Disparities in the Trajectories of
Young Women's Willingness to Refuse Unwanted Sex

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Unwanted sexual experiences, including those that are compliant or ambiguously wanted, have important implications for individuals' mental health, sexual self-concept, and sexual and reproductive health outcomes[1-3]. Such experiences are a common phenomenon, especially among young women in the United States —an estimated 11% of sexually active women under age 20 do not want to have sex at first intercourse, while another 48% have "mixed feelings"[4]. Moreover, approximately two-thirds of college-aged women ever consent to sex they do not want to have[5] and an estimated 17% of all sexual activity in committed heterosexual relationships among young adults is unwanted but not refused[6].

A number of factors are associated with compliant unwanted sex, including previous coercive experiences, low self-esteem or sexual self-efficacy, ambiguous feelings about sex, peer pressure, and gender attitudes, among others[1, 7-13]. Paralleling disparities in perceived sexual self-efficacy[14, 15], scholars have also documented racial and socioeconomic differences in unwanted sex among women, with black women and women with lower socioeconomic status reporting significantly higher rates of unwanted sex than their white and comparatively more advantaged peers[16].

Although the correlates and consequences of unwanted sex are well documented, much less is known about young women's *willingness* to refuse sex. A close examination of this willingness and how it evolves during the transition to adulthood is key to better understanding sexual compliance and ambiguity, and disparities therein. In this study, we use a new panel of young adult women from the Relationship Dynamics and Social Life Study, which includes repeated measures of young women's willingness to refuse sex, to illuminate how willing young women believe they would be to refuse unwanted sex; how their willingness to refuse sex evolves during the transition to adulthood; and how trajectories of

willingness vary across demographic background, beliefs about rape, and early sexual and relationship experiences.

Methods

Data

Data come from the Relationship Dynamics and Social Life (RDSL) Study, a population representative sample of 1,003 women in Genesee County, Michigan, who were aged 18 to 19 at baseline. Participants were randomly selected from the Michigan Department of State driver's license and Personal Identification Card (PID) database, with an 84% response rate (94% among those located). A comparison of the 2000 Census-based projections and the driver's license and PID data confirms a 96% agreement between the projections for Genesee county and the frame count[17]. Michigan, although not nationally representative, does mirror much of the United States with respect to demographic measures such as age at first birth, nonmarital and teen childbearing, completed family size, and cohabitation and marriage (see Lesthaeghe and Neidert 2006 for more details). Moreover, in terms of high school and postsecondary enrollment, employment, marriage, and residential arrangements, the RDSL is consistent with national averages among women aged 18-19[19]. Its one distinction is racial: the RDSL includes twice as many African American and half as many Hispanic women as nationally representative samples[19].

The RDSL commenced with a baseline survey that collected respondents' demographic background, sexual and reproductive history, and attitudes toward sex and contraception, among other psychosocial factors related to women's reproductive health. Upon completion, respondents were asked to participate in the journal portion of the study, which included 5-minute weekly surveys, completed online or via telephone, for up to 2.5 years. Ninety-nine percent of respondents (n=992) agreed to participate in these weekly

surveys; 78% continued for >=1.5 years; 63% continued for 2.5 years[20]. During the weekly survey respondents answered questions about their relationship status and dynamics, sexual activity, and contraceptive use. Every twelve weeks they also answered attitudinal questions about sex. A randomized experiment conducted in conjunction with the RDSL found that repeatedly answering questions about relationships, sex, contraception, and attitudes had little bearing on women's reported behavior or outlook[21]. In addition to baseline and the weekly surveys, respondents were invited to participate in three one-time supplements, one of which included questions about perceptions of rape.

Because RDSL participation began at age 18 or 19, we do not have complete information on women's willingness to refuse unwanted sex at every age between 18 and 22.5. For instance, young women who began the RDSL immediately after turning 18 could only contribute information until age 20.5; while women who began shortly before turning 20 could contribute information until almost age 22.5. Given this dispersion, with fewer observations at the youngest and oldest ages, we focus on weeks when respondents were between ages 19.5 and 21.5. In weeks when respondents were pregnant they were not asked about their willingness to refuse sex. As such, these weeks are excluded from our analysis. Our final analytic sample draws on information from 3, 021 weeks across 763 respondents.

Willingness to Refuse Unwanted Sex

Our key measure of young women's willingness to refuse unwanted sex comes from the question: "Imagine being with a partner who wants to have sex, but you do not. How willing would you be to refuse to have sex with your partner, even if it made him angry?" Possible answers ranged from (0) "not at all willing" to (5) "extremely willing." This question was asked at baseline and then again every twelve weeks.

Measures

Demographic Background. Respondent's demographic background is captured with nine covariates assessed at baseline. These include whether she had ever had any live birth; whether she identified as Africa American (97% of respondents identified as African American or white); whether she was enrolled in school; her highest educational attainment by baseline (<H.S., completed H.S.; partial post-secondary); whether she was currently receiving public assistance; her mother's highest level of education (<H.S., H.S. or some college, and completed college); and whether her mother was < 20 years at first birth.

Rape Myth Rejection. Rape myths were assessed with five questions during a one-time supplement implemented among 590 respondents in 2010. Specifically, respondents were asked whether they "strongly agreed," "agreed," "disagreed," or "strongly disagreed" with the following statements: "No woman-no matter how she dresses or behaves-deserves to be raped." "When women go out in sexy clothes, they are just asking for trouble." "If a woman is with a guy and things go too far, then it isn't rape even if she says no." "There is a point when a guy gets so aroused, or turned on, he just can't stop himself." "When a woman says she was raped, she probably agreed to have sex and then changed her mind." We code all items such that higher scores indicate stronger disagreement and take the mean to operationalize respondents' rejection of rape myths.

Sexual History. We examine three measures of respondents' sexual history before baseline. This includes whether the respondent had ever had sex; if so, her age at sexual debut (ranging from 7 to 19); and her total number of sexual partners (ranging from 0 to 57).

Sexual and Relationship Behavior. We also explore three measures of respondents' sexual and relationship activity during the study period, including the proportion of respondents' study weeks they had sex, were in any type of relationship, and were cohabiting. Proportional measures were created by summing the total number of weeks respondents

reported a given behavior and dividing this number by the number of weeks they participated in the study.

Analytic Strategy

The majority of young women were extremely willing to refuse sex (66.6%) at baseline. Given the skew towards being willing to refuse sex, we categorized the variable into three groups: extremely willing (5), moderately willing (1-4), and not at all willing (0). These indicators were used in the LCA to assess change in willingness to refuse sex over two years. Models were estimated sequentially from a one to five class model (See Table 2) and classes were enumerated using the Bayesian Information Criteria (BIC) adjusted BIC(aBIC), the Voung-Lo-Mendell-Rubin Liklihood Ratio Test (V-LMR) and the adjusted V-LMR (aV-LRM). Changes in the BIC and aBIC[22] were graphed and the "elbow rule" used to assess a leveling off of the model fit[23]. For the V-LMR and aV-LMR[24], a p-value >.05 indicated that *k*-1 class model was not a worse fitting model than the *k* class model[25]. Following class enumeration, entropy was used to assess separation of classes and the proportion of cases in each class was used to assess class density. As a sensitivity test, we also conducted a Growth Mixture Model (GMM) analysis using the original willingness scale (ranging 0-5). We discuss the results of this analysis after our main findings.

Following our LCA analysis identifying distinct trajectories of the evolution of willingness to refuse unwanted sex, we estimated a series of bivariate models to detect meaningful differences in the demographic composition, attitudes, and experiences across trajectory groups. Bivariate models were chosen over multivariate models because of concerns about statistical power.

Ethics

Data collection was funded by an NICHD R01 and overseen by the PI Jennifer Barber, who undertook appropriate ethical review. The resulting deidentified data is available through the Inter-University Consortium for Political and Social Research. Secondary analysis did not require ethics approval.

Results

Descriptive Statistics

Table 1 presents the means and standard deviations for respondents' willingness to refuse unwanted sex at baseline; average willingness during their study participation; and key indicators of their demographic background, rape myth attitudes, and sexual and relationship behaviors. Mean willingness to refuse unwanted sex at baseline was 4.14 (SD = 1.55), approximately a point below "extremely willing." This mean, however, absconds important heterogeneity. At baseline, 8.8% of respondents reported being "not at all willing" to refuse unwanted sex, while 66.6% reported being "extremely willing," and the remaining 24.6% reported a willingness somewhere in between (Figure 1). Such heterogeneity provides an important first indication that not all women's willingness is the same during the transition to adulthood, and thus that it is unlikely women's trajectories are uniform. Furthermore, respondents' average willingness during the study period was slightly lower than what was reported at baseline, with a mean of 3.84(SD=1.63). This suggests that for many respondents willingness to refuse unwanted sex changed, and specifically declined, as they grew older.

Selection of Trajectory Model

The fit statistics for one to five class LCA models in Table 2 and their substantive interpretation indicate that the three class model fit the data best (*-2LL* = -2466.83; *BIC* = 5350.31; *aBIC* = 5172.49; *V-LMR* = <.001, aV-*LMR* = <.001). Both the entropy (.69) and

proportions of the sample in each class (Class 1 = 45%, Class 2 = 15%, and Class 3 = 42%) indicate sufficient statistical class distinction and class density for the three class model.

Description of Trajectory Model

The three classes represent a Low U class (Class 2; $n = 99$), a Middle Declining class (Class 3; $n = 323$), and a Steady High class (Class 1; $n = 341$). Figure 2 helps visualize these classes by graphing the mean willingness of each across age. Low U started lower than both Steady High and Middle but Declining classes, dropped to the lower end of the middle scores from around age 20 to age 21, but ended above Middle Declining. Middle Declining started lower than Steady High, generally remained in the upper middle range of scores, and declined slightly over the transition to adulthood. Steady High tended to report that they were extremely willing to refuse sex across the two-year period and had comparable values at ages 19.5 and 21.5 (Figure 2).

Trajectory Correlates

Table 1 presents the results of bivariate analyses examining whether key demographic attributes, rape myth attitudes, and sexual and relationship behaviors are predictive of trajectory membership. Previous births emerged as a strong predictor: 25% of Low U women had a live birth before baseline, compared to 11% of Moderate Declining and Steady High women ($p < .001$). Significant racial differences also emerged: 51% of Low U women were African American, in juxtaposition to 25% of Moderate Declining ($p < .01$) and 32% of Steady High women ($p < .01$). With respect to school enrollment at baseline, 60% of Low U women were enrolled in school, which was significantly lower than the 72% of Moderate Declining ($p < .05$) and 77% of Steady High women ($p < .01$). Although no

significant differences in class membership were detected between women who had not completed high school and those who had graduated but were not enrolled in college, compared to women who had not completed high school, women who had at least some college education by baseline were more likely to be Moderate Declining (p =.05) or Steady High (p <.01) relative to Low U. Receipt of public assistance was also predictive of class membership. That is, 41% of Low U women were receiving public assistance at baseline, compared to 20% of Moderate Declining and 23% of Steady High women (p<.05). Similarly, 47% of Low U women received public assistance in childhood, compared to 33% of Moderate Declining and 34% of Steady High women (p<.05).Turning to maternal education, only 10% of women in the Low U class had a mother who graduated college, relative to 25% of Moderate Declining and 26% of Steady High women (p<.001). Maternal age at first birth was similarly distributed, with 52% of Low U women having a teen mother compared to only 31% of women in the Moderate Declining and Steady High classes (p<.001). In sum, demographic background was closely correlated with membership in the Low U group versus membership in either of the other groups.

Rape myth attitudes, in contrast, were associated with membership in the steady high group relative to membership in the other two (Table 1). That is, mean rape myth rejection scores were significantly higher among Steady High women (Mean = 12.19, SD = 2.17), who consistently reported a strong or extreme willingness to refuse unwanted sex, than it was among Low U (Mean=11.00, SD=2.81) and Moderate Declining (Mean=11.12, SD=2.44) women (p <.001).

Sexual and relationship behaviors also corresponded to the trajectories women followed (Table 1): 85% of Low U women had sex before baseline, compared to 75% of Moderate Declining (p<.05) and 70% of Steady High (p<.01). Women in the Low U class

also had a sexual debut that was an average of .45 years, or approximately 5.5 months, earlier than Moderate Declining women (15.60 versus 16.05, $p<.05$). The number of partners women reported before baseline did not vary by group. However, Steady High women had sex in a smaller proportion of weeks—35%—compared to Moderate Declining women in, who had sex in 41% of weeks ($p<.05$).

Ancillary Analyses

We also examined a GMM of the mean willingness to refuse sex scaled 0-5 (available upon request). A five-class solution had the best model fit and substantive interpretation; however, overall model fit was poor as the BIC and aBIC did not meet the "elbow rule" even at eight-classes. Nevertheless, the best-fitting 5-class GMM model did support our main analysis. That is, the Steady High, Moderate Declining, and Low U classes were all present in this model. The other two classes indicated by the 5-class model were Inverted U (started low, went high, and returned to the middle) and Steady Low (fluctuated between 0 and 1). The High U class would be subsumed into the Moderate Declining class in our main analysis; the Steady Low class was likely redistributed among the Moderate Declining and Low U classes (it only comprised 4% of respondents).

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