

The Casual Sex Trajectories of Adolescents and Young Adults: A Growth Curve Analysis

Heidi Lyons  
Wendy Manning  
Peggy Giordano  
Monica Longmore

Bowling Green State University  
Center for Family and Demographic Research

## **Abstract**

Extensive research has examined adolescent and young adult sexual experience with growing attention to casual sexual activity. However, prior studies have relied on college-based samples, ignoring the experiences of sixty percent of young adults. We contribute to prior work by using longitudinal data from a broad sample of teens and young adults (N=845). Using growth curve analysis we determine male and female casual sex trajectories. We find that by age 23, three-quarters of young adults have had a casual sex partner and on average they have had two casual sex partners. At age 15 males and females are equally likely to have had casual sex; however, males increase their number of casual sex partners at a significantly faster rate than females. We find alcohol use, peer influence, and liberal sex attitudes are significantly related to casual sex activity for both males and females and the influence of these covariates increases with age.

Adolescence is the stage in the life course associated with the start of sexual activity, the majority (58%) of females and males (54%) have had sex before reaching the age of 18 (Abma, Martinez, Mosher, and Dawson 2004). Young adulthood is viewed as a time to continue sexual exploration (Arnett 2004) and by age 23 about 90% of young adults having some sexual experience (Mosher, Chandra, and Jones 2005). The issue drawing the attention of the popular press and researchers is that many sexually active teens and young adults are having sex outside of traditional dating relationships and there is acceptance of casual sexual activity. Among sexually active teenagers, 61 percent have had at least one experience with casual sex or sexual intercourse in a non-committed relationship (Manning, Giordano, and Longmore 2005). There are no national estimates of the percentage of sexually experienced young adults who have had casual sex, but it is expected to increase as one enters young adulthood. Thus, the levels of and acceptance of casual sex indicates that it has likely become a normative part of the sexual careers of young adults.

Most research on casual sexual behavior of adolescents and young adults focuses on contraception or problem behaviors such as alcohol misuse (e.g. Desiderato and Crawford 1995; Grello, Welsh, and Harper 2006; Manlove, Ryan, and Franzetta 2007), but does not consider the developmental trends and significance of casual sex. We draw on a life course theory to study gender similarities and differences in the development of casual sexual activity. Using growth curve models and longitudinal data, this paper provides a more complete understanding of casual sex as it focuses on the trajectory from adolescence to early adulthood with an emphasis on the gendered experience of casual sex. We examine how time-varying covariates, such as substance use and parent-child relationship quality, influence casual sex trajectories and whether they have the same influence for males and females.

## BACKGROUND

Researchers have started to investigate how adolescent behaviors influence later emerging adult romantic and sexual behaviors (Crockett and Randall 2006; Conger, Cui, Bryant, and Elder 2000; Feldman, Grown, and Fisher 1998; Meier and Allen 2007; Meier and Allen 2008; Raley et al. 2007; Tucker Halpern, Waller, Spriggs, and Dion Hallfors 2006). Individuals appear to learn how to navigate in intimate relationships during their teen years through direct experiences (Larson, Wilson, Brown, Furstenberg, and Verma 2002). However, the literature has not assessed directly how casual sex behavior changes over time. Even so, there is research that supports the notion that relationships during adolescence do not occur in isolation but can predict later behavior as people transition into adulthood. For example, positive relationship quality with parents during the adolescent years significantly predicts better and healthier romantic relationships in young adulthood (Conger et al. 2000; Crockett and Randall 2006; Feldman, Grown, Lawrence 1998). Others studies have investigated how sexual behavior during the teen years influences young adult romantic relationships. Adolescents who have sex are significantly more likely to have more sexual partners and increased odds of marrying or cohabitation by the time they are 18-25 in age (Meier and Allen 2007). Also, individuals who have casual sex during adolescence are more likely to form a cohabiting union that does not transition into a marital union during young adulthood (Raley, Crissey, and Muller 2007). This suggests that these early sexual relationships appear to have long term consequences for later adult attachment and intimacy (Raley et al. 2007). We examine how adolescents' casual sex relationships influence their later casual sex behavior in early adulthood.

Much of the research on casual sex and emerging adults is comprised of four-year college samples (England, Ritzgibbons Shafter, and Fogarty 2007; Glenn, and Marquardt 2001; Grello et al. 2006; Paul and Hayes 2002; Paul, McManus, and Hayes 2000; Paul 2006; Regan and Dreyer 1999). However, sixty percent of 18-24-year-olds are not currently enrolled in college (US Census 2007). There have been few studies that include a diverse sample of early young adults. It has been well documented that young adults have multiple paths to adulthood regarding, employment, education, and family roles (Sandefur, Eggerling-Boeck, and Park 2005; Osgood, Ruth, Eccles, Jacobs, and Barber 2005); however, the research on sexual behavior has not reflected this complexity. Thus, it is important to consider a sample that is not school-based (in adolescence or adulthood). This study relies on data from individuals with many different education and employment trajectories, not just four-year college bound emerging adults.

This research is guided by life course theory. A core principle of the life course perspective is the timing of events and the notion of age appropriate behavior. Elder (1995) explains there are expected social roles and behaviors that are associated with a person's age. Further, an individual's actions that occur in earlier age-graded stages both directly and indirectly influence behavior in later life stages (Elder 1985). Yet, the influence of early life experiences on later life events may be shaped in part by the gendered nature of these experiences. This study recognizes the gendered nature of sexuality and examines how trajectories of casual sex experiences differ for males and females.

### Current Investigation

This paper analyzes the change in the number of *casual sex partners* during adolescence into young adulthood and also the factors that predict the change. More specifically, there are four questions that will be addressed. First, we examine the factors associated with the number

of sex partners at age 15 and evaluate gender differences and similarities. Second, we determine whether there is a significant change in number *casual sex partners* over time and assess whether the change is similar or different among males and females. Third, we examine how factors related to sexual activity substance use, peer influence, social psychological indicators, traditional views, and families influence change in *casual sex* from adolescence to early adulthood. Finally, any possible significant variations of the covariates for males and females are documented. The models provide estimates of the individual trajectories that represent the repeated measure of the individual (Cunningham 2008). To analyze the data we rely on growth curve models which are beneficial because they are able to determine individual and group average intercepts and slopes. Growth curve models are also able to include time-varying variables such as substance use. We include in the models covariates that have been found to be related to casual sexual activity among teenagers and sexual risk behaviors among all youths. We include substance use, peer influence, social psychological indicators, traditional views, and family variables. Based on prior research we expect that males will have more casual sex and have casual sex trajectories that differ from females. Drawing on research on adolescent and early adult sexual activity, we anticipate that peers' sexual behavior and attitudes and relationship with parents will have a weaker influence on casual sex in early adulthood than adolescence, and that substance use, social psychological indicators, and traditional views will have a stronger influence in early adulthood.

## **DATA AND METHODS**

*The Toledo Adolescent Relationship Study (TARS)*

To investigate the outlined research questions, four waves of the Toledo Adolescent Relationship Study (TARS) will be used. TARS is a four wave dataset and was originally collected to investigate the family, peer, and romantic partners influence on romantic and sexual behaviors of adolescents. The first wave was collected in 2000, which included a random sample of youth in the 7<sup>th</sup>, 9<sup>th</sup>, and 11<sup>th</sup> grades in Lucas County, Ohio. Wave II was collected in 2002, wave III 2004, and wave IV in 2006-2007. The geographic area of Lucas County is similar to estimates of race and ethnicity, family income, and education to the national population. At wave I, there was a sample 1,316 youth. By wave IV, there were 1,092 valid respondents with an excellent retention rate of 82 percent. As noted above, school attendance was not a requirement to be included in the sample. Most of the interviews occurred in the respondents' homes. There is an oversampling of racial minority youth.

TARS is an appropriate dataset for several reasons. First, the TARS data provide detailed measurement at each wave about casual sex behavior allowing a developmental assessment of casual sex. Second, the casual sex question in the TARS directly asked how many casual sex partners they have had in their lifetime at each wave. This is necessary when investigating the change of number of casual sex partners over time. The third wave of the Longitudinal Study of Adolescent Health (Add Health) asks the respondents to list all of their sexual and romantic partners. However, casual relationship status can only be determined if the sexual relationship is recent. This means that the casual sex status of almost 4,000 relationships cannot be determined for the sample. Finally, much of the research on casual sex uses either college samples or school based samples such as the Add Health. To be selected into TARS school attendance was not a requirement which means that outlying individuals will be included in the current project. Individuals who are not attending high school during wave I may have different casual sex

trajectories at later waves and, if not accounted, for may bias the findings if using a school-based sampling frame. To be included in the sample, the respondent has to be between the ages of 15-23. There were N=457 respondents removed from analyses because they were too young. Very few respondents had casual sex before the age of 15 which means that there is very little variation at these younger ages. Also, 19 respondents were deleted from the analytic sample because they were 24-year-old. The final analytic sample is based on 845 respondents or 3,380 observations.

## **Measures**

### Dependent Variable

The research question investigates casual sex longitudinally. The means and ranges of *lifetime casual vaginal sex partners* at each wave are wave I (mean=.6; range 0-54) wave II (mean=1.5; range 0-90) wave III (mean=2.5; range= 0-90) and at wave IV (mean=4.1; range=0-90). One hundred and sixty-three respondents reported a higher number of casual sex partners at an earlier wave. When this occurs the larger is used from the previous wave.

### Independent Variables

*Gender.* The simple wave I measure of gender was a dummy variable where 1=female and 0=male.

*Alcohol and Drug Use.* Two variables were used to measure alcohol and drug use. Respondents at waves I through III were asked, “In the past 12 months, how often have you drunk alcohol” and at wave IV “In the past 24 months, how often have you drunk alcohol?” Responses ranged from 1=Never to 9=more than once a day. Drug use was measured in the same way with the question, “used drugs to get high (not because you were sick)?”



*Perceived Peer Sex Attitudes.* Three questions were asked at all four waves and used to construct a scale. These three questions are, “My friends think it’s okay to date more than one person at a time” “My friends think you should only have sex with someone you love” (reverse coded) and “My friends think you should only have sex if you are married” (reverse coded). Answers range from 1=strongly disagree to 5=strongly agree so higher numbers equals more liberal sex attitudes. (wave I alpha=.40; wave II alpha=.53; wave III alpha=.61; wave IV alpha=.63).

*Perceived Peer Sexual Behavior.* To measure how many of the respondent felt of their friends were having sex the question the question “How many of your friends had sex” was asked at all four waves and was used with responses of 1=none to 6=all.

*Depressive Symptoms.* Depressive symptoms were measured at all four waves using seven items that all asked, during the last seven days how many times have: “You felt you just couldn’t get going” “You felt that you could not shake off the blues” “You had trouble keeping your mind on what you were doing” “You felt lonely” “You felt sad” “You had trouble getting to sleep or staying asleep” “You felt that everything was an effort.” (wave I alpha=.81; wave II alpha=.85; wave III alpha=.84; wave IV alpha=.85). The responses ranged from 1=never to 8=everyday so higher scores on the scale means more depressive symptoms.

*Self-Esteem.* To measure self-esteem at all four waves, six questions were included in a scale. The questions are “I am able to do things as well as other people” “I feel that I have a number of good qualities” “I feel I do not have much to be proud of” (reverse coded) “At times I think that I am no good at all” (reverse coded) “I feel that I am a person of worth, at least on an equal basis with others” “I take a positive attitude toward myself.” (wave I alpha=.72; wave II alpha=.74; wave III alpha=.76; wave IV alpha=.77). The responses ranged from 1=Strongly

Disagree to 5=strongly Agree so higher scores on the scale measured higher levels of self-esteem.

*Liberal Sex Attitudes.* Four questions were used to measure the respondents' own liberal attitudes toward sex at all four waves: "A person should only have sex with someone they love" (reverse coded) "A person should only have sex if they are married" (reverse coded) "I would have to be committed to a girl/guy in order to have sex with her/him" (reverse coded) and "I would feel comfortable having sex with someone I was attracted to but did not know very well." The alphas at each wave are wave I(alpha=.65); wave II (alpha=.68); wave III (alpha=.77); wave IV (alpha=.78). The response categories ranged from 1= Strongly Disagree to 5=Strongly Agree so higher numbers equaled more liberal attitudes toward sex.

*Religiosity.* Identical religiosity questions were not asked at wave I and wave IV so different measures were used to tap religiosity. At waves I and II, the question, "How important is religion in your life?" is used. Answers ranged from 1= not important at all to 5=very important. At waves III and IV the question was, "How important is your spiritual life?" The responses again were 1= not important at all to 5=very. For both measures of religiosity, higher numbers were associated with the respondent being more religious.

*Family Structure.* Family structure is a Wave I measure with a series of dummy variables. The omitted category was respondent who lived with two biological parents. The other categories were single parent family, step family, or other family form. At wave IV, respondents were coded as 0 if they were currently not living with their parents and 1 if they live in the parental home.

*Parent-Child Relationship Quality.* To measure parent-child relationship quality five variables were used to create a scale. The questions at wave I were: "My parents often ask about

what I am doing in school” “My parents give me the right amount of affection” “My parents trust me” “I’m closer to my parents than a lot of kids my age” “I feel close to my parents.” Similar questions were used at later waves only with age appropriate language. For example, “My parents often ask about what I am doing (e.g., in school, at work, with my friends, etc.)” (wave I alpha=.77; wave II alpha=.79; wave III alpha=.78; wave IV alpha=.80). Responses range from 1= Strongly Disagree to 5=Strongly Agree, so higher numbers equaled higher relationship quality.

### **Analytic Strategy**

Growth curve analysis is useful for studying change in three broad ways. First, it is able to describe the shape of individuals’ initial *casual sex* pattern in the form of an intercept and also the individual’s *casual sex* trajectories over time in the form of a slope. Second, the method can include time-varying covariates to determine their influence over time. The analytic strategy is to first estimate the unconditional growth model which establish initial number of *casual sex partners* and the rate of change over time. The next model includes gender to ascertain if males and females differ in their *casual sexual* experience at age 15 or over time. Subsequently, five separate models are estimated to determine the key predictors of *casual sex* and to evaluate whether gender differences can be mediated.<sup>1</sup> Singer and Willett (2003) note that sometimes complex growth curve models will not converge. In order to determine the unique influence the five groups of variables have on *casual sex* trajectories, separate models are conducted. Next, to determine if the models should be presented separately by gender, a three-way interaction of age, gender, and the key independent variable is included in the model. If the interaction term is statistically significant, then separate models for males and females are presented.

---

<sup>1</sup> In order to test how each group of independent variables influence casual sex separate models are conducted. One full model with all the independent variables included would not converge. In order to eliminate this issue different and more parsimonious models are displayed.

## RESULTS

Table 1 displays the descriptive statistics for the variables included in the analysis. As shown, the average number of *casual sex partners* for the sample across time and individuals is 2.2. The mean number of *casual sex partners* for females is 1.31 and for males it is 3.13 (not shown). The dependent variable, *casual sex partners*, is highly skewed toward zero. We find that 41 percent of respondents in our sample have had casual sex (45 percent of males and 38 percent of females). Casual sex experience does vary by age. Only nine percent of 15-year-olds have had casual sex (10 percent of males and 7 percent of females) compared to 77 percent of 23-year-olds (89 percent of males and 63 percent of females) (results not shown). To account for the skewed distribution a natural logarithmic transformation is applied to the dependent variable (Raudenbush and Chan 1992; Singer and Willett 2003), and because taking the natural log of zero is indefinite the constant of one is added to the dependent variable (Singer and Willett 2003). The following results are presented as the log transformation unless stated otherwise.

Table 1 indicates that gender is a wave one measure and about half of the respondents are female (52 percent) and 48 percent male. The average age of the sample across time is 18. Both substance use measures are time-varying covariates, measured at all four waves and range from 0-9. When variables are time-varying, such as the substance use measures, the means reported are the grand means over time. The sample has a mean alcohol use of 3.4 and drug use of two. The peer variables are also time-varying indicators. Respondents report that most of their peers have had sex (mean= 4.4 and ranges from 0-6) and their peers are slightly liberal on sexual attitudes, 8.7 (range 3-15). Both social psychological indicators are time-varying variables and are measured at all four waves. The mean score for self-esteem is 24 (range 8-30) and depression 17 (range 0-55). Religiosity and liberal sex attitudes are time-varying covariates.

The sample has a mean for religiosity of 3.2 (range 0-5) and they are slightly liberal in terms of sex attitudes with a mean of 10.7 (range 4-20). Family structure is a wave one measure and 51 percent were raised in two biological parent homes, 23 percent in single parent homes, 14 percent in step families, and 12 percent in other family formations. Finally, parental relationship quality is a time-varying indicator and respondents score relative high on relationship quality with their parents with a mean of 17.6 (range of 0-25).

Model A in Table 2 is the unconditional growth model which includes the measure of age, but not gender or other covariates. This model statistically tests the change over time in the samples' *casual sex* trajectories and tests for significant individual differences in the intercept and slope. First, the residual variance is reduced by .63  $((.30-.11)/.30=.63)$ .<sup>2</sup> This can be interpreted as 63 percent of the variability within persons is accounted for by the linear effect of age. The significant fixed effect intercept of  $\gamma_{00}=.05$  is the *casual sex partners* for 15 year olds.<sup>3</sup> This is significantly different than zero. Also, we can tell from the coefficient  $\gamma_{10}=.16$ , which represents the slope, that there is a significant and positive increase in *casual sex partners* as one ages from adolescence to young adulthood. In other words, the average adolescent increases the number of *casual sex partners* by 17 percent each year.<sup>4</sup>

Model B includes the gender covariate. This model addresses the initial difference in *casual sex partners* for males and females and the annual rate at which *casual sex partners* changes depending upon gender. Females do not have significantly fewer *casual sex partners* compared to males at age 15 ( $p=.102$ ). However, the intercept coefficient of  $\gamma_{00}=.09$  is significant which means 15-year-old males have more *casual sex partners* than zero. Model B also illustrates that males have a significantly steeper slope of *casual sex partners* over time.

---

<sup>2</sup> .11 is the residual variance when time is not in the model. This unconditional means model is not shown.

<sup>3</sup> Time is centered so, 0=age 15 and 8=age 23.

<sup>4</sup> The percent change is calculated as  $100*(e^{.16}-1)$ .

The coefficient  $\gamma_{10} = .19$  is the slope for males. This is interpreted as: for each year males increase their *casual sex partners* by 21 percent. Females only increase their *casual sex partners* by a factor of 14 percent every year. To summarize, males do not have more *casual sex partners* at age 15 than females. However, males increase the number of *casual sex partners* over time at a significantly faster rate. For the sample, *casual sex* is associated with aging into young adulthood. Among the 23-year-olds, 89 percent of males and 63 percent of females have had at least one *casual sex partner*. In other words, the majority experienced *casual sex* by the time they reach young adulthood. This trend is reflected in the growth curve models.

Substance use is the first group of variables tested in the analysis. Model C of Table 2 includes the two time-varying substance use measures, alcohol use and drug use and evaluates how substance use influences *casual sex* at age 15 and over time. This model also addresses the possibility that substance use mediates the gender relationship of change over time. Alcohol and drug use both marginally predict *casual sex* at age 15. There is a significant rate of change,  $\gamma_{13} = .004$ , in terms of alcohol use but not drug use. This can be interpreted as initial alcohol use increases *casual sex partners* by about two percent but by age 23 the influence of alcohol is about six percent. In other words, alcohol becomes a stronger predictor of *casual sex* as individuals become young adults.

Controlling for the effects of substance use, the initial status intercept becomes non-significant which means that once substance use is controlled for males at age 15 do not have significantly more *casual sex partners* than zero.<sup>5</sup> Further, after substance use is in the model, the gender effect becomes significant. In other words, 15-year-old males that use drugs and alcohol are more likely to have *casual sex*. The gender difference in the rate of change persists

---

<sup>5</sup> It is important to note that in Model C the intercept is fixed to ensure model convergence. This is the same for all of the following tables.

even with the inclusion of substance use. The AIC and BIC both decrease from model B to model C suggesting that adding these covariates produces a better model fit than a model with just gender and age. There is not a significant interaction of age by gender by substance use so separate models for males and females are not presented.

Table 4 focuses on the effects of the two peer variables: peers' perceived sexual behavior and peers' liberal sex attitudes. Models A and B are the same as Table 2 (see above for interpretation) but remain in the current table for comparison. This model tests if peers' behavior and attitudes influence *casual sex* at age 15 and over time. Also, model C address the likelihood that peers' behavior and attitudes mediate the gender relationship of change over time. Model C illustrates that the initial status of peers' sexual behavior is significant suggesting that for every increase on the scale there is .03 effect on *casual sex partners* at age 15. A similar trend occurs for peers' liberal sex attitudes, an increase of .02 partners at initial status. Next, both peer variables have significant slopes suggesting a magnification of the positive effect of about a one percent increase every year. In other words, both peers' behavior and attitudes are expected to amplify the rate of increase over time.

Model C also shows that when controlling for peer variables, there remains a non-significant fixed effect difference between females and males. Females still have a significantly less steep slope, about six percent less, compared to the males in the sample. It can be concluded, that individuals with liberal peers or have peers who participate in sexual activity have more *casual sex* partners at age 15 and these two variables become more influential as individuals age from adolescence to young adulthood. There is a statistically significant age by gender by peers' sexual behavior ( $p < .01$ ) interaction so separate models for males and females are presented.

Table 5 reports the findings for the peer variables separately for males and females. At age 15, peers' sexual behavior is positive and significant for females but not for males. There are significant positive rates of change for both males and females. The effect of peers' sexual behavior increases about one percent every year for females and about two percent every year for males. Among 15-year-old females, peers' sexual behavior increases the number of *casual sex partners* by four percent. Among 15-year-old males, peers' sexual behavior increases *casual sex partners* by two percent. By the time an individual reaches the age of 23 the effect of peers' sexual behavior increases by 13 percent for females and 22 percent for males. Peers' sexual behavior has a larger influence on males than it does for females overtime.

Also Table 5 illustrates a significant effect for peers' liberal sex attitudes for both males and females. For females the significant and positive effect of peers' liberal attitudes is .02 compared to .03 for males. There is only a significant slope for females. Among females age 15, peers' sexual attitudes increases *casual sex partners* by two percent and by the age of 23 peers' liberal sex attitudes increases *casual sex partners* by five percent. In sum, peers' sexual behavior is positively related to *casual sexual partners* and the effect increases from adolescence into young adulthood for both males and females. Peers' liberal sex attitudes are related to *casual sex* among both males and females but increase in effect over time only for females.

Table 6 includes indicators of social psychological well-being (depressive symptoms and self-esteem) regressed on *casual sex partners* for the entire sample. Neither depressive symptoms nor self-esteem are associated with the number of *casual sexual partners* at age 15 and neither are significantly associated with rates of change in *casual sexual partners*. There is not a significant interaction with age by gender indicating that depressive symptoms and self-esteem have similar effects for males and females.



Table 7 presents the effects of two indicators of traditional views, religiosity and liberal sex attitudes, on number of *casual sex partners*. Model C illustrates that among 15-year-olds, liberal sex attitudes are significantly associated with *casual sex partners* but not religiosity. Both religiosity and liberal sex attitudes have a significant and positive influence on the rate of change, an effect of about one percent per year. Thus, the effect of liberal sex attitudes and religiosity increases as respondents move into young adulthood. Liberal sex attitudes become even more influential as one ages into young adulthood. Religiosity is not a significant predictor at initial status. However, religiosity has a greater impact on *casual sex partners* over time. Once religiosity and liberal sex attitudes are included, the intercept becomes non-significant indicating that 15-year-old males that have casual sex have higher liberal sex attitudes. When liberal sex attitudes are included in the model then 15-year-old males do not have more *casual sex partners* than zero. The interaction of age, gender, and religiosity is statistically significant ( $p < .01$ ) supporting the estimation of separate models for males and females.

Table 8 represents the models of the variables measuring traditional views for males and females. Religiosity is a significant covariate for 15-year-old females but not for males. There is not a significant rate of change coefficient for females and only a moderate rate of change for males. These findings indicate that religiosity matters for females and not males at age 15 but increase for males in influence as they age. Liberal sex attitudes have a positive and significant effect for both males and females, with a stronger effect at age 15 among males. Both males and females have a positive and significant slope for liberal sex attitudes. This means that liberal sex attitudes become more influential as individuals become young adults.

The final set of indicators included in the model predicting *casual sex partners* are family background and relationship with parents. Among 15-year-olds, respondents living in any other

family form besides two biological parent families have significantly more *casual sex partners*. Also, a stronger relationship with ones' parents decreases the number of *casual sex partners*. The effect of coming from a single parent family or a step family increases in magnitude over time. The influence of parental relationship does not increase over time.

The inclusion of the family covariates results in a significant gender difference at age 15. Further analysis reports that there are slight family differences between males and females. Males at initial status that are living in single parent family homes are not significantly different than males in two parent biological families. However, for females in single parent families do have larger amounts of *casual sex partners*. Once the family differences are controlled for the gender relationship becomes significant. The family variables do not mediate the difference between males' and females' change over time. The interaction of age, gender, and parental relationship ( $p < .001$ ) is statistically significant supporting the estimation of separate models for males and females.

Table 10 illustrates the models evaluating family structure and parent relationship quality for males and females. For females that are the age of 15, living in any other family form beside two biological parent families does results in higher amounts of *casual sex partners*. This is true for males also except single parent families are not significantly different than two parent biological families. The effect of single parent families does significantly increase over time for both males and females. Parental relationship quality negatively impacts *casual sex partners* for both males and female. The effect of parental relationship quality is larger for males.

## **DISCUSSION**

Casual sex becomes a common occurrence as one enters into young adulthood and this trend is confirmed with the growth curve models. Both males and females significantly increase

the number of casual sex partners they have over time. However, males increase their number of casual sex partners at a faster rate resulting in a gender difference in young adulthood.

With regard to key covariates related to casual sex, we find that alcohol use is strongly associated with casual sex for both males and females, and becomes more influential over time. In these models drug use is only marginally significant. Research on adolescence highlights the importance of peers, but relatively few studies have considered the influence of peers on young adult sexual behavior. Both peers' sexual behavior and peers' attitudes have a strong impact on males' and females' casual sexual behavior. In fact, we find peers' sexual behaviors have an increasing influence on the casual sexual behavior of both females and males. Groups that provide counseling to this age group regarding sexual behavior should consider the growing influence peers have on casual sex behavior. Even though individuals tend to have friends that are similar to themselves understanding the specific and increasing ways peers affect such behavior is important to consider. Also, one's own liberal sex attitudes are related to casual sex for males and females and consistent with prior work liberal sex attitudes have a greater influence on casual sex with age (Lefkowitz 2005). Interestingly, parental relationship quality is related to casual sex such that respondents with lower quality relationships are more likely to have casual sex. However, the quality of relationship with parents does not become more influential as one enters young adulthood; it does remain statistically significantly associated with casual sex. While few studies consider how parental relationship quality influences casual sex behavior in young adulthood, the findings from the current project suggest that parents matter even after adolescence. Overall, we find that many of the indicators associated with casual sex behavior become even more important as respondents get older. In other words, as

individuals enter young adulthood, when casual sex becomes more normative, indicators such as substance use, peers' attitudes, and traditional views have a greater influence on casual sex.

The findings from this paper are consistent with our theoretical approach. Our results support the life course concept of age-graded behavior (Elder 1985). Early casual experience sets a trajectory of later casual sexual activity. Further, most young adults do have casual sex at least one time which suggests that this behavior becomes normative and supports the notion that young adulthood is the time when individuals experiment with sexual behavior (Arnett 2004).

This study has a few limitations. The dependent variable is total number of casual sex partners and does not delve further into types of casual sex behavior such as casual oral sex. Also, casual sex relationships are not all the same. For example, some casual sex relationships are with ex-boyfriends or ex-girlfriend and some the relationship is with a stranger (Manning, Giordano, Longmore 2006). It is possible that there are different gender patterns and correlates for distinct types of casual sex behavior.

The findings have a few policy implications in terms of promoting sexual health. Casual sexual activity is associated with lower condom and contraceptive use (Manlove, et al. 2007; Manning, Longmore, and Giordano 2000) leading to greater risk of sexually transmitted infections and unplanned pregnancies. Given at age 15 only 11 percent of adolescents have had casual sex, it may be an ideal group to target with proactive programs aimed at reducing the number casual sex partners and encouraging safe sexual practices. Further, since substance use, peers' influence, and liberal sex attitudes increases their influence on casual sex as teens move into adulthood, early intervention programs that target these factors and reduce their power early on may result in a larger reduction of lifetime casual partners than programs that target these behaviors and attitudes at older ages.

This paper represents a move forward in our understanding of casual sexual activity. There are several important questions for future work. Given the bias toward college samples, additional work on casual sex requires diverse samples that investigate casual sex trajectories among young adults with a variety of education and employment experiences. Further research should examine not only the patterns of casual sexual activity but the age graded motivations and reasons for casual sex. Given the popularity of casual sex, this may help tap into what casual sex means to young adults. Researchers should also focus on the health (well-being and physical) and relational (stability and quality) implications of casual sexual activity. The prior work on this topic has indicated some negative implications of casual sex but future research should address that casual sex may be a functional relationship without great costs. Casual sexual activity has become a normative feature of the sexual careers of young adults and further research is warranted to explore the variation, correlates and consequences of this behavior.

## REFERENCES

- Abma, Joyce, Gladys Martinez, William Mosher, and Brittany Dawson. 2004. "Teenagers in the United States: Sexual Activity, Contraceptive Use, and Childbearing, 2002." National Center for Health Statistics. *Vital Health Stat* 23.
- Arnett, Jeffrey Jensen. 2004. *Emerging Adulthood: The Winding Road from the Late Teens through the Twenties*. Oxford Press: Oxford, UK.
- Conger, Rand, Ming Cui, Chalandra Bryant, and Glen Elder. 2000. "Competence in Early Adult Romantic Relationship: A Developmental Perspective on Family Influence." *Journal of Personality and Social Psychology* 79: 224-237.
- Crockett, Lisa, and Brandy Randall. 2006. "Linking Adolescent Family and Peer Relationships to the quality of Young Adult Romantic Relationships: The mediating Role of Conflict Tactics." *Journal of Social and Personal Relationships* 23: 761-780.
- Cunningham, Mick. 2008. "Changing Attitudes toward the Male Breadwinner, Female Homemaker Family model: Influences of Women's Employment and Education over the Lifecourse." *Social Forces* 87: 299-323.
- Desiderato, Laurie, and Helen Crawford. 1995. "Risky Sexual Behavior in College Students: Relationships between the number of Sexual Partners, Disclosure of Previous Risky Behavior, and Alcohol Use." *Journal of Youth and Adolescence* 24: 55-68.
- Elder, Glen. 1985. "Perspectives on the Life Course" Pp 23-49 in *Life Course Dynamics Trajectories and Transitions, 1968-1980*, edited by Glen Elder Cornell University Press: Ithaca, NY.
- Elder, Glen. 1995. "The Life Course Paradigm: Social Change and Individual Development." Pp 101-139 in *Examining Lives in Context*, edited by Phyllis Moen, Glen Elder, and Kurt Lüscher American Psychological Association: Washing, DC.
- England, Paula, Emily Fitzgibbons Shafer, and Alison C. K. Fogarty. 2007. "Hooking Up and Forming Romantic Relationships on Today's College Campuses." In *The Gendered Society Reader*, edited by Michael Kimmel. New York: Oxford University Press.
- Feldman, Shirley, Doreen Rosenthal, Nancy Brown, and Robert Canning. 1995. "Predicting Sexual Experience in Adolescent Boys from Peer Rejection and Acceptance During Childhood." *Journal of Research on Adolescence* 5: 387-411.
- Glenn, Norval and Elizabeth Marquardt. 2001. "Hooking Up, Hanging Out, and Hoping for Mr. Right—College." <http://www.iwf.org/campuscorner/hooksup.asp>. retrieved. February 2004.

- Grello, Catherine, Deborah Welsh, and Melinda Harper. 2006. "No Strings Attached: The Nature of Casual Sex in College Students." *Journal of Sex Research* 43: 255-267.
- Lefkowitz, Eva. 2005. "Things Have Gotten Better: Developmental Changes Among Emerging Adults After the Transition to University." *Journal of Adolescent Research* 20: 40-63.
- Manlove, Jennifer, Suzanne Ryan, and Derry Franzetta. 2007. "Contraceptive Use Patterns Across Teens' Sexual Relationship." *Demography* 44: 603-621.
- Manning, Wendy, Monica Longmore, and Peggy Giordano. 2000. "The Relationship Context of Contraceptive Use at First Intercourse." *Family Planning Perspectives* 32: 104-110.
- Manning, Wendy, Monica Longmore, and Peggy Giordano. 2005. "Adolescents' Involvement in Non-Romantic Sexual Activity." *Social Science Research* 34: 384-407.
- Manning, Wendy, Peggy Giordano, and Monica Longmore. 2006. "Hooking Up: The Relationship Contexts of Nonrelationship Sex." *Journal of Adolescence Research* 21: 459-483.
- Meier, Ann, and Gina Allen. 2007. "Romantic Relationships from Adolescence to Young Adulthood: Evidence from the National Longitudinal Study of Adolescent Health." Working Paper Minnesota Population Center N. 2007-03.
- Mosher William, Chandra Anjani, Jones Jones. 2005. "Sexual Behavior and Selected Health Measures: Men and Women 15-44 Years of Age, United States, 2002." National Center for Health Statistics. Vital Health Stat 362.
- Osgood, D. Wayne, Gretchen Ruth, Jacquelynne Eccles, Janis Jacobs, and Bonnie Barber. 2005. "Six Paths to Adulthood Fast Starters, Parents without Careers, Educated Partners, Educated Singles, Working Singles, and Slow Starters." Pp 320-355 in *On the Frontier of Adulthood* ed by Richard Settersten, Frank Furstenberg, and Ruben Rumbaut. University of Chicago Press: Chicago, IL
- Paul, Elizabeth. 2006. "Beer Goggles, Catching Feelings, and the Walk of Shame: The Myths and Realities of the Hookup Experience." Pp 144-160 in *Relating Difficulty: The Processes of Constructing and Managing Difficult Interaction* ed by D. Charles Kirkpatrick, Steve Duck, and Megan Foley. Lawrence Erlbaum Associates: Mahwah, NJ.
- Paul, Elizabeth and Kristen Hayes. 2002. "The Casualties of 'Casual' Sex: A Qualitative Exploration of the Phenomenology of College Students' Hookups." *Journal of Social Personal Relationships*, 19:639-661.
- Paul, Elizabeth, Brian McManus, and Allison Hayes. 2000. "Hookups: Characteristics and Correlates of College Students' Spontaneous and Anonymous Sexual Experiences." *The Journal of Sex Research*, 37: 76-88.

- Raley, Kelly, Sarah Crissey, and Chandra Muller. 2007. "Of Sex and Romance: Late Adolescent Relationships and Young Adult Union Formation." *Journal of Marriage and Family* 69: 1210-1226.
- Regan, Pamela, Carla Dreyer. 1999. "Lust? Love? Status? Young Adults' Motives for Engaging in Casual Sex." *Journal of Psychology and Human Sexuality* 11: 1-24.
- Sandefur, Gary, Jennifer Eggerling-Boeck, and Hyunjoon Park. 2005. "Off to a Good Start? Postsecondary Education and Early Adult Life." Pp 292-319 in *On the Frontier of Adulthood* ed by Richard Settersten, Frank Furstenberg, and Ruben Rumbaut. University of Chicago Press: Chicago, IL.
- U.S. Census Bureau. 2007. American Community Survey. Table B14004.  
[http://factfinder.census.gov/servlet/DTTable?\\_bm=y&-geo\\_id=01000US&-ds\\_name=ACS\\_2007\\_1YR\\_G00\\_&-SubjectID=15234489&-lang=en&-mt\\_name=ACS\\_2007\\_1YR\\_G2000\\_B14004&-format=&-CONTEXT=dt](http://factfinder.census.gov/servlet/DTTable?_bm=y&-geo_id=01000US&-ds_name=ACS_2007_1YR_G00_&-SubjectID=15234489&-lang=en&-mt_name=ACS_2007_1YR_G2000_B14004&-format=&-CONTEXT=dt). Retrieved November 16, 2008.



Table 1. Univariate

	Mean	SD	Frequency	%
<b>Dependent Variable</b>				
Lifetime Casual Sex Partners	2.2	6.5		
<b>Time</b>				
Age	18.4	2.2		
15			293	9%
16			353	12%
17			466	16%
18			569	19%
19			255	9%
20			451	15%
21			221	8%
22			253	9%
23			103	3%
<b>Independent Variables</b>				
Female			1764	52%
Male (omitted)			1612	48%
<i>Substance Use</i>				
Alcohol	3.4	2.2		
Drugs	2.0	2.1		
<i>Peer Variables</i>				
Peers' Sexual Behavior	4.4	1.6		
Peers' Liberal Sex Attitudes	8.7	2.6		
<i>Social Psychological Indicators</i>				
Self-Esteem	24.0	3.6		
Depressive Symptoms	17.0	8.8		
<i>Traditional Values Variables</i>				
Religiosity	3.2	1.3		
Liberal Sex Attitudes	10.7	3.6		
<i>Family Variables</i>				
Two Biological Parent Family (omitted)			1736	51%
Single Parent Family			788	23%
Step Family			452	14%
Other Family Formation			404	12%
Parent Relationship Quality	17.6	6.2		

N=3380

Source: Toledo Adolescent Relationship Study Waves One through Four

Note: Some frequencies do not add up to the total sample because the data are unbalanced

Table 2. Growth Curve Analysis Gender and Substance Use on Number of Log Casual Sex Partners

		Parameter	Model A	Model B	Model C
Fixed Effects					
Initial Status	Intercept	$\gamma_{00}$	0.05 **	0.09 **	0.04
		$\pi_{0i}$			
	Female	$\gamma_{01}$		-0.07	-0.09 **
	Alcohol Use	$\gamma_{02}$			0.02 †
	Drug Use	$\gamma_{03}$			0.02 †
Rate of Change					
Rate of Change	Intercept	$\gamma_{10}$	0.16 ***	0.19 ***	0.15 ***
		$\pi_{1i}$			
	Female	$\gamma_{12}$		-0.06 ***	-0.05 ***
	Alcohol Use	$\gamma_{13}$			0.00 *
	Drug Use	$\gamma_{14}$			0.00
Variance Components					
		$\sigma^2_e$	0.11 ***	0.11 ***	0.13 ***
Level-1 Within					
Level-2	Initial Status	$\sigma^2_0$	0.22 ***	0.22 ***	
	Rate of change	$\sigma^2_1$	0.02 ***	0.02 ***	0.02 ***
		$\sigma^2_{\text{Alcohol Use}}$			0.01 ***
		$\sigma^2_{\text{Drug Use}}$			0.01 ***
R <sup>2</sup> and Goodness-of-Fit					
	Deviance		4782.60	4761.20	4720.70
	AIC		4790.60	4769.20	4734.70
	BIC		4809.50	4788.20	4767.90
	global R <sup>2</sup>		0.16	0.19	0.23

Source: Toledo Adolescent Relationship Study Waves One through Four

Note: \*\*\* p<.001 \*\*p<.01 \*p<.05 †<.1

Table 3. Growth Curve Analysis of Gender and Peer Variables on Number of Log Casual Sex

		Partners			
		Parameter	Model A	Model B	Model C
Fixed Effects					
Initial Status	Intercept	$\gamma_{00}$	0.05 **	0.09 **	-0.16 **
$\pi_{0i}$					
	Female	$\gamma_{01}$		-0.07	-0.01
	Peers' Sexual Behavior	$\gamma_{02}$			0.03 **
	Peers' liberal Sex Attitudes	$\gamma_{03}$			0.02 **
Rate of Change					
Rate of Change	Intercept	$\gamma_{10}$	0.16 ***	0.19 ***	0.05 *
$\pi_{1i}$					
	Female	$\gamma_{11}$		-0.06 ***	-0.05 ***
	Peers' Sexual Behavior	$\gamma_{12}$			0.01 *
	Peers' Liberal Sex Attitudes	$\gamma_{13}$			0.01 **
Variance Components		$\sigma^2_{\epsilon}$	0.11 ***	0.11 ***	0.11 ***
Level-1 Within					
Level-2	Initial Status	$\sigma^2_0$	0.22 ***	0.22 ***	0.01 ***
	Rate of change	$\sigma^2_1$	0.02 ***	0.02 ***	0.00 ***
		$\sigma^2_{\text{Peers' Sexual Behavior}}$			
		$\sigma^2_{\text{Peers' Liberal Attitudes}}$			0.00 ***
R <sup>2</sup> and Goodness-of Fit					
	Deviance		4782.60	4761.20	4420.40
	AIC		4790.60	4769.20	4428.40
	BIC		4809.50	4788.20	4447.30

Table 4. Growth Curve Analysis of Log Casual Sex Partners: Unconditional Growth Model by Gender

		Parameter	Female Model	Male Model
<b>Fixed Effects</b>				
Initial Status	Intercept	$\gamma_{00}$	0.02	0.09 *
				$\pi_{0i}$
Rate of Change	Intercept	$\gamma_{10}$	0.14 ***	0.19 ***
				$\pi_{1i}$
Variance Components		$\sigma^2_{\epsilon}$	0.09 ***	0.13 ***
Level-1 Within				
Level-2	Initial Status	$\sigma^2_0$	0.13 ***	0.32 ***
	Rate of change	$\sigma^2_1$	0.01 ***	0.02 ***
<b>R<sup>2</sup> and Goodness-of-Fit</b>				
Deviance			2097.00	2568.2
AIC			2105.10	2576.2
BIC			2121.40	2592.2
global R <sup>2</sup>			0.15	0.18

Source: Toledo Adolescent Relationship Study Waves One through Four

Note: \*\*\* p<.001 \*\*p<.01 \*p<.05 †<.1

Table 5. Growth Curve Analysis of Peer Variables on Number of Log Casual Sex Partners Separated by Females and Males

		Parameter	Female Model	Male Model
<b>Fixed Effects</b>				
Initial Status	Intercept	$\gamma_{00}$	-0.18 **	-0.14 †
$\pi_{0i}$				
	Peers' Sexual Behavior	$\gamma_{01}$	0.04 **	0.02
	Peers' liberal Sex Attitudes	$\gamma_{02}$	0.02 *	0.03 *
Rate of Change	Intercept	$\gamma_{10}$	0.02	0.01
$\pi_{1i}$				
	Peers' Sexual Behavior	$\gamma_{11}$	0.01 ***	0.02 ***
	Peers' Liberal Sex Attitudes	$\gamma_{12}$	0.01 *	0.00
Variance Components		$\sigma^2_{\epsilon}$	0.08 ***	0.13 ***
Level-1 Within				
Level-2				
	Rate of change	$\sigma^2_1$	0.01 ***	0.02 ***
		$\sigma^2_{\text{Peers' Sexual Behavior}}$	0.01 ***	
		$\sigma^2_{\text{Peers' Liberal Sex Attitudes}}$	0.00	0.00 ***
<b>R<sup>2</sup> and Goodness-of-Fit</b>				
	Deviance		1847.00	2413.90
	AIC		1861.00	2421.90
	BIC		1889.60	2437.90
	global R <sup>2</sup>		0.26	0.31

Source: Toledo Adolescent Relationship Study Waves One through Four

Note: \*\*\* p<.001 \*\*p<.01 \*p<.05 †<.1

Table 6. Growth Curve Analysis of Gender and Social Psychological Indicators on Number of Log Casual Sex Partners

		Parameter	Model A	Model B	Model C
Fixed Effects					
Initial Status	Intercept	$\gamma_{00}$	0.05 **	0.09 **	0.06
$\pi_{0i}$					
	Female	$\gamma_{01}$		-0.07	-0.06
	Self Esteem	$\gamma_{02}$			0.00
	Depressive Symptoms	$\gamma_{03}$			0.00
Rate of Change	Intercept	$\gamma_{10}$	0.16 ***	0.19 ***	0.20 ***
$\pi_{1i}$					
	Female	$\gamma_{11}$		-0.06 ***	-0.06 ***
	Self Esteem	$\gamma_{12}$			0.00
	Depressive Symptoms	$\gamma_{13}$			0.00
Variance Components		$\sigma^2_{\epsilon}$	0.11 ***	0.11 ***	0.12 ***
Level-1 Within					
Level-2	Initial Status	$\sigma^2_0$	0.22 ***	0.22 ***	
	Rate of change	$\sigma^2_1$	0.02 ***	0.02 ***	0.02 ***
		$\sigma^2_{\text{Self Esteem}}$			0.00 ***
<hr/>					
R <sup>2</sup> and Goodness-of-Fit					
	Deviance		4782.60	4761.20	4809.00
	AIC		4790.60	4769.20	4817.00
	BIC		4809.50	4788.20	4836.00
	global R <sup>2</sup>		0.16	0.19	0.21

Source: Toledo Adolescent Relationship Study Waves One through Four

Note: \*\*\* p<.001 \*\*p<.01 \*p<.05 †<.1

Table 7. Growth Curve Analysis of Gender and Traditional Views on Number of Log Casual Sex Partners

		Parameter	Model A	Model B	Model C
Fixed Effects					
Initial Status	Intercept	$\gamma_{00}$	0.05 **	0.09 **	-0.12
$\pi_{0i}$					
	Female	$\gamma_{01}$		-0.07	0.04
	Religiosity	$\gamma_{02}$			-0.02
	Liberal Sex Attitudes	$\gamma_{03}$			0.02 ***
Rate of Change					
Intercept		$\gamma_{10}$	0.16 ***	0.19 ***	0.05 *
$\pi_{1i}$					
	Female	$\gamma_{11}$		-0.06 ***	-0.04 ***
	Religiosity	$\gamma_{12}$			0.01 *
	Liberal Sex Attitudes	$\gamma_{13}$			0.01 ***
Variance Components		$\sigma^2_{\epsilon}$	0.11 ***	0.11 ***	0.11 ***
Level-1 Within					
Level-2	Initial Status	$\sigma^2_0$	0.22 ***	0.22 ***	
	Rate of change	$\sigma^2_1$	0.02 ***	0.02 ***	0.02 ***
		$\sigma^2_{\text{Religiosity}}$			
		$\sigma^2_{\text{Liberal Attitudes}}$			0.00 ***
R <sup>2</sup> and Goodness-of-Fit					
	Deviance		4782.60	4761.20	4417.70
	AIC		4790.60	4769.20	4425.70
	BIC		4809.50	4788.20	4444.70
	global R <sup>2</sup>		0.16	0.19	0.38

Source: Toledo Adolescent Relationship Study Waves One through Four

Note: \*\*\* p<.001 \*\*p<.01 \*p<.05 †<.1

Table 8. Growth Curve Analysis of Traditional Views on Number of Log Casual Sex Partners Separated by Females and Males

		Parameter	Female Model	Male Model
<b>Fixed Effects</b>				
Initial Status	Intercept	$\gamma_{00}$	0.01	-0.21 †
$\pi_{0i}$				
	Religiosity	$\gamma_{01}$	-0.03 *	0.00
	Liberal Sex Attitudes	$\gamma_{02}$	0.02 **	0.03 ***
Rate of Change	Intercept	$\gamma_{10}$	0.01	0.04
$\pi_{1i}$				
	Religiosity	$\gamma_{11}$	0.01	0.01 †
	Liberal Sex Attitudes	$\gamma_{12}$	0.01 ***	0.01 ***
Variance Components		$\sigma^2_{\epsilon}$	0.10 ***	0.14 ***
Level-1 Within				
Level-2				
	Rate of change	$\sigma^2_1$	0.01 ***	0.02 ***
		$\sigma^2_{\text{Religiosity}}$	0.00	
		$\sigma^2_{\text{Liberal Sex Attitudes}}$	0.00 ***	0.00 ***
<hr/>				
<b>R<sup>2</sup> and Goodness-of-Fit</b>				
	Deviance		1888.10	2443.70
	AIC		1902.10	2451.70
	BIC		1930.70	2467.70
	global R <sup>2</sup>		0.31	0.31

Source: Toledo Adolescent Relationship Study Waves One through Four

Note: \*\*\* p<.001 \*\*p<.01 \*p<.05 †<.1



Table 9 Growth Curve Analysis of Gender and Family Variables on Number of Log Casual Sex Partners

		Parameter	Model A	Model B	Model C
Fixed Effects					
Initial Status	Intercept	$\gamma_{00}$	0.10 ***	0.09 **	0.44 ***
$\pi_{0i}$					
	Female	$\gamma_{01}$		-0.07	-0.08 *
	Single	$\gamma_{02}$			0.12 *
	Step	$\gamma_{03}$			0.21 ***
	Other	$\gamma_{04}$			0.24 ***
	Parent Relationship	$\gamma_{05}$			-0.02 ***
Rate of Change					
Rate of Change	Intercept	$\gamma_{10}$	0.13 ***	0.19 ***	0.14 ***
$\pi_{1i}$					
	Female	$\gamma_{11}$		-0.06 ***	-0.06 ***
	Single	$\gamma_{12}$			0.05 **
	Step	$\gamma_{13}$			0.05 **
	Other	$\gamma_{14}$			0.01
	Parent Relationship	$\gamma_{15}$			0.00
Variance Components					
		$\sigma^2_e$	0.23 ***	0.11 ***	0.13 ***
Level-1 Within					
Level-2	Initial Status	$\sigma^2_0$	0.09 ***	0.22 ***	
	Rate of change	$\sigma^2_1$	0.01 ***	0.02 ***	0.02 ***
		$\sigma^2_{\text{Parental Relationship}}$			0.00 ***
R <sup>2</sup> and Goodness-of-Fit					
		Deviance	5679.70	4761.20	4894.00
		AIC	5687.70	4769.20	4902.00
		BIC	5706.70	4788.20	4921.00
		global R <sup>2</sup>	0.11	0.19	0.23

Source: Toledo Adolescent Relationship Study Waves One through Four

Note: \*\*\* p<.001 \*\*p<.01 \*p<.05 †<.1

Table 10. Growth Curve Analysis of Family Variables on Number of Log Casual Sex Partners Separated by Females and Males

		Parameter	Female Model	Male Model
<b>Fixed Effects</b>				
Initial Status	Intercept	$\gamma_{00}$	0.37 ***	0.50 **
$\pi_{0i}$				
	Single	$\gamma_{01}$	0.11 *	0.13
	Step	$\gamma_{02}$	0.14 *	0.27 **
	Other	$\gamma_{03}$	0.14 *	0.37 **
	Parent Relationship	$\gamma_{04}$	-0.02 ***	-0.03 **
Rate of Change	Intercept	$\gamma_{10}$	0.10 **	0.13 *
$\pi_{1i}$				
	Single	$\gamma_{11}$	0.04 *	0.06 *
	Step	$\gamma_{12}$	0.04 †	0.05 †
	Other	$\gamma_{13}$	0.00	0.03
	Parent Relationship	$\gamma_{14}$	0.00	0.00
Variance Components		$\sigma^2_{\epsilon}$	0.12 ***	0.16 ***
Level-1 Within				
Level-2				
	Rate of change	$\sigma^2_1$	0.01 ***	0.02 ***
		$\sigma^2_{\text{Parental Relationship}}$	0.00 ***	0.00 ***
<hr/>				
<b>R<sup>2</sup> and Goodness-of-Fit</b>				
	Deviance		2172.20	2657.20
	AIC		2180.20	2665.20
	BIC		2196.50	2681.20
	global R <sup>2</sup>		0.20	0.23

Source: Toledo Adolescent Relationship Study Waves One through Four

Note: \*\*\* p<.001 \*\*p<.01 \*p<.05 †<.1