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Heterosexual Casual Sex and STI Diagnosis: A Latent Class Analysis

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Abstract

Casual sex is common during the emerging adult life course stage, but little research has taken a person-centered approach to investigate if casual sexual behavior influences STI rates. Using a nationally representative sample and latent class analysis, results showed three distinctive latent classes. Abstainers were the least likely to have an STI, followed by the casual sex experienced, and then the casual sex risk-takers. Once other covariates were included in the model, there was no significant difference between the abstainers and casual sex experienced classes. These results highlight the need for future research to include diverse samples of emerging adults.

Keywords

Casual Sex; Young Adults; Sexually Transmitted Diseases; Life Course

Larger society often views casual sex from a moral and risk perspective (Ahrold & Meston, 2010; Ellison, Wolfinger, & Ramos-Wada, 2013). This is also reflected in previous research which frequently portrays casual sex as risky, but it is important to delineate between a true health risk and something that is a part of a normative and developmental process. National estimates suggested that casual sex was becoming more common for recent generations of college students compared to previous generations. Forty-five percent of emerging adults in 2004–2012 had sex within the last year with a casual date compared to 35% of emerging adults in 1988–1996 (Monto & Carey, 2014). Most prior studies on casual sexual behavior utilized a variable-centered approach to studying casual sex, but emerging adult casual sexual behavior has been shown to be multidimensional (Rodrigue et al., 2015). The current study moved beyond prior casual sex research by taking a person-centered approach to investigating casual sexual behavior of emerging adults. Further, it was determined if patterns of casual sex influenced sexually transmitted infection (STI) diagnosis both cross-sectionally and longitudinally using a nationally representative sample.

Studying emerging adult casual sexual behavior was important for several reasons. First, according to the Centers for Disease Control and Prevention (2014), for Americans, the age group 20–24 was when STI rates peaked. For example, among women aged 20–24, the rate

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for reported cases of chlamydia was 3,624.1 per 100,000. The second largest group was 15–19 with 3,043.3, and the third largest group was 25–29 with only 1,428.3 reported cases. Understanding what types of behaviors predict STI diagnosis can inform intervention strategies on how to decrease STIs among this high-risk population. Generally speaking, some patterns of casual sexual behavior may have been considered high-risk because of the possible correlation with STIs and unplanned pregnancy (Cooper, 2002). Second, while there may have been an association between the broader behavior of hooking up–activity that may or may not have included casual sex–and STIs among college students (Fielder, Walsh, Carey, & Carey, 2014), little research directly tested if patterns of casual sexual behavior increased the chance of STIs. Finally, most prior studies on casual sex took a variable-centered method when studying casual sexual behavior (Bersamin et al., 2014; Fielder & Carey, 2010b; Grello, Welsh, & Harper, 2006). A person-centered approach allowed for the investigation of how patterns of casual sexual behavior influenced STI rates. According to Collins and Lanza (2010), a variable-centered approach to research would include a focus on statistical relationships between variables such as investigating the relationship between ever having casual sex and STI diagnosis. A person-centered analysis would focus on patterns within an individual. Moving beyond just examining one marker of casual sex and STI rates, person-centered research would explore if there were patterns of casual sexual behavior within the individual. Specifically, latent class modeling measured if there were subgroups within the larger population which would be statistically characterized by specific patterns of casual sexual behaviors. Thus, the person-centered approach permitted for a more nuanced understanding of emerging adult casual sexual behavior. Determining which patterns of casual sexual behavior were associated with a higher risk of STIs could inform counselors and other groups who work with the emerging adult population to assess sexual health need.

LITERATURE REVIEW

Life Course Theory and Emerging Adult Sexual Behavior

Applying life course theory to emerging adult (ages 18–29) casual sex provided new insight for this behavior. Two major assumptions of life course theory were used as guidance for the research question. First, larger societal structure and historical time influenced social age (Elder, 1998). Second, each life course stage was associated with specific age-graded behaviors (Elder, 1996). As noted above, one assumption of life course theory was that social age was culturally constructed as a result of societal history and the larger social structure. Arnett (2000) argued that because of societal changes, there had been a creation of the emerging adult life course stage that had associated behaviors and roles which made this life course stage different than both adolescence and adulthood. Some of these major changes were the increase in higher education enrollment and the delaying of marriage. Forty-one percent of 18–24-year-olds were enrolled in higher education (U.S Census Bureau, 2014), but people were also delaying marriage more than any other generation with the median age at first marriage being 27.6 for women and 29.5 for men (U.S. Census Bureau, 2014). Another important transition to consider was that most, 87%, of Americans ages 20–24 had at least one opposite-sex partner during their lifetime and most (83%) Americans left their teen years having experienced sexual debut (Chandra, Mosher, &

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Copen, 2011). All of this together suggested that the majority of emerging adults were sexually experienced, but had not transitioned into adult life course roles such as marriage. Thus, there had been an increased opportunity for casual sex during the emerging adult years.

Another main postulate of life course theory was that there were specific age-graded behaviors associated with each life course stage. More specifically, there were socially constructed age expectations about the sequencing, timing, and meaning of life course events. One such behavior that was associated with the emerging adulthood stage was identity exploration regarding relationships, work, and worldview (Arnett, 2000). For many, emerging adulthood was a time to be self-focused and develop an understanding of who they are as a person. According to Arnett (2015), for people who wanted to experience an array of sexual behaviors and relationships, emerging adulthood was viewed as the time to do it. Further, he argued that emerging adults could come to understand their own sexual identity by experiencing different types of sexual relationships—which may have included casual sex—further determining what they liked and did not like in relationships. The idea that emerging adulthood was associated with exploring different types of partnerships was qualitatively supported by the notion that among an educationally diverse sample of emerging adults, a motivation for having casual sex was that they "felt too young to be tied down" to one person (Lyons, Manning, Longmore, & Giordano, 2014). Indeed, when individuals started to age out of the emerging adulthood life course stage and began to have subjective adult identity or "feel like an adult" they were significantly less likely to participate in the emerging adult behavior of casual sex in the nationally representative sample of the National Longitudinal Study of Adolescent to Adult Health (Add Health) (Lyons, 2015). This relationship exploration during emerging adulthood suggested that casual sexual behavior may be thought of as an age-graded behavior.

Emerging adult sexual behavior could and often did include casual sex, and some casual sex during emerging adulthood might have been a part of the developmental process of this life course stage. Through experiencing multiple sexual and romantic partners, emerging adults might have learned about what they liked in a partner and come to understand their own identity and sexual self-concept. Not only were there possible identity outcomes that were a result of casual sexual behavior, there were also potential health outcomes such as STI diagnosis. Nationally, emerging adults were more likely to have multiple partners during the past 12 months compared to any other age group (Mosher, Chandra, & Jones, 2005). Further, among an educationally diverse sample, emerging adults were more likely to have had casual sexual partners compared to adolescents (Lyons, Manning, Longmore, & Giordano, 2015). Because of the high rates of romantic and casual sexual behavior during emerging adulthood, it was not surprising that in the United States, STI rates peaked during this life course stage (Centers for Disease Control and Prevention, 2014).

In sum, having some casual sexual experiences may have not always lead to the same STI risk. Some casual sex may have been a part of the developmental process as people transitioned toward adulthood; however, too many casual sexual behaviors may have started to become a risk factor for negative outcomes. Consequently, it was possible that different patterns of casual sexual behavior would be associated with diverse STI risk.

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Prior Studies on Casual Sex

Prior literature reported that casual sexual behavior was associated with both positive and negative outcomes. For example, some research that used college-based samples found that casual sex was correlated with decreased well-being and higher psychological distress, substance use, and depressive symptoms (Bersamin et al., 2014; Fielder & Carey, 2010a; Grello et al., 2006). Other research that used college students reported that casual sex was not always associated with negative emotional and social ramifications (Strokoff, Owen, & Fincham, 2015). In fact, college students claimed more positive emotional consequences of hooking up compared to negative ramifications (Snapp, Ryu, & Kerr, 2015). Vrangalova and Ong (2014) stated that among college students, casual sex was not associated with self-esteem, life satisfaction, depression, or anxiety. Similarly, Manning, Longmore, Copp, and Giordano (2014) reported that among an educationally diverse sample of 18- and 19-year-olds, the number of casual sexual partners was not correlated with depressive symptoms, self-esteem, or relationship satisfaction. Thirty-five percent of college students felt regret or disappointment after a typical hookup which means that 65% did not regret hooking up (Paul & Hayes, 2002). Finally, Manning, Giordano, and Longmore (2006) report that among educationally diverse youth, casual sexual relationships could lead to committed relationships, feeling closer to the casual sexual partner, and approval from peers. As highlighted in previous research, there were possible risks to having casual sex, but casual sex was not universally negative.

Emerging adults took varying pathways and trajectories through this life course stage (Osgood, Ruth, Eccles, Jacobs, & Barber, 2005). While most emerging adults had some casual sex experience-67% of sexually active college seniors (Armstrong, England, & Fogarty, 2009), the average number of casual sexual partners among educationally diverse emerging adults was relatively small with a mean number of 1.5 partners (Manning et al., 2014). Taking a person-centered approach to understanding casual sexual behavior proposes that not all patterns of casual sexual behavior would be the same, and not all casual sexual experiences would lead to the same risk of STIs.

Sassler (2010) noted that a limitation of the casual sex literature was that most of the studies used samples of college students which restricted our understanding of non-college educated emerging adults. There were a few exceptions of casual sex studies that used educationally diverse samples of emerging adults and these studies also reported that casual sex was common. For example, 23 percent of respondents six months after high school graduation had casual sex during that same period and college enrollment was negatively associated with ever experiencing casual sex (Bailey, Fleming, Henson, Catalano, & Haggerty, 2008). Further, among sexually active and educationally diverse 18–19-year-olds, 49% reported having sex with a casual partner (Manning et al., 2014). Finally, college students had some of the lowest numbers of casual sexual partners compared to their less educated peers (Lyons, Manning, Giordano, & Longmore, 2013) which suggested that studies that used college student samples most likely underestimated the prevalence of casual sex in the larger population. This was echoed by Manning, Longmore, and Giordano (2005) who used the nationally representative Add Health and reported that 60% of sexually active teenagers had experienced casual sex before they entered emerging adulthood. Thus, previous casual sex

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studies that used college-based samples were limited by not being nationally representative along with providing estimates that were biased toward an advantaged subgroup of the emerging adult population.

Measuring Casual Sex

Similar to prior studies, the current investigation conceptualized casual sex as having vaginal intercourse outside of a romantic/committed relationship (Eisenberg, Ackard, Resnick, & Neumark-Sztainer, 2009). Casual sex was different than the broader behavior of hooking up which could include vaginal sex, kissing, and anything in between. Most past studies measured casual sex as either number of partners (Wentland & Reissing, 2014), last partner was casual (Eisenberg et al., 2009), or ever having casual sex (Bailey et al., 2008). Very little research had examined casual sexual behavior from a person-centered approach with a multidimensional operationalization of casual sex. Four different measures of casual sex were used in the current study: (1) number of casual sexual partners, (2) age at casual sexual debut, (3) how many times had sex with a casual sexual partner, and (4) how long knew partner before having casual sex. Each of these behaviors could have been associated with varying risk. Because of the possibility of exposure to more partners, it was expected that more casual sexual partners would be associated with a higher potential for STI diagnosis (Fielder & Carey, 2010a). Earlier age of sexual debut was associated with an increase in STI occurrence (Upchurch, Mason, Kusunoki, & Kriechbaum, 2004), and similarly, earlier casual sexual debut could lead to earlier exposure to STI risk. Finally, having sex only one time with a partner was attempting to capture one-night stands, and if an emerging adult only knew the casual sexual partner for a day or less measured sex with strangers. While there was no previous research that directly tested the relationship between STI diagnosis and these last two types of casual sexual relationships, pervious research (Bersamin et al., 2014; Paul, McManus, & Hayes, 2000) had conceptualized casual sexual behavior in this way and thus these casual sex measures were included in the current analysis.

As noted above, limited studies have examined the direct relationship between casual sex and STIs. One exception was that hooking up was associated with STI diagnosis among college females (Fielder et al., 2014). This study's findings should be used with caution because of the small sample size. Only ten respondents in the study had an STI diagnosis. Even though the association between casual sex and STIs was understudied, the relationship between casual sex and condom use was investigated. Condom use was thought of as a proxy for STI risk because low condom use may have increased the risk of an STI. There have been mixed results between condom use and casual sexual behavior. When using educationally diverse samples of youth, condom use was more common at first sex if the partner was casual (51%), compared to if first sex happened in a committed relationship (38%) (Gibbs, 2013); however, ever having casual sex was associated with inconsistent condom use (Bailey et al., 2008). In addition, even though condom use was higher in casual sexual relationships compared to with committed partners, between 30% –50% of people who had casual sex, did not use a condom with their partner which would put them at risk for an STI (Fielder & Carey, 2010b; Gibbs, 2013). In sum, large amounts of casual sex may have been correlated with higher rates of STI diagnosis because casual sexual behavior was associated with inconsistent condom use. As highlighted above, unreliable condom use

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occurred in both committed and casual relationships, but the current study focused on casual sex.

Other Covariates of STIs

There were other important predictors of STI rates that were included in the current analysis. For example, in the Add Health, males and whites were less likely to have an STI diagnosis during the past year compared to females and non-whites (Scott et al., 2011). The current analysis built on previous STI studies by examining not only if there were gender differences in reporting STIs, but also whether there were gender differences in how the covariates influenced STI diagnosis. Being raised in a two-parent home was negatively associated with STIs and the more educated an adolescent's mother was, the less likely the teen was to report an STI in the Add Health (Upchurch et al., 2004). Being enrolled in college was a protective factor against STI diagnosis in the Add Health sample (Annang, Walsemann, Maitra, & Kerr, 2010). Among college students, alcohol use was found to be positively associated with unprotected casual sex (Kiene, Barta, Tennen, & Armeli, 2009) and not using a condom during casual sex increased the possibility of acquiring an STI in a community-based sample of emerging adults (Seth, Wingood, DiClemente, & Robinson, 2011). Because of time of exposure to risk and the fact that STI rates peaked at ages 20–24, it was expected that age would be positively associated with STIs (Centers for Disease Control and Prevention, 2014).

Hypotheses

The current investigation examined four main hypotheses. First, latent class analysis was used to determine if there were statistically and theoretically different patterns of casual sexual behaviors. Based on the fact that there was such limited person-centered casual sexual research, it was difficult to predict the number of latent classes that would fit the data. Therefore, I only hypothesized that there would be different patterns of casual sexual behavior. Second, it was anticipated that the latent class that experienced the most risky casual sexual behaviors (e.g. more partners, earlier casual sexual debut, had casual sex with a partner only once, and had casual sex with a stranger) would also have had the highest probability of STI diagnosis. Any latent classes that were characterized as having fewer of these casual sexual behaviors would have lower STI risk. Third, it was projected that the relationship between the latent classes and STI diagnosis would remain significant net of the control variables (e.g. gender, race/ethnicity, and family structure). Finally, it was anticipated that there would be significant gender interactions. Specifically, because of gender socialization males would benefit more from education and females would experience more risk because of drinking. Because females are more susceptible to STIs, it was thought unprotected sex would be more harmful for females.

METHODS

Sample and Procedures

To investigate the current research question, the National Longitudinal Study of Adolescent to Adult Health (Add Health) was utilized. The Add Health was a four-wave longitudinal study. The first wave was collected during the 1994–1995 school year and was nationally

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representative of adolescents in 7th–12th grade. Wave 2 was collected in 1996. The present study used wave 3 and wave 4 which were conducted in 2001–2002 and 2008–2009, respectively. All the surveys were completed using laptop computers and for sensitive material, such as casual sex and STI diagnosis, respondents entered their answers to ensure privacy of the information. Most of the interviews occurred in the participant's home. The wave 1 sample size was N = 20,745, wave 2 N = 14,738, wave 3 N = 15,197, and finally wave 4 N = 15,701. The response rate from wave 1 to 4 was 76%.

The final analytic sample for the wave 3 analysis was N = 14,030. As noted above, wave 3 had 15,197 cases, and N = 875 were not included because the observations were missing on the weight variables. Next, N = 292 cases were eliminated because they were missing on all of the casual sex measures which lead to a sample size of N = 14,030. The final sample for the longitudinal analysis included the valid cases from the wave 3 analysis (N = 14,030) minus 1,978 observations that were missing on the wave 4 weight variables. The final analytic sample for the longitudinal assessment was N = 12,052. Respondents who were in the wave 3 analysis but not in the wave 4 analysis were significantly more likely to be male ($F(1,128) = 30.3$; p= .000), a minority ($F(2.7,350.7) = 12.2$; p= .000), have a mother without a high school degree ($F(3.6,463.9) = 3.9$; p= .005), and not currently enrolled in college ($F(1,128) = 6.1$; p= .015). Family structure ($F(4.3,543.9) = 1.8$; p= .116) and having a high school degree ($F(1,128) = 6.72$; p= .105) were not associated with attrition.[1]

Measures

Sexually Transmitted Infection—The dependent variable of STI diagnosis was measured at wave 3 and wave 4. At both waves, respondents were asked, "In the past 12 months, have you been told by a doctor or nurse that you had the following sexually transmitted diseases?" Respondents were asked about 13 different STIs ranging from "chlamydia" to "HIV/AIDS." If respondents stated that they were told they had, at least, one of the STIs they were coded as "1" otherwise respondents were coded as "0" (omitted group). The current study measured STIs similarly to other studies that used the wave 4 Add Health data (Vasilenko, Kugler, Butera, & Lanza, 2015).

Types of Casual Sexual Behavior—In wave 3 of the Add Health, respondents were asked about every sexual relationship they had in a detailed relationship file (Section 19). Two variables were used to determine if the relationship was a casual sexual relationship. First, respondents were asked about each relationship, "Which of the following best describes your relationship with *partner* at the present time?" The relationship was coded as "casual" if they stated the relationships was, "dating frequently, but not exclusively," "dating once in a while," or "only having sex." If the relationship was described as "married" or "dating exclusively" then the relationship was coded as "not casual". Also, respondents were asked about each relationship, "Have you ever had vaginal intercourse with *partner*? By vaginal intercourse, we mean when a man inserts his penis into a woman's vagina." If the respondent said "yes" then the relationship was coded as "sexual." Thus, if a relationship

[1]In order to account for the complex survey weights, Stata turns the X^2 value into an F statistic. The p-value reported by Stata can be interpreted the same way as the p-value for the X^2. Please see the Stata Survey data reference manual for more information http://www.stata.com/manuals14/svy.pdf.

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was coded as "casual" and "sexual," the relationship was a casual sexual relationship. Based on the information in the detailed relationship file, four different measures of casual sexual behavior were used to determine the patterns of casual sexual behavior: (1) *Number of Casual Sexual Partners*, (2) *Age of Casual Sexual Debut*, (3) *How Many Times Had Sex*, and (4) *How Long Knew Partner*.

Number of Casual Sexual Partners: The number of casual sexual partners was determined by adding up all the casual sexual partners each respondent had with a range of 0–26. The number of partners were then recoded as 0 = "no casual sexual partners," 1 = "1 casual sexual partner," 2 = "2 casual sexual partners," and 3 = "3 or more casual sexual partners."

Age of Casual Sexual Debut: The question, "How old were you when your sexual relationship with *partner* began?" was asked about each sexual partner. For each respondent, the age at first casual sexual experience was used. In the sample, the median age at first casual sexual debut was 18, so respondents were recoded as 0 = "no casual sexual partners," 1 = "18 or older," or 2 = "younger than 18."

How Many Times Had Sex?: For each sexual relationship, respondents were asked, "Have you and *partner* had vaginal intercourse on one occasion or more than one occasion?" Responses were recoded as 0 = "no casual sexual partners," 1 = "more than one occasion," and 2 = "ever had sex only one occasion with a partner."

How Long Knew Partner?: Similarly to the previous measure, respondents were asked about each sexual relationship, "How long had you known *partner* when you first had vaginal intercourse with him/her?" Responses ranged from 1 = "one day or less" to 7 = "a year or more." The responses were recoded as 0 = "no casual sexual partners," 1 = "more than a day," and 2 = "ever had casual sex with a partner you knew for a day or less."

Control Variables—The current analysis included nine control variables. *Male* was a wave 1 measure where 1 = "male" and 0 = "female" (omitted group) and the question was "What sex are you?" *Race/Ethnicity* was the wave 3 measure based on two questions, "Are you of Hispanic or Latino origin?" and "What is your race?" All respondents were recoded as "White" (omitted group), "Hispanic," "Black," and "Other Race." *Family Structure* was a wave 1 measure. All respondents were asked, "Please tell me the first names of all the people, other than yourself, who live in your household." Then the respondent was asked about their relationship to every person he or she nominated. A household roster was then constructed for each individual and was categorized in four groups: "two-biological" (omitted group), "single," "step," and "other family formation." The last classification of family structure included living situations such as lived with grandparents. *Mother's Education* was also a wave 1 measure that asked, "How far in school did she go?" The responses were 1 = "eighth grade or less" to 9 = "professional training beyond a four-year college or university." Mothers were classified as having either, "college degree" (omitted group), "some college," "high school degree," and "less than high school." *Respondent's Education* was measured using two dummy variables at wave 3. First, respondents were asked, "What degrees or diplomas have you received?" If they responded "GED or high school equivalency degree" or "high school diploma" then respondents were coded as 1 =

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"high school degree" and 0 = "less than high school degree" (omitted group) if they indicated they did not have a high school degree. A second variable was used to assess respondent's higher education enrollment. Respondents were asked "Are you currently attending regular school? If you are enrolled but on school break or vacation, count this as attending" if they answered "yes" they were then asked, "Is this a high school, a two-year college, a four-year college, or a graduate school?" If they indicated that they were in a two-year college, a four-year college, or a graduate school? Then they were coded as 1 = "enrolled in college" and if they were in high school or not enrolled they were coded as 0 = "not enrolled in college" (omitted group). *Binge Drinking* used the wave 3 question, "During the past two weeks, how many times did you have five or more drinks on a single occasion, for example, in the same evening?" Answers ranged from 0–14, and the question was a continuous measure. *Sexual Regret Because of Drinking* was asked at wave 3 and stated, "Over the past 12 months, how many times did you get into a sexual situation that you later regretted because you had been drinking?" and the continuous answers ranged from 0 to 5 or more. To measure if the respondent ever had *Unprotected First Casual Sex* the wave 3 question, "Was a condom use the first time you had vaginal intercourse with *partner?"* was used. If the respondent ever had first casual sex without using a condom they are coded as "1" and if they never had unprotected first casual sex they are coded as a "0" (omitted group). The last control variable in the current analysis was the continuous measure of age at wave 3 interview.

Participants

As highlighted on Table 1, 8% of the sample at wave 3 and 9% of the same at wave 4 had been told that they had an STI during the previous year[2]. The sample was split almost evenly according to gender with 51% of the sample being male and 49% female. Most of the respondents identified as ethnically white (66%), and 16% as Black, 9% as Hispanic, and 9% as "Other" such as Asian. Seventy percent of the sample were residing in a two-parent home during wave 1, 21% were in a single-parent home, 3% lived in a step-parent home, and 6% were raised in some other family formation such as living with grandparents. To partially gauge socioeconomic status, mother's education at wave 1 was utilized. Twenty-two percent of the sample had a mother with a college degree, 29% had a mother with some college education, 33% of the sample had a mother with a high school degree, and only 16% stated that their mother had less than a high school degree. Two variables were used to determine the respondent's educational level. Eighty-eight percent of the sample had a high school degree by wave 3 and 35% were enrolled in college. On average, respondents binge drank one time during the past two weeks. Fifteen percent of the sample said they had a sexual experience they regretted because of drinking and 17% stated that they had experienced not using a condom at first sex with a casual partner. Finally, the average age of the sample at wave 3 was 21.8.

[2]MPlus does not provide bivariate crosstab tables with analyses that include multiple imputation. Among the wave 4 respondents who have valid responses (N = 11, 983), 85% did not claim to have an STI at either wave, 6% had and STI wave 3 but not wave 4, 7% had an STI at wave 4 but not wave 3, and 2% had an STI at both waves.

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Analytic Strategy

A latent class analysis was conducted to determine if there were different patterns of casual sexual behavior. More specifically, respondents were classified into subpopulations based on their answers to the survey questions (Geiser, 2012; Haydon, Herring, & Halpern, 2012). The underlying principle of latent class analysis was that there were patterns in the data that represented different groups. Group membership was not measured directly by the survey hence why the technique is called *latent* class analysis. The different latent classes were extracted from the responses of the survey questions. Model fit was assessed using four fit statistics. The AIC and BIC was used to compare which model was best based on the number of classes. Smaller AIC and BIC statistics suggested the better fit. The Pearson X^2 statistic was used to determine if the model being estimated and the data were similar. If there were a difference between the model and the data, there would be a significant Pearson X^2 statistic. A non-significant Pearson X^2 infers there was not a difference which in this case was desired. Finally, an entropy measure close to 1 was a good classification (Geiser, 2012). This data analysis plan to determine the number of latent classes was similar to prior research that used this statistical technique (Vasilenko et al., 2015).

After the appropriate number of latent classes was determined, bivariate and multivariate analyses were conducted. Specifically, bivariate and multivariate logistic regression models were used to test the relationship between latent class classification, control variables, and STI diagnosis. The first logistic regression determined if there were differences in the latent class membership and STI diagnosis cross-sectionally and the second logistic regression analysis analyzed if the bivariate relationship remained significant net of the control variables. A similar analysis was done using wave 4 STI diagnosis as the dependent variable. Finally, gender interactions were tested using the variables of latent class, high school degree, enrolled in college, binge drinking, sexual regret because of drinking, and unprotected first casual sex. All analyses were weighted to take into account the complex sampling design of the Add Health. The latent class analysis was conducted using the statistical package of MPlus 7.1, and the logistic regression models were done using STATA 14. Missing data were imputed using multiple imputation of twenty datasets.

RESULTS

The first goal of the current analysis was to determine the number of latent classes needed to explain the differences in the casual sex measures. A three class model proved to be the best model. The three classes were: (1) casual sex abstainers, (2) casual sex experienced, and (3) casual sex risk-takers. Table 2 showcased the fit statistics for the latent class analysis models for the number of classes ranging from one to five latent classes. The lowest AIC was four latent classes, and the lowest BIC was three latent classes. The Pearson X^2 became non-significant at three latent classes, and the entropy measure was satisfactory for all the number of classes tested except five. These results suggested that between three and four classes was appropriate. Closer examination of the four class model showed that most of the parameter estimates were set at the extreme values by MPlus. According to Geiser (2012), this suggested that too many classes were extracted. Thus, it was determined that the three class model was the most appropriate for the current data.

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Table 3 illustrated the latent class prevalence of emerging adults and also the probabilities of classification of the three latent classes for the four casual sex measures. First, the most common classification was the casual sex abstainers with 62% of the sample being in this latent class. This class was characterized as having zero casual sexual partners on all four measures. The second largest latent class (22%) was called casual sex experienced. This latent class was characterized as having one casual sex partner, having first casual sex after age 18, having sex with casual sexual partners more than one time, and knowing their partner for more than a day. This group was called casual sex experienced because the respondents in this latent class had experienced casual sex, but tended to have lower risk casual sex in that they had lower number of partners, started having casual sex later in the life course, and they knew their casual sexual partners longer. Finally, class three was named casual sex risk-takers with 16% of the sample being in this latent class. The characteristics of this latent class were more risky such as having three or more casual sexual partners, having casual sexual debut before 18, had sex with a partner only one time, and had casual sex with a person they only knew for a day or less.

The unadjusted and adjusted models were shown on Tables 4 and 5[3]. It was expected that STI diagnosis would vary according to latent class membership status, and this was supported in the unadjusted model at wave 3. When a variable had an odds ratio that was larger than one, it was considered to be positively associated with the dependent variable. Further, when the odds ratio was less than one, it was negatively associated with STI diagnosis. Both the casual sex experienced and casual sex risk-takers were more likely to have an STI at wave 3 compared to the abstainers group. Table 4 showcased the adjusted model which used the independent variable of latent class membership and the nine control variables to predict wave 3 STI rates. As shown in the full model, the casual sex risk-takers were still significantly different than the abstainers, but the casual sex experienced class was no longer statistically different. This mediation occurred after race/ethnicity and having unprotected first sex were included in the model. Being a male, identifying as Black or Hispanic, and having sexual regret because of drinking increased the likelihood of an STI. Enrollment in college was a protective factor against STIs at wave 3.

Table 5 depicted the longitudinal unadjusted and adjusted results predicting wave 4 STI diagnosis. Similar to the cross-sectional analysis, casual sex experienced and casual sex risk-takers were more likely to have to have an STI at wave 4, but the casual sex experienced class was not statistically different with the casual sex abstainers after controlling for wave 3 STI diagnosis, race/ethnicity, having unprotected first casual sex, and binge drinking. As expected, males were less likely to claim to have had an STI at wave 4. Identifying as Black, binge drinking, and having sexual regret because of drinking increased the probability of an STI diagnosis at wave 4. Finally, older respondents were less likely to have an STI at wave 4.

[3]As stated in the previous note, MPlus does not provide bivariate crosstab tables with analyses that include multiple imputation. The results of the bivariate chi-square test with missing data on the two dependent variables were similar to the bivariate logistic regression models presented in Tables 4 and 5. For the dependent variable of wave 3 STI, the results were in the expected direction. The casual sex abstainers (6%) were the least likely to have an STI diagnosis during the past 12 months, followed by the casual sex experienced group (10%), and the casual sex risk-takers group (13%) was most likely to have an STI. At the bivariate level, there were similar results for STI diagnosis at wave 4 as in the wave 3 analysis. Eight percent of the abstainers claim to have an STI at wave 4 compared to 11% of the casual sex experienced, and 13% of the casual sex risk-takers.

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Table 6 show cased the wave 3 and wave 4 results that included the gender interactions with latent class, high school degree, enrolled in college, binge drinking, sexual regret because of drinking, and unprotected first casual sex. The only significant gender interaction at wave 3 was currently enrolled in college. The positive interaction suggested that being enrolled in college was more protective for males compared to females. For ease of interpretation, the models were run separately for males and females, and I calculated the percent change in odds (100 × (OR-1)) (Demaris & Selman, 2013). Males enrolled in college (OR = 0.36; $p < .000$) had lower odds of an STI compared to their male non-college enrolled counterpart. More specifically, college males had a 67% reduction in odds compared to males not in college. Among females (OR = 0.72; $p < .01$), college students had a 28% reduced odds of an STI compared to non-college females. Also shown on Table 6 was the wave 4 interaction model. The only gender interaction that was significant was binge drinking. When the models were run separately according to gender, binge drinking for females was positively and significantly associated with STI diagnosis (OR = 1.12; $p < .000$) which suggests that after including the control variables, women who binge drink had 12% more odds of an STI compared to those females who did not binge drink. Binge drinking was not associated with STI rates for males (OR = 1.01; $p > .05$) (analysis not shown).

DISCUSSION

The current study uses a person-centered approach to investigate if there are patterns of casual sexual behavior among a national sample of American emerging adults. The focus of the current study is on vaginal sex because of the higher risk of possible STI diagnosis compared to other forms sexual behavior such as kissing or oral sex (Varghese, Maher, Peterman, Branson, & Steketee, 2002). The latent class analysis shows that there are three explicated patterns of casual sexual behavior. The first latent class is comprised of the largest percentage of the population and is categorized as not having any casual sexual partners. This group is named the casual sex abstainers group. The second largest latent class is called the casual sex experienced group. This groups has casual sex, but only with one partner, after the age of 18, has sex more than one time, and know their partner more than a day before having casual sex. Finally, the last latent class is classified as casual sex risk-takers because their casual sexual patterns are more risky. Specifically, they have three or more partners, have sexual debut earlier than the median age of 18, have at least one partner with whom they only had sex one time, and they are likely to have sex with someone they only knew for a day. In general, having more partners and starting one's casual sexual career earlier amplifies STI risk because of increased time of exposure. Having casual sex with someone a person has only known for a day or only once is associated with lower condom use in national samples (Manning, Longmore, & Giordano, 2000) thus may lead to a higher risk of STIs. These three distinctive latent classes are statistically sound.

Moving beyond a descriptive portrait of the latent class analysis, consequences of the patterned casual sexual behavior are also tested. Specifically, different patterns of casual sexual behavior are associated with varying STI rates both cross-sectionally and longitudinally. As expected, the abstinent latent class is the least likely to have an STI diagnosis, followed by the casual sex experience group. The casual sex risk-takers are the most likely to have an STI diagnosis. It is important to note that the casual sex risk-takers

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were significantly more likely to have an STI diagnosis at wave 4, which is approximately seven years later, showing that there are longer term implications of high-risk casual sexual behavior. Further, these findings highlight the need to provide sexual health information and education beyond the adolescent years. Surprisingly, only two interactions were significant in the multivariate analysis. At wave 3, college enrollment was more protective for males and at wave 4, binge drinking is positively related to STI diagnosis, but only for females. This suggests that men and women, for the most part, experience the relationship between latent class membership and STI diagnosis similarly.

Life course theory proves to be useful in explaining casual sex latent class membership and the varying probability of risk. Even though most emerging adults in the sample do not have a casual sex partner, a substantial minority (38%) have experienced at least one casual sex partner and among sexually active emerging adults almost half (48%) have had casual sex. This suggests that casual sex is possibly an emerging adult age-graded behavior. Prior qualitative research does suggest that emerging adults view casual sex and hooking up as common and normative among their peers (Holman & Sillars, 2012) and are comfortable talking about sexual behavior with their peers (Rittenour & Booth-Butterfield, 2006). There may not be a lot of health ramifications of some casual sex, the casual sex experienced group, but the possibility of negative outcomes may increase as people engage in more high-risk casual sexual behavior. In sum, some casual sexual behavior is a normative, age-graded behavior that is a part of the developmental process of emerging adulthood; however, participating in a multitude of casual sexual behavior does have long term implications such as STI diagnosis.

These findings are important for understanding the diverse perspectives on casual sexual behavior. As expected, different patterns of casual sexual behavior are related to varying probability of STI risk. Both casual sex classes (i.e. casual sex experienced and casual sex risk-takers) have more STI diagnoses compared those who do not have casual sex. However, when other known risk factors, such as having unprotected casual sex and binge drinking are accounted for, having low-risk casual sex does not lead to higher probability of STI diagnosis compared to not having casual sex at all. This means that some emerging adults might participate in casual sex, which can be a part of a developmental progression of sexual behavior as they age toward adulthood. The findings of the current study show that not all casual sexual behavior is as harmful as some previous studies and the general public might suggest, particularly after other risk factors are considered. Further, programs that encourage healthy sexual practices of emerging adults should target individuals with the high-risk group characteristics which are most likely to have an STI diagnosis. Specifically, counselors (e.g. substance abuse counselors or health practitioners) need to be aware of the pattern of the high-risk casual sex latent class. If an emerging adult has three or more casual sexual partners, started having casual sex before age 18, had casual sex with a partner only once, and had casual sex with a stranger then that emerging adult should be encouraged to have a comprehensive STI screening. Programs and practitioners who work with the emerging adult population should also incorporate a holistic approach to understanding emerging adult behavior which should include information regarding unprotected casual sexual behavior and binge drinking because when these factors are included in the model,

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individuals having some casual sex experience do not have a higher probability of an STI diagnosis compared to those who do not participate in casual sex at all.

The current study can provide further insight for counselors and practitioners who work with the emerging adult population. First, it is important to understand that not all emerging adult casual sexual behavior is extremely negative (Snapp, Ryu, & Kerr, 2014). The current study shows that when other risk factors are considered, having low-risk casual sex does not mean higher risk of an STI diagnosis compared to abstaining from casual sex altogether. Second, a major limitation to the larger casual sex literature is that most prior studies rely on convenience and college-based samples. The results of the current study showcase that college students are significantly less likely to be diagnosed with an STI. Programs that work with the emerging adult population also need to include emerging adults who are not enrolled in college because they are the most at risk. Finally, the results from the current study highlight that casual sexual behavior is complex and just measuring casual sex as ever having experienced it does not reflect the lived reality or the true measure of risk for emerging adults. While it is important that all sexually active emerging adults should get tested for STIs, practitioners should look for the markers of high-risk casual sex (e.g. high number of casual sexual partners, early casual sexual debut, had casual sex with a partner only one time, and had casual sex with a stranger) to inform intervention programs that promote healthy sexual behavior.

This investigation is a first step in taking a person-centered approach to casual sexual behavior, but there are a few limitations of the current study. First, I measure heterosexual casual sex only. Additional person-centered research is needed that examines same-sex relationships. However, this is beyond the scope of the current project. Second, even though condom use is an important factor in understanding STI risk, the current study is not able to determine condom use at the relationship level of each casual sex interaction, but only if the respondent ever had unprotected sex at first casual sex. This is clearly a limitation because there is an increased chance for STI diagnosis any time a condom is not used, not just at first sex. Future research should examine the direct relationship between casual sex, condom use, and STIs. Third, the current study's measure of STI diagnosis is self-reported which may have bias in who knows they have an STI or who goes to the doctor and gets tested for an STI. For example, people who do not have casual sex may be less likely to think they are at risk and thus may not get tested even if they acquired an STI.

The results of the current study showcase the importance of understanding the complexity of emerging adult casual sexual behavior. Given that there are differences between the latent classes, future research should consider moving beyond a dichotomous measure of casual sex. Also, there is a need for understanding the relationship between casual sex, condom use, and STI diagnosis. The current study's findings show that different patterns of casual sexual behavior are related to STI diagnosis, so a next step would be to understand fully what role condom use plays in these specific relationships. Future research should investigate not just the physical health well-being of the emerging adult population, such as STI diagnosis, but also the emotional well-being, identity, and relational well-being. Researchers (Owen, Quirk, & Fincham, 2014) have started to investigate the positive implications of casual sex, but much more research is needed. Finally, more studies should use diverse samples like the

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Add Health, not just college samples. The important findings of the current study highlight that when using a national and diverse sample of emerging adults, their casual sexual experiences are complex, and this information should be incorporated into future research.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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Table 1

Descriptive Statistics of STI Rates and Control Variables (N = 14,030)

	Total	
Variable	**M/%**	**SE**
STI (Wave 3)	8%	
STI (Wave 4)	9%	
Gender (Wave 1)		
Male	51%	
Female	49%	
Race/Ethnicity (Wave 3)		
White	66%	
Hispanic	9%	
Black	16%	
Other Race	9%	
Family Structure (Wave 1)		
Two Biological	70%	
Single	21%	
Step	3%	
Other Family Formation	6%	
Mother's Education (Wave 1)		
College Degree	22%	
Some College	29%	
High School Degree	33%	
Less than High School	16%	
Respondent's Education (Wave 3)		
High School Degree	88%	
No High School Degree	12%	
Enrolled in College	35%	
Not Enrolled in College	65%	
Binge Drinking (Wave 3)	0.99	0.03
Sexual Regret Because of Drinking (Wave 3)	15%	
Unprotected First Casual Sex (Wave 3)	17%	
Age (Wave 3)	21.8	0.02

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Table 2

Fit Statistics for Latent Class Analysis Models of Casual Sexual Behavior

Number of Classes	AIC	BIC	χ^2	Entropy
1	106077.66	106145.6	5540.74***	
2	50833.54	50976.98	402.49***	1.00
3	49075.57	49294.49	59.67	0.96
4	49014.5	49308.91	30.64	0.96
5	49008.65	49378.55	13	0.91

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Table 3

Latent Class Prevalence and Item-Response Probabilities (N = 14,030)

	Class 1: Casual Sex Abstainers	Class 2: Casual Sex Experienced	Class 3: Casual Sex Risk-Takers
Latent Class Prevalence	62%	22%	16%
Item-Response Probabilities			
Number of Casual Sexual Partners			
0	1.00	0.00	0.00
1	0.00	0.88	0.00
2	0.00	0.22	0.24
3 or more	0.00	0.00	0.76
Age of Casual Sexual Debut			
0 Casual Sexual Partners	1.00	0.00	0.00
18 or Older	0.00	0.67	0.42
Younger than 18	0.00	0.33	0.58
How Many Times Had Sex			
0 Casual Sexual Partners	1.00	0.00	0.00
More than One Occasion	0.00	0.72	0.27
Had Sex Once	0.00	0.28	0.73
How Long Knew Partner			
0 Casual Sexual Partners	1.00	0.00	0.00
More than a Day	0.00	0.54	0.17
A Day or Less	0.00	0.46	0.83

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Table 4

Logistic Regression of Wave 3 STI Diagnosis on Latent Class Membership and Control Variables (N = 14,030)

	Unadjusted OR (95% CI)	Adjusted OR (95% CI)
Intercept		
Latent Class Membership (Casual Sex Abstainers Omitted)		0.29 (0.08–1.04)
Casual Sex Experienced	1.39** (1.09–1.78)	1.17 (0.91–1.50)
Casual Sex Risk-Takers	1.89*** (1.42–2.51)	1.67*** (1.19–2.20)
Male (Female omitted)	0.33*** (0.26–0.41)	0.29*** (0.23–0.37)
Race/Ethnicity (White omitted)		
Hispanic	1.38 (0.91–2.09)	1.51* (1.01–2.25)
Black	2.58*** (2.11–3.15)	2.76*** (2.26–3.38)
Other Race	1.02 (0.79–1.32)	1.14 (0.87–1.49)
Family Structure (Two Biological omitted)		
Single	1.55*** (1.23–1.96)	1.09 (0.85–1.39)
Step	1.82* (1.16–2.86)	1.52 (0.93–2.50)
Other Family Formation	1.32 (0.93–1.87)	1.18 (0.82–1.69)
Mother's Education (College Degree omitted)		
Some College	1.22 (0.94–1.58)	1.10 (0.84–1.43)
High School Degree	1.09 (0.84–1.41)	0.90 (0.69–1.17)
Less than High School	1.67 (0.89–1.52)	0.83 (0.62–1.10)
Respondent's Education		
High School Degree (No High School Degree omitted)	0.77 (0.58–1.04)	0.87 (0.65–1.73)
Enrolled in College (Not Enrolled omitted)	0.68*** (0.55–0.83)	0.61*** (0.49–0.77)
Binge Drinking	0.98 (0.93–1.03)	1.02 (0.97–1.07)
Sexual Regret Because of Drinking	1.20 (0.97–1.49)	1.37** (1.11–1.70)
Unprotected First Casual Sex	1.53*** (1.22–1.92)	1.27 (0.98–1.65)
Age	0.98 (0.93–1.03)	0.96 (0.92–1.01)

	Males (N = 6,591) Adjusted OR (95% CI)	Females (N = 7,439) Adjusted OR (95% CI)
Intercept	0.22 (0.25–1.88)	0.20* (0.04–0.88)
Latent Class Membership (Casual Sex Abstainers Omitted)		
Casual Sex Experienced	0.93 (0.57–1.52)	
Casual Sex Risk-Takers	1.03 (0.55–1.94)	
Race/Ethnicity (White omitted)		
Hispanic	1.39 (0.82–2.36)	
Black	2.95*** (1.91–4.56)	
Other Race	0.82 (0.45–1.51)	

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	Males (N = 6,591) Adjusted OR (95% CI)	**Females (N = 7,439) Adjusted OR (95% CI)**
Family Structure (Two Biological omitted)		
Single	1.02 (0.66–1.57)	
Step	2.01 (0.79–5.10)	
Other Family Formation	0.78 (0.38–1.62)	
Mother's Education (College Degree omitted)		
Some College	0.68 (0.43–1.13)	
High School Degree	0.72 (0.45–1.16)	
Less than High School	0.75 (0.41–1.39)	
Respondent's Education		
High School Degree (No High School Degree omitted)	0.95 (0.59–1.54)	
Enrolled in College (Not Enrolled omitted)	0.36*** (0.22–0.59)	
Binge Drinking	0.97 (0.91–1.05)	
Sexual Regret Because of Drinking	1.49* (1.01–2.21)	
Unprotected First Casual Sex	1.58 (0.89–2.81)	
Age	0.94 (0.86–1.03)	

* p < .05.

** p < .01.

*** p < .001

* p < .05.

** p < .01.

*** p < .001

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Table 5

Logistic Regression of Wave 4 STI Diagnosis on Latent Class Membership and Control Variables (N = 12,052)

	Unadjusted OR (95% CI)	Adjusted OR (95% CI)
Intercept		
Latent Class Membership (Casual Sex Abstainers Omitted)		0.74 (0.20–2.71)
Casual Sex Experienced	1.83*** (1.46–2.30)	1.19 (0.96–1.49)
Casual Sex Risk-Takers	1.50*** (1.24–1.81)	1.30* (1.00–1.68)
Wave 3 STI Diagnosis	4.01*** (3.20–5.03)	2.65*** (2.08–3.39)
Male (Female omitted)	0.30*** (0.25–0.36)	0.31*** (0.25–0.38)
Race/Ethnicity (White omitted)		
Hispanic	1.32 (0.94–1.86)	1.39 (0.99–1.93)
Black	1.76*** (1.46–2.12)	1.71*** (1.39–2.11)
Other Race	0.99 (0.96–1.41)	1.09 (0.75–1.56)
Family Structure (Two Biological omitted)		
Single	1.32** (1.08–1.62)	1.08 (0.87–1.34)
Step	0.75 (0.42–1.31)	0.55 (0.80–1.34)
Other Family Formation	1.18 (0.84–1.65)	1.12 (0.80–1.57)
Mother's Education (College Degree omitted)		
Some College	0.98 (0.77–1.25)	0.92 (0.72–1.19)
High School Degree	1.10 (0.86–1.41)	1.07 (0.84–1.37)
Less than High School	1.01 (0.77–1.32)	0.92 (0.68–1.25)
Respondent's Education		
High School Degree (No High School Degree omitted)	0.95 (0.73–1.24)	0.97 (0.76–1.23)
Enrolled in College (Not Enrolled omitted)	1.04 (0.87–1.25)	0.94 (0.77–1.16)
Binge Drinking	1.03 (0.99–1.08)	1.07** (1.03–1.11)
Sexual Regret Because of Drinking	1.46** (1.17–1.82)	1.43** (1.13–1.80)
Unprotected First Casual Sex	1.65*** (1.33–2.04)	1.33 (1.05–1.70)
Age	0.90*** (0.86–0.95)	0.91*** (0.87–0.97)

	Males Adjusted OR (95% CI)	Females Adjusted OR (95% CI)
Intercept		
Latent Class Membership (Casual Sex Abstainers Omitted)		0.74 (0.20–2.71)
Casual Sex Experienced	1.83*** (1.46–2.30)	1.19 (0.96–1.49)
Casual Sex Risk-Takers	1.50*** (1.24–1.81)	1.30* (1.00–1.68)
Wave 3 STI Diagnosis	4.01*** (3.20–5.03)	2.65*** (2.08–3.39)
Race/Ethnicity (White omitted)		
Hispanic	1.32 (0.94–1.86)	1.39 (0.99–1.93)

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	Males Adjusted OR (95% CI)	Females Adjusted OR (95% CI)
Black	1.76*** (1.46–2.12)	1.71*** (1.39–2.11)
Other Race	0.99 (0.96–1.41)	1.09 (0.75–1.56)
Family Structure (Two Biological omitted)		
Single	1.32** (1.08–1.62)	1.08 (0.87–1.34)
Step	0.75 (0.42–1.31)	0.55 (0.80–1.34)
Other Family Formation	1.18 (0.84–1.65)	1.12 (0.80–1.57)
Mother's Education (College Degree omitted)		
Some College	0.98 (0.77–1.25)	0.92 (0.72–1.19)
High School Degree	1.10 (0.86–1.41)	1.07 (0.84–1.37)
Less than High School	1.01 (0.77–1.32)	0.92 (0.68–1.25)
Respondent's Education		
High School Degree (No High School Degree omitted)	0.95 (0.73–1.24)	0.97 (0.76–1.23)
Enrolled in College (Not Enrolled omitted)	1.04 (0.87–1.25)	0.94 (0.77–1.16)
Binge Drinking	1.03 (0.99–1.08)	1.07** (1.03–1.11)
Sexual Regret Because of Drinking	1.46** (1.17–1.82)	1.43** (1.13–1.80)
Unprotected First Casual Sex	1.65*** (1.33–2.04)	1.33 (1.05–1.70)
Age	0.90*** (0.86–0.95)	0.91*** (0.87–0.97)

* p < .05.

** p < .01.

*** p < .001

* p < .05.

** p < .01.

*** p < .001

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Table 6

Ajusted Logistic Regression of Wave 3 and Wave 4 STI Diagnosis on Latent Class Membership, Control Variables, and interactions

	Wave 3 (N = 14,030) OR(95% CI)	Wave 4 (N = 12, 052) OR (95% CI)
Intercept	0.26 (.07–1.03)	0.74 (0.21–2.65)
Latent Class Membership (Casual Sex Abstainers Omitted)		
Casual Sex Experienced	1.26 (0.97–1.63)	1.05 (0.79–1.38)
Casual Sex Risk-Takers	1.93*** (1.43–2.61)	1.13 (0.84–1.53)
Wave 3 STI Diagnosis	N/A	2.63*** (2.03–3.42)
Male (Female omitted)	0.37** (0.20–0.71)	0.27*** (0.14–0.49)
Race/Ethnicity (White omitted)		
Hispanic	1.51* (1.01–2.27)	1.41* (1.01–1.97)
Black	2.76*** (2.25–3.39)	1.76*** (1.42–2.18)
Other Race	1.14 (0.87–1.49)	1.10 (0.75–1.60)
Family Structure (Two Biological omitted)		
Single	1.10 (0.87–1.40)	1.09 (0.88–1.35)
Step	1.57 (0.97–2.54)	0.56 (0.29–1.08)
Other Family Formation	1.19 (0.83–1.69)	1.13 (0.82–1.56)
Mother's Education (College Degree omitted)		
Some College	1.05 (0.81–1.36)	0.93 (0.71–1.21)
High School Degree	0.88 (0.68–1.14)	1.06 (0.83–1.35)
Less than High School	0.82 (0.61–1.09)	0.93 (0.68–1.26)
Age	0.96 (0.92–1.01)	0.91** (0.86–.96)
Respondent's Education		
High School Degree (No High School Degree omitted)	0.85 (0.54–1.33)	1.01 (0.74–1.38)
Enrolled in College (Not Enrolled omitted)	0.71** (0.57–0.88)	0.90 (0.71–1.13)
Binge Drinking	1.07 (0.99–1.14)	1.12*** (1.06–1.19)
Sexual Regret Because of Drinking	1.29 (0.99–1.68)	1.38* (1.07–1.78)
Unprotected First Casual Sex	1.18 (0.89–1.56)	1.39* (1.04–1.86)
Casual Sex Experienced X Male	0.76 (0.46–1.26)	1.55 (0.93–2.56)
Casual Sex Risk-Takers X Male	0.55 (0.30–1.01)	1.61 (0.95–2.73)
High School Degree X Male	1.12 (0.56–2.24)	1.00 (0.54–1.84)
Enrolled in College X Male	0.55** (0.35–0.86)	1.17 (0.77–1.76)
Binge Drinking X Male	0.91 (0.83–1.00)	0.90* (0.82–0.98)
Sexual Regret Because of Drinking X Male	1.16 (0.71–1.88)	1.07 (0.69–1.66)
Unprotected First Casual Sex X Male	1.28 (0.71–2.31)	0.90 (0.21–2.65)

* p < .05.

** p < .01.

*** p < .001

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