

ECOLOGICAL VARIABLES CONTRIBUTING TO ADOLESCENT RISKY
SEXUAL BEHAVIORS

By

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CHAPTER I

INTRODUCTION

While the National Campaign to Prevent Teen and Unplanned Pregnancy attributes a decrease in adolescent births among all age and racial groups to a decline in sexual intercourse and an increase in contraception use, it is imperative to acknowledge that the adolescent birth rate is still 34.3 births per 1,000 adolescents, the highest of all industrialized nations (Martin et al., 2011). Some estimates cite the Southern region of the United States as being the highest among any other region of the United States, at 60.1 per 10,000 births (Hoffman, 2006). These adolescents are potentially at risk of becoming pregnant or contracting sexually transmitted infections due to the risky sexual behaviors linked with family and community ecological variables.

The term “risky sexual behaviors” encompasses a variety of behaviors, including a lack of contraception use and greater number of monogamous, casual, or unknown sexual intercourse partners. Risky sexual behaviors in adolescence can also include early age of sexual intercourse initiation (at or before age 14), participation in oral sex, and permissive feelings towards sexual health. This is because any sexual activity that

exposes an adolescent to bodily fluids, including semen or blood, increases the risk for infection, disease, and pregnancy (Biglan, Metzler, Wirt, Ary, Noell, Ochs, French, & Hood, 1988). Sexual behavior outcomes of ‘infection’, ‘disease’, and ‘pregnancy’ are considered risky because of their ability to adequately disrupt the adolescent’s ecology (Metzler, Noelle, Biglan, Ary, & Smolkowski, 1994).

Risky sexual behaviors in early and late adolescence are, in part, a result of an accumulation of ecological factors that have influenced the individual’s development. Disadvantage within a family and community ecology can refer to a person’s or family’s position in society based on education, employment, and economic characteristics. This includes individual and family standing in society (American Psychological Association, 2011). Adolescent ecological systems with deficiencies in parental education, income, employment, and resources, can encourage early-emergence pathways to adulthood, including incarceration and adolescent childbirth (Santelli, Lowry, Brenner, & Robin, 2000). The connection between these disadvantaged family ecologies that can place adolescents at risk of early emergence of adulthood has been explored in past research, but prior research typically fails to include broader ecological factors. This study was designed to explore the factors within an adolescent’s ecology, including familial and community level factors that contribute to risky sexual behaviors.

Rooted in Darwin’s evolutionary principles of natural selection, a human- ecological perspective describes the relationship between individuals and the non-living and living habitat, including the individual’s ability to adapt, survive, maintain, and sustain (Bubolz & Sontag, 1993). This ecology is interrelated and influences many aspects of an individual’s development. Feelings of safety, access to healthcare resources (or lack

thereof), and other contextual variables within the family and community ecology could contribute to the development of adaptive or maladaptive behaviors and frame an individual's limitations or opportunities (Klein & White, 1996). Because the biggest determinants of adolescents behavioral outcomes in the United States are family and community ecological factors (Biglan, Metzler, Wirt, Ary, Noell, Ochs, French, & Hood, 1988), this study aims to better understand which ecological factors have the strongest associations with the emergence of adolescent risky sexual behaviors.

CHAPTER II

REVIEW OF LITERATURE

About 30% of American girls every year will become pregnant before the age of twenty, costing the United States \$9 billion per year in child welfare costs and public sector health care (Planned Parenthood, 2010). This estimate is likely low, given that it does not include the care of the adolescent's child past age five (Steiner, Elixhauser, & Schnaier, 2002). Besides the cost to the adolescent's ecological system, broader ecologies, including American taxpayers and government assistance programs, can be significantly affected by risky sexual behaviors in adolescence.

Within the last decade, 42% of children are born outside of marriage, reflecting a 35% increase from the last five decades (Cherlin, 2010). Childbirth outside of marriage may heighten the instability of the family structure within the family ecology. Instability within the family structure can be correlated with early initiation of sexual activity among adolescent males and increased adolescent sexual intercourse and premarital childbearing among females (Wu & Thomson, 2004). With more children being born outside of marriage, and children born to adolescent mothers being 2-3 times more likely to experience adverse outcomes, it could be useful to gain a better understanding of

ecological factors that influence the emergence of risky sexual behaviors that can lead to childbirth in adolescence (Jaffee, Caspi, Moffitt, Belsky, & Silva, 2001).

The Ecological Theory of Human Development

An individual's environment consists of different systems or 'concepts' through which individuals implicitly or explicitly participate (Bubolz & Sontag, 1993). The most influential environment, according to the *Ecological Theory of Human Development* is the family ecosystem, in which an individual directly participates, learns social organization such as societal norms and values, receives feedback from members, formulates an internal working model, and forms attachments that can influence dimensions of personal development and lifelong physical, mental, and behavioral trajectories. The family-of-origin is the ecosystem for which fundamental needs are met and human character is formed (Bretherton, 1993). The ability to meet the needs and influence adaptive character growth is reliant on the health of the family ecosystem.

The *Ecological Theory of Human Development* contributes to the explanation of an individual's environment in influencing and reinforcing aspects of personal growth. This ecological perspective posits that deficits in resources reflect an unhealthy ecology that can have consequences for the health of the individual. Individuals within a healthy ecology are provided the fundamental resources and support required to adapt, thrive, and respond appropriately to social norms and expectations of the broader environment (Bronfenbrenner, 1986).

Family and Community Disadvantage and Adolescent Ecology

An adolescent's family ecology influences who they are as individuals. Each individual's family ecology can influence cognitive, emotional, and social development directly and indirectly (Bronfenbrenner, 1986). Mirowsky and Ross (2003) suggest that an individual's 'learned effectiveness' occurred as a result of success within the family and community ecology. 'Learned effectiveness' is taught within the family ecology and is defined by an internal locus of control, a belief and confidence in oneself, and the motivation for future emotional, financial, and academic success. This 'learned effectiveness' is concentrated in family ecologies with access to resources, with disadvantaged ecologies exhibiting weaker levels of 'learned effectiveness'. The internal 'learned effectiveness' an adolescent possesses reflects the amount of control felt within their family and community ecology, including perceived limitations and opportunities. This could reflect the generational phenomenon of thought processes and values that perpetuates the cycle of poverty, disease, and other learned family behaviors. These learned attitudes can also amplify risks that serve as barriers for individuals to obtain upward mobility, including a higher status and role in society (Sassler & Miller, 2010).

Socioeconomic status. A parent or caretaker's education level, job attainment, and income level are central to the adolescent's ecology indirectly (Bronfenbrenner, 1986). The more limited a parent or caretaker's access to employment and education is, the greater the likelihood that the child will experience a deficit of resources within the family ecology due to a limited generation of income (Umberson, et al., 2010). Long-term deficits in income, as defined by poverty lasting five or more years, denies the critical resources an adolescent needs to succeed in school and social relationships.

Examples of family and community resource disadvantage affecting adolescent behavioral outcomes can be found in Leventhal and Dupere's (2011) study of impoverished communities. Within five disadvantaged urban communities located throughout the United States, those families who were not exposed to income intervention programs and resources had adolescent females who experimented with marijuana and participated in sexual intercourse more frequently. Disadvantaged communities and families face greater barriers in assisting adolescents in preventing maladaptive development. These barriers include access to healthcare, education, and social support (Mendez, Carpenter, LaForett, & Cohen, 2009).

Family structure. There are many familial factors that can contribute to adolescent ecology. Changing rates of marriage, divorce, and re-marriage within the last few decades has reflected a change in the "traditional" two-biological parent family structure to an alternative, more flexible, diversified definition of family structure. With the formation of step-families, single-parent families, and cohabiting couples, increased rates of stress and instability may emerge as family structures change. Alternative family structures can be associated with higher stress due to financial strain, work-home balance, caretaking responsibilities, and lack of resources; particularly when there is a single parent (Umberson et al., 2010). Research by Biglan, Metzler, Wirt, Ary, Noell, Ochs, French, and Hood (1988) found that some alternative family structures can increase risk-taking behaviors and decrease prosocial behaviors in adolescence. This research suggests that fluctuating levels of financial and parenting resources that are more common in alternative family structures can be predictive of maladaptive adolescent outcomes.

A study by Sun and Li (2011) found that family structure and family stability were interrelated and predictive of the resources available in the family ecology. Children who are raised in a traditional family structure have a higher likelihood of attending college whereas children from an alternative family structure are more apt to experience financial disadvantage and low social and educational standing. This could reflect the amount of parental resources available within the alternative and traditional family structure (Astone & McLanahan, 1991). The alternative family structure can elicit low-levels of emotional, financial, and proximal support from outside partners and can have deficits in social capital, including monitoring and quality time, which are all critical in the adaptive social and emotional development of the adolescent (Gavazzi, 2011; Wu & Thomson, 2004).

The stress, instability, and conflict experienced by families during transitional periods such as divorce, cohabitation, multiple partner fertility, and prolonged single-parenthood inadvertently negatively impacts an adolescent's family ecology. This could be due to a breakdown of parental monitoring, family values, and effective modeling of behavior, common among chaotic or stressful family ecologies (Osborne & McLanahan, 2007; LaRossa & Reitzes, 2009). Alternative family structures can create chaos that influences the normative development of an adolescent through the parent-child relationship (Scharf, Wiseman, & Farah, 2011).

Family chaos. The more instability and chaos, as characterized by the disruption of daily life and a perceived lack of control, that an adolescent experiences in the family ecology, the greater the risk of developing behavior problems in adolescence (Kamp Dush, 2011; Osborne & McLanahan, 2007). Influential variables within the family ecosystem include family safety, including family violence and family emotional abuse,

and parenting practices. The health of an adolescent can be reliant on the stability of these influences.

A multiple risk factor model assessing disadvantaged children and families illustrates that as a child is exposed to more risk factors among multiple levels of the ecology, the potential for chaos increases, as demonstrated through the emergence of aggression in children exposed to instability (Kim, Orpinas, Kamphaus, & Kelder, 2011). Using an ecological framework, Connell, Gilreath, Aklin, and Brex (2010), found that the family was the strongest protective or risk factor in adolescent drug and problem behavior. Accounting for strong peer influence and internal motivations to deviate, adolescents were less likely to experiment with drugs and associate with deviant peer groups when parental influence was stable (Tolman & McClelland, 2011). This is demonstrative of the influence that parenting practices can have on adolescent outcomes, including exaggerating exposed risks or serving as a protective factor against risk in chaotic ecologies.

Positive parenting practices. Although alternative family structures can place adolescents at a higher risk for chaos, it is often because of the parenting styles and behaviors within the family ecology that are more predictive of adolescent behavioral outcomes than simply the family structure itself. (Kamp Dush, 2011). Positive parenting practices, characterized by high levels of support, warmth, and control, can help prevent the emergence of risky sexual behaviors in adolescence (Spinrad et al., 2011). Positive parenting can buffer against risk factors associated with risky sexual behaviors, including peer influence and biological temperament vulnerabilities. Positive parenting practices can also increase protective factors, including communication that consists of open

expression of emotion (Topham, Hubbs-Tait, Rutledge, 2011) which could decrease an adolescent's likelihood of externalizing behaviors, including early initiation of intercourse and multiple partner intercourse. Adolescents who experience positive parenting practices also experience emotional coaching, socialization, and exhibit fewer behavior problems and physical illnesses. A study by Havighurst et al. (2009) showed that adolescents who perceive their parents as possessing positive parenting practices are less likely to experience maladaptive development trajectories such as antisocial behaviors.

Negative parenting practices: Family emotional abuse & physical violence. A concentration of chaos in the family compounded by environmental stressors, often indicative of disadvantaged families, is associated with higher rates of negative parenting practices (Tolman & McClelland, 2011). Stressful or maladaptive family ecologies can stimulate negative parenting practices which is predictive of aversive outcomes for adolescents (Jaffee, Caspi, Moffitt, Belsky, & Silva, 2001). Negative parenting practices are categorized by high levels of control and low levels of warmth, nurturance, and support (Morris, Silk, Steinberg, Aucoin, & Keyes, 2011). This practice of parenting is parent-centered and deemphasizes respect and autonomy of the adolescent (Buschgens et al., 2009). Negative parenting practices have been identified as predicting psychopathological and deviant outcomes in adolescents, including low self-concept and self-reliance, early experimentation with drugs, alcohol, and compulsions, including lying, defacement of property, and shop lifting (Timpano, Keough, Mahaffey, Schmidt, & Abramowitz, 2010). An accumulation of compounded, family ecological chaos factors can heighten the disruption of daily living within the adolescent's ecology.

In extreme cases, negative parenting practices can be threatening and aggressive, including emotional abuse and family violence (Ritchie & Buchanan, 2011). Discipline indicative of emotionally abusive negative parenting practices can include coercion, ignoring, name calling, and psychological control (Rinaldi & Howe, 2011). This can increase the likelihood of rebellion or withdrawal in adolescents (Umberson, Pudrovska, & Reczek, 2010). Similar to the developmental outcomes of adolescents experiencing emotional abuse in the family ecology, family violence reflects similar deviant behavior outcomes in adolescence. Negative parenting practices, including emotional abuse or family violence, can create a hostile environment that fosters aggression and deviance that can manifest itself into behaviors such as substance use, violence, or withdrawal in adolescence. Parents who experience multiple risks could be more likely to utilize negative parenting practices as a means to detach or control the family ecology. For example, disadvantaged families could be more likely to present characteristics of negative parenting practices as a result of limited resources and other ecological chaos factors that can be present within these homes, including psychopathology and incidents of physical violence and emotional abuse (Brown & Ackerman, 2011).

Community chaos. Community ecologies that promote a safe neighborhood culture induce strong feelings of safety within its residents. This perceived feeling of safety includes the involvement of parents, stakeholders, and neighbors invested in the physical and emotional care of its ecological inhabitants. Schools that reside in neighborhoods that support feelings of safety and cohesion, including the exchange of knowledge, goods, and services, have children and adolescents that have higher graduation rates and attendance (Metzler, Noelle, Biglan, Ary, & Smolkowski, 1994). Communities that

engage in the joint partnership of schools and families reflect the cohesion and equality that encourages adaptive adolescent behavioral development. A mixed-method case examined by Leonard (2011) found that disadvantaged families, urban schools, and communities that prioritized adolescent students as significant and important increased the likelihood that students would develop adaptive, pro social behaviors. This case study reflected the importance of linking community resources, such as supportive parents, local businesses, and healthcare centers, to schools in order to increase adaptive, adolescent development in disadvantaged communities.

Community violence. Beyond chaos in the family, adolescents can live in chaotic neighborhood settings. By the time an adolescent reaches age 18, 76% to 98% have witnessed at least one act of violence within the community ecology (Lambert, Boyd, Cammack, & Ialongo, 2012). A review of community ecological influences on family ecology by Woolley et al., (2008) found that living in a disadvantaged community exposes adolescents and families to environmental risks, such as violence and substance abuse. In a study by Lambert, Boyd, Cammack, & Ialong (2012), adolescents who witness violence on behalf of a family member or friend developed adverse internalizing behaviors, such as depression and anxiety. Adolescents who witness random acts of violence towards an acquaintance or stranger in the community developed outward acts of externalizing behaviors, including aggression towards others.

As the amount of witnessed acts of violence towards a family member, friend, or stranger within the community increase, so does the likelihood of an adolescent deviating from adaptive development patterns. This deviation includes extensive use of alcohol and tobacco as well as participation in violent and non-violent criminal activity. An

important predictor of adolescent development and success in academics, peer, and romantic relationship is the influence of the community and neighborhood ecology. Although exposure to violence can happen in many contexts, exposure to community violence can encourage aggression and other maladaptive behaviors that emerge in the school and social context (Miller, Grabel, Thomas, Bermann, & Graham-Bermann, 2012). Adolescents who perceive their neighborhood as dangerous and stressful, or who perceive adult community residents to have high unemployment rates, have deficiencies in interpersonal growth reflected in relationships and academic endeavors, such as suspension, lower grades, and withdrawal from school (Woolley et al., 2008).

Limited healthcare access. A study by Friestad (2010) illustrates how marginalized groups, such as prison inmates, are denied healthcare resources based on social position, defined as occupation, employment, and income. Healthcare affordability and resources are more accessible to individuals with higher educational and economic influences, due to their higher status of social position (Woolley et al., 2008). Low social position is found to be disadvantageous to at-risk populations and serves as an indicator for substantial physical and mental health problems. Low social position also predicts a lack of resources and availability of healthcare resources. Children and adolescents who live middle to high income households have better physical health resources illustrating a higher social position than their disadvantaged counterparts (Jossaint, Siegler, & Barefoot et al., 2009).

In disadvantaged neighborhoods, unmet healthcare needs are more common than in communities with more access to resources. These disadvantaged neighborhoods may have lower employment and education statuses, reflecting a deficient in financial

resources, and therefore are not able to obtain the healthcare resources needed (Jaffee, Caspi, Moffitt, Belsy, & Silva, 2001). This cumulative disadvantage leaves many individuals and families without insurance or the ability to travel to receive affordable healthcare therefore inflating the environmental effects that a disadvantaged community can have on a family ecology already struggling with poverty and deficiencies in education. Families who live in disadvantaged communities experience prejudice, bias, discrimination, and ambiguity from healthcare providers (Nelson, 2002).

Limited mobility exacerbates unmet healthcare needs. Disadvantaged families and communities often experience decreased employment opportunities, education, and income which limit the mobility of individuals and families. This lack of mobility also reflects a limited ability to obtain and receive resources. These resources can be vital in the health of individual family members. An absence of or reduced access to healthcare establishes a void for preventative medical care (Peterson & Litaker, 2010). This void includes family planning services, contraception availability, and sexual health screenings and education that are shown as important in the prevention of childbirth during adolescence (Bertrand, Hardee, Magnani, & Angle, 1995).

Purpose of Study

Adolescent pregnancy is cyclical in nature as described by a cross-sectional study by Hoffman, Foster, and Furstenberg (1993). Researchers found that certain adolescents are at a greater risk of becoming pregnant than other peers their age (Crosnoe & Cavanagh, 2010). These at-risk adolescents often come from families that receive welfare, have low education attainment, income, access to healthcare, job status, and

have few future prospects. Women who become pregnant early along the life course often achieve lower educational and occupational attainment, thus perpetuating the cycle of disadvantage and adolescent childbearing.

Multiple ecological variables can simultaneously influence adolescent developmental outcomes. This study examines the associations between chaotic family and community ecological variables and adolescent risky sexual behavior outcomes. Risky sexual behavior is predicted to be concentrated among families and communities with a higher concentration of disadvantage, including limited access to resources and limited education attainment. Adolescence is a critical time of development in which the family and community influences and resources are important in shaping and defining the outcome trajectories of an adolescent's health and well-being.

This study includes several hypotheses regarding family and community chaos. The structural and contextual factors present in chaotic families and communities are explored to gain a better understanding of how that these ecological factors can hinder functional, effective adolescent growth as defined by abstinence or safe sex practices.

Hypothesis 1. Adolescents living in family environments that are more disadvantaged or chaotic will exhibit more risky sexual behaviors than adolescents living in more advantaged and less chaotic environments. There are several specific factors associated with disadvantage and chaotic family ecologies that will be tested.

Hypothesis 1a. Adolescents living in homes with lower socioeconomic status, as measured by parents' educational attainment, will be more likely to engage in risky sexual behaviors.

Hypothesis 1b. Adolescents living in alternative family structures will be more likely to engage in risky sexual behaviors.

Hypothesis 1c. Adolescents who experience positive parenting practices will be less likely to engage in risky sexual behaviors.

Hypothesis 1d. Adolescents who experience negative parenting practices, specifically family emotional abuse, will be more likely to engage in risky sexual behaviors.

Hypothesis 1e. Adolescents who experience negative parenting practices, specifically family physical violence, will be more likely to engage in risky sexual behaviors.

Hypothesis 2. Adolescents living in more chaotic community environment will exhibit more risky sexual behaviors than adolescents living in a less chaotic community environment. There are several specific factors associated with chaotic community.

Hypothesis 2a. Adolescents exposed to more community violence will more likely to engage in risky sexual behaviors.

Hypothesis 2b. Adolescents without limited healthcare access will be more likely to engage in risky sexual behaviors.

CHAPTER III

METHODOLOGY

Sample

The data for the study came from an online survey of seventh- through eleventh-grade students in an urban school district in the South Central U.S. Participants include 204 students ranging from 12 years through 19 years of age. Approximately 64% of the sample is female, 57% white, 30% black, 8% Hispanic, and 21% of sample participants are of 'other' race/ethnicity. If no systematic patterns of missing data are identified, missing values will be considered missing completely at random and will be treated using listwise deletion (Allison, 2002).

Procedure

Letters with information about the study and consent forms with self-addressed stamped envelopes were sent to approximately 12,000 parents of students in seventh- through eleventh- grades in the school district. Parents who agreed to allow their children to participate provided their children's email address on the consent form and mailed the form back to the principal investigator on the project. Students were notified about the

study and provided a link to the online survey through email. Oklahoma State University's Office of Research Compliance and the school district's Planning, Research and Evaluation Department granted permission to conduct the study, which included the approved consent and assent forms.

Measures

Adolescent risky sexual behaviors. The dependent variable for the current study, *Adolescent risky sexual behaviors*, is an additive scale ranging from 0 to 5 based on the participants' response to the 5 following questions. *Multiple partners* is measured by a question that asked, "With how many people have you ever had sexual intercourse?" and dichotomized such as 1 = '4 or more partners' and 0 = 'fewer than 4 partners'. *Oral Sex Partners* is measured as a dichotomous variable where a response of 'yes' is 1 =1 and a response of 'no' is 2 = 0. *Inconsistent use* is measured with the question "Thinking about the times you've had sexual intercourse, how often did you use birth control?" This variable is dichotomized as 'inconsistent use' (1 thru 4=1) and 'every time' (else=0). *Frequency of birth control use* was operationalized as "The last time you had sex, did you or the other person use birth control?" 'Yes' was scored as 0 and 'no' was scored as 1. *Young age at first intercourse* was scored such that youth who indicated first intercourse between the ages of 10 and 15 = 1 and youth who were older than 15 at first sexual intercourse, or who had not yet experienced first sexual intercourse were scored as 0.

Family ecological variables. The concepts of family disadvantage and chaos are conceptualized to include a variety of dimensions pertaining to family structure and parenting practices, including family emotional abuse and family physical violence.

Parent education attainment is used to determine level of disadvantage or presence of resources within the family. Variables were first coded for each parent individually, with a ‘high school diploma or less’=0 and ‘some college to college completion’=1. The parent variables were then combined to create a parent education variable where 0 indicates neither parent had more than a high school level of education, 1 indicates that one parent had at least some college, and 2 indicates that both parents had at least some college.

Family structure is assessed using a question pertaining to the adolescent’s home environment. “Who do you live with most of the time?” is dichotomized as ‘living with two biological parents’ = 1 and else=0.

Positive parenting practices is measured using items adapted from measures of parental care and support used in prior survey research with adolescents (Resnick, Bearman, Blum et al., 1997). This scale is composed of statements, such as: “We eat meals together” and “In general, my parents/guardians know where I am and what I am doing.” The items are designed to capture the adolescent’s perception of parent-child relationship quality. Responses range from “not at all” to “always”. Items are coded or reverse-coded so that high scores indicate greater parent-child relationship quality, and a scale was created following tests for reliability (Cronbach’s alpha = .78).

Family violence and *family emotional abuse* are measured to account for the presence of negative parenting practices within the family ecology. *Family violence* is determined by using the question “How often have your parents or caregivers hit, slapped, or kicked you?” ‘Never’ = 0 and all other responses on the survey’s Likert scale

indicating ‘exposure to physical abuse within the family ecology’ are coded as 1. *Family emotional abuse*, as indicated by the question “How often has a parent, boyfriend/girlfriend, or family member repeatedly ridiculed you, put you down, ignored you, or told you that you were no good?” is scored by dichotomizing the variables as ‘never’=0 and all other experiences of abuse=1.

Community ecological variables. The concept, *Community Chaos*, includes questions pertaining to disadvantage and chaos within the broader ecology. *Community violence* is assessed by a question regarding how often “...have you ever seen or heard violence such as beatings, shootings, or muggings that occurred in settings that are important to you, such as school or neighborhood?” and ranges from “never” or ‘once’=1 to ‘a few times’ or ‘many times’=0.

Limited healthcare access is a measure comprised of questions including, “Have you ever been to a clinic or a doctor for sexual health issues and services (like birth control, check-up, etc.)?” (No=1; Yes=0); “How much information did you receive from healthcare providers?” (1=None), and “Which one of the following (nurse, doctor, teacher) talked to you about reproductive healthcare?” (1=No health care providers talked to the respondent about reproductive healthcare). Questions are coded such that higher responses indicate more limited access to health care services or information.

Demographic and control variables. *Race* is assessed using one standard question: “With which race/ethnicity do you most closely identify?” Individuals who reported Hispanic/Latino ethnicity are classified according to coding rules that gave first priority to identification as “Hispanic” and second priority to identification as “Black.”

Based on this coding, dummy variables are constructed for *Black*, *Hispanic*, and *Other* compared to *White*, the reference category. *Gender* is coded as “1” *Female* and “0” *Male*.

Means and standard deviations of study variables are presented in Table 1, followed by a correlation matrix of ecological variables to determine the strength of these associations with risky sexual behaviors in Table 2. Finally, an ordinary least squares (OLS) regression analysis in Table 3 will examine *Family Disadvantage and Chaos* variables ‘parent education’, ‘family structure’, ‘positive parenting practice’, ‘family emotional abuse’ and ‘family violence’ and *Community chaos* variables ‘observed community violence’ and ‘limited healthcare access’ to determine significant effects on risky sexual behavior outcomes in adolescence.

CHAPTER IV

RESULTS

Descriptive Analysis

The means, standard deviations, and range for the study variables are presented in Table 1. With a range of 0-4 and a median score of .28, most of the study participants have not engaged in risky sexual behaviors. The study participants reported mean disadvantage scores indicating that 52% of respondents live in an alternative family structure and at least one parent has obtained some college education. Positive parenting practices were reported with a mean score of 1.15 out of 2. Approximately 41% of the respondents indicated that they have experienced family emotional abuse, and 28% reported experiencing at least some family violence.

At the broader community level, 32% of adolescent participants *observed violence in the community*. *Limited healthcare access*, as measured by questions regarding attendance of healthcare clinic, gaining information regarding sexuality, and speaking with a healthcare representative, demonstrated approximately 62.5% of participants (M=1.25 out of 2) reported receiving limited access to healthcare information.

Table 1. Descriptive statistics of study variables.

Variables	Mean	SD	Range
Dependent variable			
Risky sex	.28	.78	0-4
Demographics			
Female	.64	.48	0-1
Race			
White	.57	.50	0-1
Black	.30	.46	0-1
Hispanic	.08	.27	0-1
Other race	.21	.41	0-1
Family Disadvantage			
Parent education	1.15	.84	0-2
Family structure	.48	.50	0-1
Family Chaos			
Positive parenting practices	19.81	3.29	11-24
Family emotional abuse	.41	.49	0-1
Family violence	.28	.45	0-1
Community Chaos			
Community violence	.32	.47	0-1
Limited healthcare access	1.25	.68	0-2

Substantive Analysis

As presented in a correlation matrix of study variables in Table 2, strong associations are found between the study participant's family and community ecologies and occurrences of risky sexual behaviors in adolescence. *Family disadvantage* variable *family structure* is associated with *risky sexual behaviors*, with a significance of $p < .04$. A negative association between *risky sexual behaviors* and family ecological variable *positive parenting practices* supports the proposed hypothesis of the study with an alpha level of $p < .000$. While *family chaos* variable, *family physical violence* is not significantly related to adolescent *risky sexual behaviors*, *family chaos* variable *family emotional abuse* is found to have a strong association with *risky sexual behaviors* among study participants with a significance level of $p < .002$.

As evident in Table 2, *community chaos* variables *observed violence* and *limited healthcare access* are correlated with reported *risky sexual behavior* in adolescence.

Significantly associated with reported risky sexual behavior is an adolescent's reported exposure to acts of violence within the community. Study participants who observe violence within their community ecology have a positive association with risky sexual behaviors, with a significance level of $p < .001$. As observed violence within the community increased for study participants, therefore, so did their reports of participating in risky sexual behaviors. A positive association is found between *limited healthcare access* and *risky sexual behavior* ($p < .008$).

Table 2. Correlations of study variables.

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Risky sex	--												
2. Female	.03	--											
3. White	.01	-.04	--										
4. Black	.09	.00	-.56***	--									
5. Hispanic	-.11	.03	-.15*	-.15*	--								
6. Other race	-.05	.08	-.13	-.12	-0.06	--							
7. Parent education	-.17*	-.004	.29***	-.06	-.10	1	--						
8. Family structure	-.15*	.03	.21**	.08	0.04	.25**	1	--					
9. Positive parenting practices	-.31***	.05*	0.13	-.26***	0.09	0.05	.29***	.38***	--				
10. Family emotional abuse	.22**	.06	-.15*	.04	-.02	-.01	-.27***	-.13*	-.29***	--			
11. Family violence	.03	.03	-.24**	.18*	.00	-.02	-.05	-.00	-.31***	.29***	--		
12. Community violence	.23**	-.08	-.16	.24***	-.00	-.01	-.12*	-.09	-.26**	.11	.17*	--	
13. Limited healthcare access	-.19**	-.15*	.22**	-.03	-.11	.12	.13	.22**	.01	-.26***	-.03	-.01	--

Note: * $p < .05$; ** $p < .01$; *** $p < .001$.

Because the aim of this study was to determine the ecological factors that are the strongest predictors of adolescent *risky sexual behavior* outcomes, ordinary least square (OLS) regression analysis was used to determine the variance in risky sexual behavior outcomes when controlling for one or more of the *demographic, family disadvantage, family chaos* and *community chaos* variables. Results are presented in Table 3. Model 1 controls for background demographic variables and measures *family disadvantage* variables. Controlling for other demographic variables such as race and gender, *parent education* is negatively associated with *risky sexual behaviors*. As *parent education*

increases, adolescent *risky sexual behaviors* decrease. *Family disadvantage* variable *family structure* was not significantly related to reported risky sexual behaviors.

In Model 2 of Table 3, individual *family chaos* variables are included controlling for *gender* and *race* to test the strength of associations between familial ecological variables and adolescent risky sexual behavior outcomes. This includes *family chaos* variables *positive parenting practices*, *family emotional abuse*, and *family violence* as it relates to occurrences of *risky sexual behaviors* in adolescence. *Positive parenting practices* is significant at $p < .01$ and *family emotional abuse* at $p < .05$ which illustrates a significant relationship between positive and negative parenting practices and adolescent sexual behavior outcomes.

While controlling for race and gender, Model 3 illustrates adolescent risky sexual behavior outcomes association with *community chaos* variables. The significance of the relation between *observed community violence* and *risky sexual behaviors* in adolescence is $p < .01$. According to the present study, adolescents who have seen or heard violent happenings within their ecology report greater participation in risky sexual behaviors. *Community chaos* variable *limited healthcare access* is negatively associated with adolescent *risky sexual behavior* outcomes at $p < .01$. Both observed *community violence* and *limited healthcare access* have an independently significant relationship with risky sexual behaviors by adolescent participants.

Model 4 of Table 3, controlling for all variables, helps identify the primary questions underlying the current study. The *Family chaos* variable *positive parenting practices*, when measured with all other ecological ‘study’ variables, shows the strongest

significance in predicting adolescent risky sexual behavior outcomes. *Community chaos* variable *limited healthcare access* is also significantly related to adolescent risky sexual behavior outcomes. Both *positive parenting practices* and *limited healthcare access* demonstrate an alpha level of $p < .05$.

Table 3. Ordinary least squares regression analyses of risky sexual behaviors by demographic, family disadvantage and chaos, and community chaos variables.

Variables	Model 1			Model 2			Model 3			Model 4				
	<i>b</i>	<i>SE</i>	<i>Beta</i>	<i>b</i>	<i>SE</i>	<i>Beta</i>	<i>b</i>	<i>SE</i>	<i>Beta</i>	<i>b</i>	<i>SE</i>	<i>Beta</i>		
Demographics														
Female	.08	.11	.05	.09	.12	.06	.03	.11	.02	.05	.12	.03		
Race (White)														
Black	.03	.13	.02	.02	.14	.01	.04	.12	.02	-.02	.14	-.01		
Hispanic	-.35	.21	-.12	-.23	.22	-.08	-.37	.20	-.13	-.35	.22	-.11		
Other race	-.15	.14	-.08	-.11	.15	-.05	-.08	.13	-.04	-.10	.15	-.05		
Family Disadvantage														
Parent education	-.16	*	.07	-.17						-.10	.08	-.10		
Family structure	-.15		.12	-.10						.02	.13	.01		
Family Chaos														
Positive parenting practices				-.07	**	.02	-.27			-.05	*	.02	-.22	
Family emotional abuse				.31	*	.13	.19			.17	.14	.10		
Family violence				-.20		.14	-.11			-.17	.14	-.09		
Community Chaos														
Community violence							.33	**	.12	.20	.19	.13	.12	
Limited healthcare access							-.53	**	.17	-.22	-.52	*	.21	-.19
Constant	.55	***	.15	1.53	***	.43	1.17	**	.36	2.41	***	.59		

* $p < .05$; ** $p < .01$; *** $p < .001$.

Note: Reference category in parentheses.

CHAPTER V

CONCLUSION

Discussion

The purpose of this study is to examine the association and variability between ecological factors and adolescent risky sexual behaviors to determine the greatest predictor of adolescent risky sexual behavior. Most hypotheses are supported at least partially in the study. As hypothesized, adolescents living in disadvantaged family and community ecologies (as indicated by parental educational attainment) are more likely to engage in risky sexual behaviors, as indicated in Model 1 of Table 3. This supports Hypothesis 1a, indicating that adolescents who experience disadvantage in the home, in terms of socioeconomic status, are more likely to engage in risky sexual behaviors. Hypothesis 1b was not supported in Table 3, as family structure did not show a significant association with adolescent risky sexual behaviors, after controlling for one or more study variables.

In addition, Hypothesis 1 regarding family chaos was partially supported in Model 2 and Model 3. Adolescents who experience positive parenting are less likely to engage in risky sexual behaviors, confirming hypothesis 1c. This indicates that positive parenting practices can pervade the parent-child relationship, helping the adolescent to feel emotionally safe and nurtured. In addition, adolescents who experience negative

parenting practices that are emotionally abusive are more likely to report participation in risky sexual behaviors, confirming Hypothesis 1d. It is not surprising given the strength of association between positive parenting practices and adolescent sexual behavior outcomes that negative parenting practices, specifically emotional abuse, reflects a positive association with adolescent risky sexual behaviors. Hypothesis 1e was unsupported, as family physical violence was not shown as a significant indicator of risky sexual behaviors within this study. Although family violence can be categorized as a negative parenting practice in family literature, this study did not find significance in the association between family physical violence and adolescent risky sexual behaviors. Significant associations are found between several family chaos variables and risky sexual behaviors in adolescence suggest the importance of stabilizing parents in the family ecology of the adolescent during developmental stages that are important for growth and future development.

Within the family ecosystem, the parent-child relationship, as explored through the adolescent's perception of parenting practices, proved most significant in determining adolescent sexual trajectories. Confirming the proposed hypothesis, adolescents who experience positive parenting practices are less likely to initiate sexual activity at a younger age, are more likely to report using protection when sexually active, and report having fewer numbers of sexual partners. As reflected by this study, adolescents parented within the sphere of positive parenting practices report less engagement in risky sexual behaviors. Because positive parenting practices can be characterized as having open, flexible communicative patterns and reasonable boundaries, these adolescents experienced a warmer and, perhaps, a more nurturing parent-child relationship. This

safety and trust within the parent-child relationship has also projected a more adaptive, normative developmental outcome for adolescents. This includes resisting the habitual use of alcohol and drugs, a more positive, normative experience within the academic and peer ecology, and as this study concludes abstinence from risky sexual behaviors.

As predicted within the current study, adolescent perceptions of the parent-child relationship, which include positive and negative parenting practices, are significantly correlated with adolescent risky sexual behavior outcomes. Demonstrated in Model 2 and Model 4 of Table 3, adolescents are less likely to engage in risky sexual behaviors when positive parenting practices are employed within the family ecology, regardless of disadvantage in the family. This refutes the notion that the specific family structure can serve as an absolute protective factor for adolescents. Rather, the parenting style employed in disadvantaged families can buffer against an adolescents engagement of risky sexual behavior. Neither traditional nor alternative family structure is indicative of the emergence of prosocial or deviant behaviors in adolescence once parenting practices are accounted for in the analysis. Positive parenting practices, with the potential to be practiced in both traditional and alternative family structures and at all parental education levels, has the most opportunity of all family ecological variables studied to serve as a protective factor in preventing adolescent risky sexual behaviors.

Hypothesis 2a regarding community chaos was supported in Model 3; greater community violence is significantly associated with risky sexual behaviors. Hypothesis 2b was not supported, however; limited healthcare access was associated with fewer risky sexual activities. This is meaningful in demonstrating how direct and indirect ecological

influences, such as disadvantage within the community ecology, can pervade the growth and development of individual habitants within a family micro-ecology.

The significant correlation found between adolescents who observed violence within the community and increased rates of risky sexual behaviors can signify the trajectories of developing internalizing or externalizing behaviors in adolescence when exposed to violence. As adolescents begin to model observed aggressive or violent behavior, they are at risk for developing maladaptive physical and verbal deviant behaviors, which can place them on a future trajectory to peer violence, and as observed within the current study, risky sexual behaviors. Risky sexual behaviors can be the symptom of the underlying dysfunction of violence within the community ecology, demonstrating the broader influence that community ecology can have on individual development.

The current study's interest in access to healthcare within the broader ecology was to better understand how limited access in the community could encourage risky sexual behaviors in adolescence. Less access to contraception, health screenings, and information regarding sexual intercourse and biological sexual functioning was hypothesized to be linked to greater risky sexual behaviors. Interestingly, adolescents who participated in risky sexual behaviors report better availability and access to healthcare information and family planning services than those not participating in risky sexual behaviors. I suspect this reflects the initiation of healthcare services upon becoming sexual active rather than increasing access to healthcare increasing risky sexual behaviors. Due to the cross-sectional nature of the data, I cannot determine the order in which adolescents receive information and services and engage in risky sexual behaviors.

A better understanding of the order of sexual activity and healthcare access is needed to determine whether adolescents are acting in a proactive or reactive manner. Better understanding this order could encourage an increase in the availability of appropriate sexual health services and education for adolescents.

Strengths, Limitations, and Future Directions

This study contributes to the literature addressing emotional and behavioral difficulties experienced in adolescence. The family and community ecologies of the adolescent influence the development of risky sexual behaviors, both at a relationship and broader level. Rates of witnessing community violence in adolescence far exceed the rate of explicit victimization. Because observed community violence is significantly associated with the emergence of risky sexual behaviors in adolescence, important community action programs could be implemented to decrease the amount of violence within the neighborhood and school. Current community resources, such as recreational centers and extracurricular programs could be utilized extensively to buffer the effects of neighborhood violence on adolescents.

Community beautification programs could also decrease the amount of perceived violence within the ecological system and increase an adolescent's perceived feelings of safety. Some community studies, such as that by Alaimo, Reischl, and Allen (2010), found that by employing volunteers from the community to improve the community aesthetic, a 'network' of neighboring individuals bonded together, increasing social capital and investment within the community, improving residents overall health status, and decreasing crime rates. Perhaps a greater emphasis on the adolescent's broader

ecological system can be important in relinquishing aversive behaviors and risky trajectories.

As well as implementing mechanisms to strengthen the adolescents' community ecological system, a focus on strengthening the family ecology for which an adolescent directly participates is imperative in reducing the rate of risky sexual behavior. Focusing on the parent-child relationship, improvements can be made in bringing awareness and education to parents regarding effective discipline styles and communication patterns that could improve parenting practices. Parenting programs that emphasize positive parenting practices could potentially alter maladaptive and deviant pathways of development during adolescence, although this current study was not able to determine the causal relationship of parenting styles and adolescent outcomes. I am unable to determine if parenting practices predicted adolescent behaviors, or if adolescents behaviors initiated specific parenting practices. More information is needed to determine if parenting practices are primarily preventative, or, if positive parenting practices can be used as intervention with an adolescent already participating in risky sexual behaviors. Regardless of the precedence of events, prevention and proactive implementations of behavior modification within the family ecology can most certainly be the most effective.

Parents effecting change within the adolescent's family ecology can buffer against the effects of observed community violence. This study illustrates the concept of positive parenting practices as promoting resilient behaviors in adolescence. While negative parenting practices are associated with risky sexual behaviors in adolescence, parent education programs which aim to increase parental awareness of individual and adolescent development and seek to provide parents with skills concentrated in

authoritative parenting practices could have success in decreasing adolescent risky sexual behaviors. Because risky sexual behaviors carry a host of detrimental outcomes for individuals and communities, it is important to identify exposure to community violence and aversive parenting practices as avoidable, for which there is great room for improvement and prevention.

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Scope and Method of Study:

The ecology in which an adolescent lives plays a critical role in defining the outcome trajectories of health and well-being during this stage of development. In this current study, family and community ecological variables are explored to better understand the influence that environmental contexts have on adolescent risky sexual behavior outcomes. Utilizing a sample of 185 adolescents ages 12 to 19, results from ordinary least squares (OLS) regression models indicate both family and community contexts are associated with adolescent risky sexual behavior.

Findings and Conclusions:

In particular, family ecological variable *positive parenting practices* is significantly associated with risky sexual behaviors in adolescence when controlling for all other ecological 'study' variables. Included within this thesis are family and community level implications for improving adolescent risky sexual behavior outcomes.

ADVISER'S APPROVAL: Dr. Karina Shreffler
