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# Proximal and Distal Indirect Influences on Adolescent Sexual Activity and Post Risky Sexual Behaviors

Tymeckia Kendall

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## ABSTRACT

### Proximal and Distal Indirect Influences on Adolescent Sexual Activity and Post Risky Sexual Behaviors

By

Tymeckia S.M. Kendall  
Fall 2016

*INTRODUCTION:* Prior literature has revealed a correlation between adolescent sexual debut and parenting behaviors. However, most existing studies has only focused on parental monitoring and control. This limitation, in addition to small, cross-sectional studies, has resulted in inconsistent and limited findings. These gaps are addressed in this present paper by investigating how family connectedness contributes to the age of sexual debut. It is hypothesized that adolescents who are 13 years of age and have a lack of family connectedness engage in high-risk behaviors sooner than their 13-year-old peers with greater family connectedness.

*METHODS:* Data were drawn from the 1997 National Longitudinal Survey of Youth. This paper focused on adolescents born in the year 1983 who had no sexual debut at baseline. Those selected were initially interviewed for baseline family connectedness and prospectively followed up to adulthood. Family connectedness was measured using five aspects: shared activities, parent-adolescent communication, parent admiration, parental support and the presence of family dinners. SAS 9.4 was used to perform survival analyses to examine the rate of teenage sexual debut by family connectedness.

*RESULTS:* Findings suggest that family connectedness, specifically weekly family dinners and parent-child communication were significant familial factors that delayed adolescent sexual behavior. The hazards ratio of having an adolescent sexual debut at any time for an individual who had family activity at least once a week was 0.91 (95CI: 0.74, 1.14), having weekly family dinner (HR 0.70; 95CI: 0.53, 0.93), communication with parents (HR 0.78; 95CI: 0.68, 0.91), perceived parental support (HR 1.04; 95CI:0.91, 1.02), think highly of parents (HR 1.08; 95CI 0.93, 1.25).

*CONCLUSION:* This study attempted to observe other factors outside of the parental monitor and control that could contribute to adolescent sexual activity. However, family connectedness was found to be a protective factor only among family weekly dinner and parent-child communication. Public health policy and interventions aimed at family connectedness alone will unlikely influence adolescent sexual behaviors. Therefore, other factors along with family connectedness should be further assessed to discover its true correlation on sexual debut.

*Keywords:* adolescent, sexual onset, family connectedness, family bonding, sexual behavior

Proximal and Distal Indirect Influences on Adolescent  
Sexual Activity and Post Risky Sexual Behaviors

by

Tymeckia S.M. Kendall

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APPROVAL PAGE

Proximal and Distal Indirect Influences on Adolescent  
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## Chapter I: Introduction

Adolescence is a time period of tremendous growth where teens experience physical and sexual maturation and seek identity development. [1] During this time, adolescents illustrate an unprecedented amount of independence from their parents and move toward social and economic independence. [2, 3] Within this journey of self and social exploration, are the beginnings of romantic relations and the initiation of sexual activity. [4, 5]

Studies show that sexual behavior during this stage of life may lead to negative outcomes due to the occurrence of sexually transmitted diseases (STDs) and unintended pregnancies. [2, 6] Currently, American adolescents have the highest rates of STDs and unplanned pregnancies when compared to other Western industrialized countries. Per the Centers for Disease Control and Prevention, in 2015, American adolescents aged 15 to 24 years old accounted for nearly two-thirds of chlamydia diagnoses. Amongst females, the highest age-specific rates of chlamydia were those aged 15–19 years and 20–24 years. Among men, the highest rates existed among those aged 20–24 years. In 2015, persons aged 15–44 years accounted for 79.6% of reported primary and secondary syphilis cases. Surveillance data further confirms that adolescents are most likely to participate in risky sexual behaviors such as multiple/concurrent sexual partners and inconsistent condom use. It has been demonstrated that young adults face multiple barriers to accessing proper STD prevention services including but not limited to a lack of funds and transportation which quite often contributes to the high prevalence rate among this population. [7, 8]

However, prior literature has indicated that as adolescents grow older and gain more sexual experience their pattern of sexual behavior begins to change. Older adolescents have been found to have a greater frequency of sex and more infrequent condom use when compared to younger adolescents. On the other hand, younger teens were more likely to have a positive STD test result. Such differences in sexual behavior patterns indicate that younger adolescents are least likely to practice risky sexual behaviors but are at increased risk for STDs. [7, 9] [10] [2] [3, 11] [12-16]

Although the decision to engage in sexual intercourse is made independently of their parents, prior literature discovered a correlation between sexual debut and family dynamics. However, the primary focus within many studies has been on parental monitoring and control. Research focusing on this specific type of influence has produced inconsistent results. This informs us that a closer look should be given to other familial factors that have yet to be explored.

Family connectedness is defined as a combination of shared activities including dinnertime, family game night, shopping and attending religious services. These studies have similarly concluded that as adolescents start to become more independent, participation in family activities increases the adolescent's perceived support and connectedness. Family connectedness also provides a successful pathway for parents to have casual conversations about everyday topics and provide guidance. Current studies have shown that if teens perceive substantial parental support and connectedness, they are least likely to have unprotected sex and least likely to become pregnant. Per Crockett et al., 1996, adolescents who reported greater family relationship initiated in sexual relationships later than those who reported poor family relationships. Church attendance was also found to be an important determinant in adolescent sexual activity, per F.L. Mott, M.M. Fondell, P.N. Hu, *et al.*

The purpose of this study was to investigate the influence of family dynamics on sexual debut. I sought to examine whether those with an earlier age of onset experienced a poorer sense of family connectedness than those who chose to delay sexual onset into adulthood. It is hypothesized that those 13 years of age who have a lack of family connectedness engage in high-risk behaviors sooner than their 13-year-old peers with greater connectedness. The goal was to better understand whether these factors operate independently or synergistically with respect to risky sexual behaviors.

## Objectives & Aims

The present study contributes to literature on adolescent sexual behavior and extends it in multiple ways. This will be done by using a large, national representative and longitudinal study of adolescents. To further learn about this association, the objectives of this analysis are to:

- Investigate how Sexual Age of Onset is influenced by family connectedness (frequency of family activities, family dinner, parental praise and quality of parent-adolescent communication)
- Determine the effect of gender and race on Sexual Age of Onset

## Chapter II: Literature review

### Introduction

The social ecological model (SEM) assesses how an individual's behavior affects or is affected by multiple levels of influence. The levels of influence in this model are: intrapersonal, interpersonal, organization, community and public policy. Intrapersonal identifies individual characteristics that influences adolescent sexual behavior. This can include biological or psychological factors like age, education, substance use, self-efficacy and sexual knowledge. Interpersonal includes an individual's relationship with his/her family peers. The quality of this relationship provides one's identity and support. Organizational influence includes churches and schools that provide a source of rules/ regulations the either promote or constrain selected behaviors. The community level involves the individual's social networks, ethnicity/culture and built environment. The characteristics of one's physical environment includes social norms, the level of violence/crime and economic/poverty standing. Public policy includes any local, state or federal laws. This can include the regulation of programs that provide education on sexually transmitted diseases, unintended pregnancies, abstinence and contraceptive use. Within this paper, the social ecological model will help to provide a greater understanding of all factors that may influence adolescent sexual activity. The ultimate purpose of this paper is to further examine how family characteristics can influence adolescent sexual activity.

During the performance of a literature review there were several themes discussing the proximal, intermediate and distal that may positively or adversely influence adolescent sexual debut (ASD). Existing literature has investigated a combination of individual, relational, organizational, communal and political risk factors. With these attempts, we can better understand how to identify and create improved preventative opportunities.

### Proximal Factors

At the individual level, ASD has been attributed to alcohol and drug use, delinquency, exposure to social media, depression and self-confidence. Per Ritchwood et al. (2015), youth who reported lower levels of self-worth were more likely to engage in sexual activity as a coping

mechanism for rejection and loneliness. Individuals who suffer from low self-worth reported that they engaged in sexual activity to attract friends and seek peer acceptance. Results from this study also showed a connection to a higher frequency of diagnosed STDs and sexual partners. Sneed et al., looked at drug and alcohol use as an influence on risky sexual activity. Drug/alcohol use is known to impair judgment, cause depression, develop into dependency and hinder brain development. The results from this study, showed a correlation between drug/alcohol use and the number of sexual partners. Those who initiated in adolescent activity reported using drugs or alcohol before sexual activities and were more likely to be diagnosed with a sexually transmitted disease.

#### Familial Factors

Within the proximal level of influence, many studies have focused on monitoring and control and not family dynamics. Research on the impact of these characteristics have varied in several ways. In general, these studies have found that parental monitoring was associated with a delay in adolescent sexual activity and safer sexual practices.[17-20] Per one study, having a parent who maintains knowledge and control over their child's activities and whereabouts drastically reduces their child's ability to become involved in unapproved activities. On the other hand, numerous articles have reported that excessive control and coerciveness (authoritarian parenting) may be associated with an increased chance that the child would participate in greater sexual risks. In addition, some studies have not been able to establish an association. [6, 21]

#### Peer and Communal Factors

Numerous papers have highlighted the social influence of adolescent sexual debut by peer and community factors. As mentioned previously, adolescence is a period where teenagers spend more of their daily time interacting with those outside of their home environment. Therefore, it is important to consider the influential impact that one's peers and community has on an individual's likelihood of participating in risk-related behaviors.

Younger teens are more susceptible to peer pressure and peer norms because they want to feel accepted and liked. In addition, adolescents belonging to single parent households, low socioeconomic status or residential instability were found to be more submissive to peer pressure and peer norms. According Perkins et al (1998), associating with peers who did drugs was related to a significant increase in the likelihood of drug use and sexual activity.

Papers that examined the neighborhood environment as an influence on ASD have found a link between neighborhood disadvantage and risky adolescent outcomes. These outcomes included unintended pregnancies and inconsistent condom use. In addition, studies have indicated that lower socioeconomic communities offer more opportunities for adolescent to access alcohol, drugs and tobacco. The broken window's score has served as a staple in some papers to describe a community's crime and social disorganization. In addition, neighborhood condition was also found to be correlated to birth control use during sexual debut. However, results on its influence on the timing of sexual initiation has been inconsistency. As stated in Dupere' et al. (2008), this results showed that adolescents who lived in poor neighborhood and had a history of delinquency were more likely to report early sexual activity. However, females were more susceptible to these factors. Per Oman et al. (2013), research also found that living in more positive conditions were significantly associated with increase birth control use but not with sexual debut.

#### Public Policy Factors

Sexuality Education programs in schools is the primary focus of many public policy papers.

Conforming to the Sexuality Information and Education Council of the United States (SIECUS), sexuality education is defined as "the lifelong process of acquiring information about sexual behavior and forming attitudes, beliefs and values about identity, relationships and intimacy."

As stated in S.C. Schmidt et al., in 2014 only 22 states require public school to provide some type of STD prevention. However, too few of these programs cover the topic of conception while over 80% of these states require programs focus on abstinence and negative consequences. Nevertheless, several programs have displayed evidence of positive behavior change and healthy decision making.

## Gaps in Literature

Inconsistent findings on the influence of parental monitoring and control on sexual debut tells us that there are other factors that may contribute to adolescent sexual debut. An important, yet overlooked factor is family connectedness. To date, only a small percentage of published articles have studied the influence of family connectedness as a determinate.

Despite the existence of several published articles, there are several gaps and limitations in literature that examine ASD. First, much of the existing literature reports cross-sectional studies. By employing in a cross-sectional study, temporal effects are impossible to assess. Therefore, it is unclear whether parental involvement or family connectedness is a protective factor. Secondly, too few of studies attempted to use a larger sample size. Thus, this undermines the results of the study by decreasing its' reliability. Thirdly, some studies included adolescents who were already sexually active.

## Chapter III: Manuscript



## Introduction

During adolescence (ages of 12 to 18) teens begin to experience biological, behavioral, and social changes. [1]Adolescents illustrate an unprecedented amount of independence from their parents and their need for social interaction and approval from their peers become more important. [2, 3] Within this journey of self and social exploration, are the beginnings of romantic relations and the initiation of sexual activity. [4, 5]

Studies show that sexual behavior during this stage of life may lead to negative outcomes due to the occurrence of sexually transmitted diseases (STDs) and unintended pregnancies. [2, 6] Currently, American adolescents have the highest rates of STDs and unplanned pregnancies when compared to other Western industrialized countries. In addition, surveillance data confirms that adolescents are most likely to participate in risky sexual behaviors such as multiple/concurrent sexual partners and inconsistent condom use. It has been demonstrated that young adults face multiple barriers to accessing proper STD prevention services including but not limited to a lack of funds and transportation which quite often contributes to the high prevalence rate among this population.[7, 8]

In hopes of forming better interventions and preventive methods, recent literature has attempted to further investigate the risk factors attributed to sexual debut. A common model used by published articles was the social ecological model. This model was used to explain how an individual's behavior affects or is affected by multiple levels of influence that may influence adolescent sexual activity. Unfortunately, many papers have only focused on parental monitoring and control. An important, yet overlooked factor is family connectedness.

The ultimate purpose of this paper is to further examine how family characteristics can influence adolescent sexual activity. It is hypothesized that those 13 years of age who have a lack of family connectedness engage in high-risk behaviors sooner than their 13-year-old peers with greater connectedness. This will be accomplished by using a national longitudinal study

which surveyed the same group of adolescent yearly until adulthood. This group of adolescents will have family characteristics analyzed at baseline and monitored on a yearly basis for sexual debut. The use of Cox proportional hazard model will be used to determine the hazards of a person having a sexual debut within the set period. This will be further discussed below.

### *Methods and Procedures*

#### *Participants*

The data used within this study was drawn from the National Longitudinal Survey of 1997 (NLYS97). The NLYS97 is a longitudinal study that consists of a nationally representative sample of approximately 9,000 youths. The purpose of this survey was to document the adolescents' transition into adulthood. Therefore, subjects were interviewed about: their relationship with parents, dating, sexual activity, onset of puberty, life expectations, time use (daily scheduling), criminal behavior and substance use. Demographic information was also collected. Interviews were conducted through a computer-assisted personal interviewing (CAPI) system, which automatically guides respondents down certain paths and loops depending on their age and responses to previous questions. Participants were randomly selected and screened for eligibility. This survey sampled American adolescents (ranging from the ages of 12-17) who were born between the years of 1980-1984. Those selected were initially interviewed and completed followed up yearly to present date. Wave 1 was conducted in 1997. In addition, the participants and their parents were reimbursed \$10-\$20 for each completed interview.

Since the purpose of this study was to prospectively examine predictors of sexual behavior from early adolescence to adulthood, the sample was restricted to those who were 13 years of age. Younger adolescents were not included because sexual activity questions were only asked of those 14 years of age and older. This criterion narrowed the sample size to 1613 participants. This population is 49% male, 56.7% White, 21.4% African American, 21.2% Hispanic and 0.73% Mixed.

#### *Measures*

PRIMARY OUTCOME VARIABLE

*Sexual Initiation.* During Waves 1 to 5, participants were asked if they ever had sexual intercourse. All adolescents who indicated “no” were not asked any further sexually related questions until their next interview. A year later, at their next interview, these participants were asked “Since the date of your last interview, have you had sexual intercourse.”

#### BASELINE PREDICTOR VARIABLES

*Family.* During Wave 1, adolescents were asked about their family’s characteristics. Parent-child relationship quality was based on whether they think highly of their parents and perceived parental support. Respondents were also asked, “Who do you turn to for help with your personal problems”. Shared Dinnertime was measured by asking adolescents “How many days per week do they typically eat dinner with their family”. Shared Activities was measured by asking adolescents “How many days per week do they typically have fun with the family”.

#### *Data Analysis*

Only those who reported never having intercourse at Wave 2 were included in the analyses. Analysis was performed this way because in Wave 1, participants were not asked sexually related questions. Therefore, in Wave 2, if a participant reported sexual activity it would be impossible to establish a temporal association. Within this paper, survival analysis was performed to estimate the probability of a respondent having a sexual onset by the end of the survey period. Time to sexual initiation was measured using Cox proportional model using PROC PHREG. In addition, survival analyses helped to account for censoring, where a participant may have dropped out of the survey. Race and gender was controlled for to produce the adjusted hazard ratios. The survival model used in this paper, were in the following functional form:

$$h_1(t | \mathbf{X}_i) = h_0(t)e^{\beta_i x_i}$$

This formula represents the hazard function evaluated at time  $t$  for those with low family characteristics. Here, the hazard at time  $t$ ,  $h(t)$ , is the conditional instantaneous probability of having a sexual onset at time  $t$ , given that everyone did not have a sexual onset prior to time  $t$ . In other words, this is the ratio of the hazards of having an adolescent sexual debut at any time

for an individual who has a sense of family connectedness to an individual who does not have a sense of family connectedness.

Within this study SAS 9.4 was used to create the statistical analyses for variable comparisons.

#### DESCRIPTIVE ANALYSES

Gender and Race/ethnicity were self-reported during Wave I. Descriptive statistics compared respondents who had a sexual onset to other respondents that did not have a sexual onset based on family characteristics. Descriptive statistics of the sample were displayed as well.

#### PARENTING CHARACTERISTICS AND SEXUAL INITIATION

Per the guidelines provided by the NLYS-97, respondents aged 14 years or older was only be asked sexual-related questions. In this paper, the population chosen were not asked any sexual related questions until wave 2 due to their age. Therefore, baseline characteristics were gathered in wave 1. In addition, those who reported a sexual onset in wave 2 were excluded and categorized as having an onset at the age of 13 or younger. Those who were not available, skipped or refused to answer the question about sexual onset were right-censored to have had a sexual onset (the event) during the time-period he/she were last observed. Participants who reported not having a sexual onset in wave 2 were not asked any further questions about their sexual activity until the next year. In Wave 3, those who reported not having a sexual onset were asked again whether they had a sexual experience since the date of the last interview.

#### *Results*

##### DESCRIPTIVE ANALYSES

The final sample included 1613 participants who were between the ages of 12 and 13 years old in 1997 and lived with both parents/guardians. Table 1 represents the overall descriptive statistics of our study sample. The sample was 51.8% male and racially comprised of (N=738) Whites, 1% (N=9) Mixed Race (Non-Hispanic), 20% (N=268) Hispanic and 24% Black. About 83% of participants reported that their family did at least one family fun activity per week. About 91% of participants reported having family dinner at least once a week. When asked “who do

you turn to when you have problems”, more than half (55%) reported talking to someone other than their parents. Over 60% of our sample reported having very supportive parents. Having somewhat supportive parents and not very supportive parents were reported as 35% and 3% respectively. Thinking highly of parents were stated as 55% of the sample while 35% stated that they did not think highly of their parents.

When baseline information was assessed by race and gender, significant differences in family characteristics were observed. When assessed by race, significant differences were observed in the frequency family activities and dinners and highly of their parents. When assessed by gender, significant findings were found between the frequency of dinner and talk to about problems. A chi-square test was performed and a relationship was found between parental praise and adolescent sexual debut,  $X^2= 26.84$ ,  $p<.0001$ . When the frequency of family dinners was observed, the chi square test found a relationship,  $X^2= 52.14$ ,  $p<.0001$ . A relationship was also found when family activities were investigated,  $X^2= 9.98$ ,  $p<.019$ . Per gender differences, whom the participants turned to for advice was significant. The odds of having a sexual debut given that the participant were female and had low family connectedness were 63% more likely than those who were male and had low family connectedness. The true population effect was between 77% and 52%. The odds of not having family dinner at least once a week and having a sexual debut were 65% more likely for females with low family connectedness than males with low family connectedness. The true population effect was between 91% and 46%.

Survival probabilities for each wave were calculated and presented in Table 2. Initially in Wave 1, there was 1613 participants where 0% had a sexual onset. By Wave 2, 411 participants (25%) had an onset. By Wave 3, 18% of the remaining participants (N=216) reported having a sexual debut in sexual activity. By Wave 4, 25% of the remaining participants (N=250) had an onset. By Wave 5, 32% (N=238) initiated in sexual activities.

By the end of our observation period, in year 2002, about 54% (N=877) of adolescents reported having a sexual onset. Table 1 further describes the demographics of those who engaged in

sexual activity. This group was composed of about 53% males and 47% females who initiated in sexual intercourse before the age of 18. Of those who reported sexual activity, about 49% self-reported as being White, 31% African American and about 20% reported as being Hispanic. Of those who experienced a sexual debut 80% reported having at least one weekly Family Activity. In addition, 88% reported having family dinner at least once a week and 50% reported talking to someone other than his/her parents. No perceived parental support was reported by 4% of those who had a sexual debut.

Table 3 displays the hazard ratio of having a sexual debut of each associated family characteristic. The risk of having a sexual onset before the age of 18 was found to be significantly different among adolescents who experienced no family dinners and spoke to someone other than their parents. The hazards ratio of having an adolescent sexual debut at any time for an individual who had family activity at least once a week was 0.91 (95CI: 0.74, 1.14), having weekly family dinner (HR 0.70; 95CI: 0.53, 0.93), communication with parents (HR 0.78; 95CI: 0.68, 0.91), perceived parental support (HR 1.04; 95CI:0.91, 1.02), think highly of parents (HR 1.08; 95CI 0.93, 1.25). In other words, having weekly family dinners and parent-child communication were found to be protective methods against adolescent sexual debut.

Within this study, condom use at sexual debut was also investigated. It was found that over 70% of those who initiated in sexual activity each year used condoms. Only a small percentage of those who initiated in sexual activity each wave reported having low family connectedness.

## Discussion

Adolescent sexual debut is an important health concern due to its association with adolescent pregnancy and contraction of several STDs including HIV. Data received from the National Longitudinal Survey of 1997 helped to monitor our participants' lifestyles and behaviors from childhood to adulthood. The results of this study provide new information on the correlation between family characteristics and teenage sexual behaviors. Although previous studies have primarily focused on parental monitoring and control, this study investigated other factors that

could further clarify this correlation. According to my expectations, having weekly dinners and parent-child communication was key for delaying sexual debut. Altogether, papers exploring this type association between family characteristics have found mixed results. These current results were consistent with Bingham and Crockett 1996 and a few others. For example, Bingham and Crockett 1996 results were that adolescents who engaged in early sexual activity were associated with low family relation, low academic activity and low church attendance. In addition, Paul C, Fitzjohn J et al. 2000 found that the level of family functioning and structure were predictors of adolescent sexual activity in unadjusted analyses. However, its' adjusted analyses SHOED that family connectedness was not a key variable. These inconsistent results can result from differences in study patterns, population choice, population size, study duration and the choice of studied variables.

Data from this study demonstrated that only a small percentage of those who had a sexual onset neglected the use of condoms. To further understand this small population and form better intentions for this special population more research should be done. Condom use at sexual debut an important predictor of an individual sexual health and decision making factors. Such factors and decisions may translate into adulthood. Studies have shown that early initiators have a higher probability of contracting an STD, becoming pregnant and reporting involuntary sexual experiences. Data from this study deployed that those who initiated in a sexual debut and neglected to use condoms was a small percent.

There were major strengths and limitations to this study. A major strength of the study was that a longitudinal analysis was performed to establish a temporal relationship between family connectedness and adolescent sexual debut. Longitudinal analysis studies help to identify patterns in relation to a specific exposure over time within the same population. Therefore, excluding any type of recall bias. This present study followed the same adolescents from the age of 13 to 18 years of age.

Self-report sexual activity was a major limitation in this study. General conversations about sexual activities and recalling sexual events can make teenagers uncomfortable and may cause them to falsify information. Unfortunately, this is the only way to gather such sensitive information. Participants living in a single parent home were also excluded from the study. This was a major limitation because several studies have produced substantial results that household composition plays a strong role in the probability of sexual intercourse. In addition, within the study did not clearly define sexual activity for the participants. Therefore, it is hard to account for vaginal/anal sexual activity versus oral sexual activities. In addition, sexual orientation was not measured, thereby ignoring its potential effect on both debut and family connectedness.

This paper also did not account for other factors that may contribute to sexual adolescent debut. This is another limitation to this study. Recent literature has tried to further identify certain aspects of teenagers' lives that may positively or adversely contribute to the initiation of sexual activity. Therefore, it is important to consider the influential impact that one's community has on an individual's likelihood of participating in risk-related behaviors. Some other factors not taken into consideration is the fact that younger teens may be more susceptible to peer pressure and peer norms. This can differ by gender as well.

### Conclusion

In sum, this study provided more information about teenage sexual activities and their related relationship to family dynamics. It attempted to follow a group of non-sexually active adolescents into adulthood and monitor their sexual habits because of their family dynamics. Results indicated that parent-child communication and weekly family dinners was a protective factor against sexual debut. Although the results only found an association among certain family dynamics, this study helps to fill in prior gaps of knowledge. This is accomplished using a longitudinal study that annually interviewed participants that reported no sexual activity at baseline or the previous waves. Previous studies, along with this present study, informs us that there are more family factors that have yet to be explored further to explain its association. Most important, future studies should be done that expands the literature beyond parental



monitoring and control. It is necessary to examine the factors that increase the risk of sexual activity among those at increased risk for STDs/HIV. Recent literature has shown that adolescents are becoming sexually active at even younger ages. By identifying the underlying processes in which multiple level systems influence sexual activity.

## Appendix

The coding used to determine the hazard ratios is:

```
proc phreg data=timeline covs(aggregate) covm;
  model (time0 time1)* event(0) = Fam_Activ_ Fam_Din_ talk_
  Highly_support_ /rl;
  id pubid;
run;
```

Table 1: Description of the Sample (N=1613) and Adolescents Who Had Initiated Sexual Intercourse at Wave 6

Characteristics	Total Sample (N= 1613)	Engaged in Sexual Activity by Wave 6	Did Not Engage in Sexual Activity by Wave 6
	N= 1613 (100%)	N=877 (54.3%)	N=736 (45.7%)
<b>Sociodemographic</b>			
<b>Race/Ethnicity</b>			
Black	415 (25.7)	272 (31.0)	143 (19.4)
Hispanic	324 (20.1)	173 (19.7)	151 (20.5)
Mixed Race	12 (0.7)	7 (0.8)	5 (0.7)
White	862 (53.4)	425 (48.5)	437 (59.4)
<b>Gender</b>			
Female	777 (48.2)	413 (47.1)	364 (49.5)
Male	836 (51.8)	464 (52.9)	372 (50.5)
<b>Family Structure</b>			
<b>Weekly Family Fun Activities</b>			
None	271 (16.8)	173 (19.7)	98 (13.3)
At least Once a week	1342 (83.2)	704 (80.3)	638 (86.7)
<b>Weekly Family Dinners</b>			
None	147 (9.1)	107 (12.2)	40 (5.4)
At least Once a week	1466 (90.9)	770 (87.8)	696 (94.6)
<b>Talk</b>			
Parents	726 (45.0)	435 (49.6)	291 (39.5)
Someone else	887 (55.0)	442 (50.4)	445 (60.5)
<b>Perceived Parental Support</b>			
Very Supportive	991 (62.4)	493 (56.2)	498 (67.7)
Somewhat Supportive	570 (35.3)	348 (39.7)	222 (30.2)
Not Very Supportive	52 (3.22)	36 (4.1)	16 (2.2)
<b>Think Highly of Parents</b>			
Disagree	566 (35.1)	338 (38.5)	228 (31.0)
Neutral or Mixed	163 (10.1)	95 (10.8)	68 (9.2)
Agree	884 (54.8)	444 (50.6)	440 (59.8)

Table 2: Total Number and Hazard Ratios of Adolescents Who Had Initiated Sexual Intercourse by Wave

Interview Timing	Sample Size	Number Engaged in Sexual Activity	Survival Probability
Wave 1 (Baseline)	1613	—	1
Wave 2	1613	411	$1 * ([1613 - 411] / 1613) = 0.75$
Wave 3	1202	216	$(0.75) * ([1202 - 216] / 1202) = 0.62$
Wave 4	986	250	$(0.62) * ([986 - 250] / 986) = 0.46$
Wave 5	736	238	$(0.46) * ([736 - 238] / 736) = 0.31$
Wave 6	498	—	

Table 3: Hazard Ratios and Adjusted Hazard Ratio for the Proportion who Engaged in Sexual Activity

Characteristics	Population who Engaged in Sexual Activity by Wave 6		
	N (%)	HR (95% CI)	Adjusted HR (95% CI)
<b>Family Structure</b>			
<b>Weekly Family Fun Activities</b>		0.91 (0.73, 1.13)	0.92 (0.74, 1.14)
At least Once a week	173 (19.7)		
None	704 (80.3)		
<b>Weekly Family Dinners</b>		0.68 (0.51, 0.89)	0.70 (0.53, 0.93)
At least Once a week	107 (12.2)		
None	770 (87.8)		
<b>Talk</b>		0.78 (0.68, 0.91)	0.78 (0.68, 0.91)
Parents	435 (49.6)		
Someone else	442 (50.4)		
<b>Perceived Parental Support</b>		1.03 (0.64, 1.68)	1.04 (0.91, 1.02)
Very / Somewhat Supportive	493 (56.2)		
Not Very Supportive	36 (4.1)		
<b>Think highly of parents</b>		1.10 (0.94, 1.27)	1.08 (0.93, 1.25)
Disagree/ Neutral or Mixed	338 (38.5)		
Agree	444 (50.6)		
<b>Demographics</b>		—	
Race			0.95 (0.91, 1.01)
Sex			1.03 (0.89, 1.19)

## Chapter IV: References

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