.05. For all analyses, SPSS statistical software was used (version 14, SPSS Inc, Chicago, IL).

Results

The mean age of participants at baseline was 16.64 years (range 13–19 years; SD = 1.50); 94.1% of participants were African American. Approximately 44% came from households whose family was living below the subsistence cost for a family of that size. Nearly all participants were unemployed (92.4%) and on average had a ninth grade education. Table 1 shows the sample separated into two groups according to RRP status by 24 months post-partum (n = 354).

Within 24 months of their previous pregnancy experience, 147 adolescents age ≤ 19 years at the time of first birth (41.5%), reported having at least one RRP. Among all the socio-demographic variables studied, bivariate analyses revealed the two groups to have few differences. The only variable for which the two groups differed significantly was age at first period (t = −3.01, p = .003). Adolescents who reported only one pregnancy began their period half a year earlier on average than those who reported a RRP.

Table 2 compares those who had rapid repeat pregnancies versus those who did not according to mental health and past experience variables. Bivariate analyses revealed significant differences between these two groups only in the area of aggression. Specifically, rapid repeaters were less confident in their ability to settle differences with people close to them without using force (t = 2.30, p = .022), agreed more often that sometimes people must use physical force to show importance (t = 2.35, p = .019), and felt more provoked by others to hit and push if they didn't want to (t = 2.00, p = .046).

After constructing the first FME model comprised of socio-demographic factors only, age at first period (Wald $\chi^2 = 5.25$, p< .05) and participant level of education (Wald $\chi^2 = 4.76$, p< .05) were significant. However, as shown in Table 3, the only variable that significantly predicted the likelihood of RRP after stepwise modeling was performed was age at first period.

Significant predictors within the second FME model initially included depression (Wald $\chi^2 = 3.68$, p = .05), number of days participant used drugs during pregnancy (Wald $\chi^2 = 3.97$, p = .05), and one aggression proxy (*Sometimes people must use physical force to show importance*, Wald $\chi^2 = 3.79$, p = .05). However, stepwise modeling revealed that two measures of aggression were significantly related to RRP (see Table 4); depression and the number of days participant used drugs during pregnancy dropped out of the model. In the third FME model, no negative life experience variables appeared significant in either the FME model or after performing forward stepwise modeling.

Discussion

Self-reported efficacy and attitudes about aggression and also age at first period were the two significant predictors of rapid repeat pregnancy in this sample of urban, African American adolescents. Of particular importance is that adolescents who had rapid repeat pregnancies were less confident in their ability to settle differences without the use of physical force. Rapid

repeaters also agreed more often than non-repeaters that people must use physical force to show importance.

Findings from this study support and add to previous work documenting the role of aggression as a predictor of repeated childbearing [31,32]. The present study, which makes use of a prospective, longitudinal dataset, highlights the importance of aggression as a powerful marker for later high–risk outcomes for adolescents such as RRP. Our data adds to the literature suggesting that measures of aggression should be included in longitudinal studies on the determinants of subsequent pregnancy risk in adolescence. Our data in light of previous studies also suggests that aggression may be a valid clinical indicator for identifying those at highest risk for rapid repeat pregnancy.

Given the social and biological risks associated with RRP among adolescents, it seems reasonable to enhance prevention efforts by targeting adolescents who exhibit lower self-efficacy about aggressive behavior, favorable attitudes toward aggressive acts, and who already have one or more children. An alternative approach might be to target aggressive pre-teens in hopes of delaying initial pregnancy. Longitudinal studies utilizing peer reported sociometric ratings in the school setting have proven successful in identifying aggressive students [31, 38].

A secondary finding was that the average age of first menarche was significantly later (12–13 years) for those who had a RRP compared to those who did not. Prior related research has investigated the link between menarche and timing of first pregnancy. Such research, in contrast to our findings, suggests that early (precocious) menarche (</= 11 years) is associated with sexual risk taking behavior and initial pregnancy risk [39]. Our finding linking late menarche and RRP appears to be unique. It may be that for these young women (age ≤ 19 years) perception of pregnancy risk might be altered without the presence of a period, resulting in more unprotected sexual behavior [40]. The current findings suggest that additional studies are warranted to further explore the relationship between menarche and RRP. Further, preventive interventions need to be sensitive to both individual and personal factors that may influence perceived risk for subsequent pregnancy such as onset of menarche.

The lack of statistically significant associations between RRP and any of the experiential factors, such as history of abuse and prior pregnancy with poor outcome, and other mental health and behavioral factors such as substance use and depression was unexpected. This lack of findings may be due to several limitations of the study. Although the data from which the current analyses were drawn were collected in the 1990s, this data set captures a distinctive population comprised of those who are demographically at-risk for RRP. The data used was prospective and longitudinal, for which many studies on subsequent pregnancy are not. However, the sample, though not particularly small, was extremely homogeneous across all socio-demographic variable categories. Findings from this study, conducted among a predominately African American sample, may not be generalizable to larger populations with more diverse ethnic and socio-economic backgrounds. In addition, the self-report data may have been subject to both social desirability bias and recall bias on mental health and experiential items. Such biases may result in an underestimation of adolescent's actual feelings or experiences. Confounding by unmeasured variables may have influenced the true association of predictor variables with RRP. Lastly, some caution must be used in interpreting these results. Given the number of statistical tests conducted in these models, it is possible that a significant difference was detected by chance alone. Therefore, we consider our findings suggestive.

Additional variables of interest should be considered when designing future studies: pregnancy intent, partner influence, and age at which participant's mother had her first child. Recent data

suggest that taking into consideration intention of pregnancy with regards to RRP may help in designing effective targeted interventions [18], though defining pregnancy intent is difficult and standardized measures of pregnancy intent are still in development [41]. Likewise, researchers have documented links between the desires of adolescent mothers in committed relationships [42] or with older partners [43] to want a second child. By incorporating variables that assesses boyfriend or partner influence to survey instruments used with pregnant or parenting teens, researchers may gain a better understanding as to the decision-making process in the relationship. Finally, inclusion of family factors, such as pregnancy history of the adolescent's mother, may also lend insight into maternal acceptance of an initial pregnancy and the teen's perceived benefits of having another child.

The lack of randomized, controlled studies documenting impact of universal preventive approaches to curb of teenage pregnancy suggests a new approach might be warranted. Prevention of RRP could provide a sharper focus for intervention. The focus on targeting prevention is especially important given compelling arguments that early pregnancy is adaptive in some groups [44,45]. By tailoring research efforts towards a better understanding of those at risk for RRP, social dependence and poor birth outcome among adolescent mothers may be reduced.

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Table 1

Socio-demographic characteristics of rapid repeaters at baseline

	Rapid repeat pregnancy status by 24 months post-partum		
Measure	**Yes (n = 147) Mean (SD)**	**No (n = 207) Mean (SD)**	**P value**
Age (yrs)	16.72 (1.45)	16.59 (1.67)	.447
Household size (# of persons)	4.44 (1.73)	4.37 (2.06)	.761
Discretionary household income ($)	795.10 (6173.09)	1575.49 (7172.33)	.287
Highest level of education (grade level)	9.65 (1.57)	9.85 (1.67)	.247
Age at 1st period (yrs)	12.43 (1.64)	11.91 (1.57)	.003
Age at 1st intercourse (yrs)	14.74 (1.42)	1 4.48 (1.69)	.114
Maternal social support†	4.03 (0.63)	4.04 (0.70)	.846
Maternal number of children	4.29 (2.14)	4.14 (2.40)	.526
	Freq. (%)	**Freq. (%)**	
African-American	138 (93.9%)	195 (94.2%)	.898
Live in subsidized housing	37 (25.2%)	45 (21.7%)	.451
Head of household	3 (2.0%)	6 (2.9%)	.613
Employed	15 (10.2%)	12 (5.8%)	.124
Parents living apart prior to age 13 years	106 (72.6%)	151 (73.3%)	.884
Maternal Education: less than high school	61 (41.5%)	71 (34.3%)	.357

† Range = 1.42 – 4.93

Table 2

Association between selected measures collected at baseline and rapid repeat pregnancy

	Repeat pregnancy status by 24 months post-partum		
	Yes (n =147) Mean (SD)	**No (n = 207) Mean (SD)**	**P value**
Mental health Factors			
Good Mental health index (higher score is better)	3.66 (0.63)	3.72 (0.60)	.328
Anxiety	2.62 (0.77)	2.54 (0.74)	.360
Depression	2.26 (0.74)	2.14 (0.71)	.121
Aggression Proxies			
Perceived self-efficacy to not be aggressive			
How confident are you in your ability to settle differences with people close to you without hitting, pushing, or getting physical?[a]	3.16 (1.02)	3.40 (0.88)	.022
How likely are you to settle differences with people close to you without hitting, pushing, or getting physical with one another?[a]	3.33 (0.88)	3.41 (0.88)	.404
Perceived norms of close persons regarding aggressive behavior			
How much help (would/do) you get from people close to you in finding ways of settling differences without hitting and pushing?[a]	3.42 (0.80)	3.50 (0.79)	.307
How much (would/do) people close to you provoke you to hit or push (if you didn't want to)? [b]	3.44 (0.85)	3.24 (1.02)	.046
Attitudes toward aggression			
Sometimes people must use physical force to let others know just how important something is to them. [b]	2.84 (0.78)	2.63 (0.84)	.019
People who settle their differences by getting physical end up hurting one another both physically and emotionally.[a]	3.14 (0.81)	3.18 (0.76)	.670
Substance Use	**Freq (%)**	**Freq (%)**	
Drank alcohol past 14 days	4 (2.7%)	2 (1.0%)	.207
Drank alcohol during pregnancy	6 (4.1%)	5 (2.4%)	.373
Smoked cigarettes past 3 days	10 (6.8%)	10 (4.8%)	.428
Used drugs during pregnancy	7 (4.8%)	10 (4.8%)	.976
Negative Life Experiences			
Any contact abuse (physical or sexual) during childhood	17 (11.6%)	27 (13.0%)	.678
Prior pregnancy with poor outcome	17 (11.6%)	23 (11.2%)	.907
Lived in foster home prior to age 13 years	1 (0.7%)	4 (2.0%)	.327
Birth control			
Birth control use (since start of pregnancy risk)	90 (61.2%)	129 (62.3%)	.835

	Repeat pregnancy status by 24 months post-partum		
Frequency of birth control use (since start of pregnancy risk)			.290
Once in a while	22 (24.4%)	33 (25.6%)	
About half the time	13 (14.4%)	15 (11.6%)	
Most of the time	19 (21.1%)	41 (31.8%)	
Always until I stopped	20 (22.2%)	27 (20.9%)	
Every time; pregnancy resulted from a birth control method failure	16 (17.8%)	10 (10.1%)	

[a](high score = lower expected aggression)

[b](high score = more expected aggression)

Table 3

Significant socio-demographic predictors of rapid repeat pregnancy

Model	Predictors	Wald χ^2	Odds Ratio (95% CI)
Socio-demographic			
Step 1	Age at 1st period	8.92*	1.23 (1.074 – 1.409)

*Note: $p < .05$

Table 4

Significant behavioral predictors of rapid repeat pregnancy

Model	Predictors	Wald χ^2	Odds Ratio (95% CI)
Aggression Proxies			
Step 1	*Aggression item 1:* Sometimes people must use physical force to let others know just how important something is to them.	5.56*	0.72 (0.558 – 0.948)
Step 2	*Aggression item 2:* How confident are you in your ability to settle differences with people close to you without hitting, pushing, or getting physical?	3.92*	0.80 (0.634 – 0.998)
	Aggression item 1: Sometimes people must use physical force to let others know just how important something is to them.	4.37*	0.75 (0.575 – 0.982)

* Note: $p < .05$