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Intrapersonal and community-related influences of rural adolescent pregnancy: A mixed-method approach

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2009

ABSTRACT

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by

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MAT, East Carolina University, 2004
M.S., University of North Carolina at Greensboro, 2001
B.A., University of North Carolina at Chapel Hill, 1998

Dissertation Submitted in Partial Fulfillment
of the Requirements for the Degree of
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ABSTRACT

The majority of data on adolescent pregnancy pertains to urban communities, therefore, the individual and social influences associated with adolescent pregnancy in rural communities have not been extensively explored. The pregnancy rate among adolescent women aged 15 to 19 in rural Vance County, North Carolina, is 113.7 per 1,000, nearly twice the state average. This sequential mixed-method study used the social ecological model to evaluate the intrapersonal and community-related factors associated with adolescent pregnancy in this rural area. A quantitative survey assessed intrapersonal factors, namely sexual health knowledge, sex-related attitudes, and self-esteem in pregnant or parenting and nonpregnant or nonparenting groups. Two sample *t* tests revealed significant differences between groups relative to personal sexual values and attitudes toward premarital sex. There were no significant differences between groups for sexual health knowledge scores or self-esteem scores. Qualitative focus group discussions with one group, consisting of pregnant, parenting, nonpregnant, and nonparenting participants, assessed community opportunity structure as a behavior-influencing dynamic. Open-coding analysis revealed perceptions of strained employment and education-related structures, low community expectations of pregnant adolescents, and the influence of peer-related normative beliefs in early sexual intercourse. To bring about social change, community organizations should collaborate to engage participant-driven research while prioritizing the implementation of county-wide, comprehensive sex education programs. Improved programming could repair social norms, increase sexual health knowledge, and encourage personal responsibility over sexual health decisions.

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DEDICATION

This work is dedicated to my loving family. My purpose is renewed daily in your presence. Thank you for the love, laughter, and joy you have imparted in my life.

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The completion of this work would not have been possible with out the grace of my Lord and Savior Jesus Christ. There are no words to express my gratefulness for His favor and enduring love.

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INTRODUCTION TO THE STUDY

Introduction

Adolescence, the period between ages 10-19 years (World Health Organization, 2006), is an evolutionary time in which young people are forced to confront choices with major implications for their status in later life. Research in the behavioral and social sciences recognizes the importance of this transitional period and acknowledges the relationships between adolescent decision making and a host of factors that may influence these decisions (Bender, 2008; Commendador, 2007; Steinberg, 2007). As researchers assiduously continue their efforts to help young people advance into adulthood, a major focus continues to be the study of adolescent health behaviors and the factors influencing these behavioral decisions (Kohler, Schoenberger, Yu-Mei, Beasley, & Phillips, 2008; Penhollow, 2008). Among the adolescent health behaviors currently being researched extensively are those that affect sexual health outcomes (Adimora & Schoenbach, 2005; East, Reyes, & Horn, 2007; Lederman, Wenyaw, & Roberts-Gray, 2008).

Concerns about the outcomes of adolescent sexual health have yielded research on the early initiation of sexual activity, frequency of sexual encounters, and prevalence of interaction with multiple and high-risk sex partners (Little & Rankin, 2001; Reininger et al., 2005; Santelli, Lowry, Brener, & Robin, 2001). Each of these factors is typically considered a sexual risk behavior capable of increasing an adolescent's chance for sexually transmitted infections (STI) and human immunodeficiency virus [HIV] (Ball,

2008; Nelson & Morrison-Beedy, 2008). The risk is realized as almost half (48%) of all new STI cases occur in those aged 15-24 (Kaiser Family Foundation [KFF], 2004; Weinstock, Berman, & Cates, 2004).

Another outcome of risky sexual behavior, unintended pregnancy, is perhaps the most concerning as its impact potentially encompasses long-term social, financial, and health care-related problems (KFF, 2004). The U.S. adolescent pregnancy rate is 84 per 1,000 and the adolescent birth rate is 42 per 1,000 (National Campaign for the Prevention of Teen and Unplanned Pregnancy [NCPTUP], 2007). This birth rate is the highest in the Western world; one and one half times higher than the United Kingdom and more than three times higher than Canada (United Nations Statistics Division, 2006).

As health officials across the U.S. strive to manage the adolescent pregnancy issue, community-specific assessment is emerging as a key component toward effective program design (North Carolina State Center for Health Statistics [NCSCHS], 2008). Attentive assessment and improved program design is a specific need in rural areas. Rural areas are often underserved and face barriers such as limited funding and smaller numbers of public health providers which minimizes the capacity of outreach efforts (National Rural Health Association, 2008). With adolescent pregnancy rates sustained at similar levels or at rates higher than in urban areas (Bennett, Skatrud, Guild, Loda, & Klerman, 1997; Milhausen et al., 2003), rural communities require immediate attention. The lack of data about adolescent pregnancy in these areas limits appropriate interventions for reducing adolescent pregnancy rates.

Rural Vance County, North Carolina, is one area where the lack of adolescent pregnancy data constrains community prevention. Vance County, the target of this study, currently reports the highest rate of adolescent pregnancy in North Carolina with 113.7 pregnancies per 1,000 women aged 15 to 19 (NCSCHS, 2008). The purpose of this investigation was to explore intrapersonal and community-related factors associated with adolescent pregnancy in this rural area while simultaneously describing the relationship between the two sets of factors. The study used the social ecological model (SEM) as the theoretical framework to guide the inquiry, engaging a systems analysis approach toward community-specific analysis and interpretation.

Costs of Adolescent Pregnancy

Current trends suggest a 38% decline in adolescent pregnancy rates in the US between 1990 and 2004 (NCPTUP, 2009). Despite these trends, in 2004 over 400,000 adolescents gave birth, and one-third of those births were to teenagers aged 17 and younger (Hoffman, 2006). Both the adolescent parent and her child may endure significant consequences of early pregnancy. The social cost of pregnancy in adolescence is mainly poverty. Social scientists argue that there is a reciprocal relationship between child poverty rates and nonmarital childbearing by teenagers (Sawhill, 1998). Specifically, living in neighborhoods with families who are struggling financially places burdens on teens, possibly limiting their ability to prepare for life outside of their current conditions (Sawhill, 1998). Additionally, teen mothers are more likely to struggle financially, end up in the welfare system, and receive little to no child support payments

(Briend & Willis, 1997; NCPTUP, 2002). Such consequences inevitably perpetuate the poverty cycle, limiting the adolescent's ability to be financially self-supporting.

Adolescents giving birth could experience health-related problems. Adolescent mothers are at high risk for physical complications, such as pregnancy-induced hypertension, anemia, and premature birth (Centers for Disease Control and Prevention [CDC], 2007). The children born to adolescent mothers are more likely to experience poor overall health (CDC, 2007; Ventura, Martin, Matthews, & Clarke, 1996). Furthermore, adolescent parents are also more likely to neglect or abuse their children and have a child enter the juvenile justice system (George & Lee, 1997). These outcomes place a significant financial obligation on the public. The national financial costs of adolescent pregnancy have been estimated between $9 billion (Hoffman, 2006) and $29 billion dollars annually (George & Lee). Increased health care costs, increases in child welfare, costs for state prison systems, and lost revenue due to lower taxes paid combine to create this multibillion-dollar burden. Estimates attribute approximately $8.6 billion dollars of these public sector costs to teens having children (Hoffman).

Ultimately, it may be difficult to fully ascertain the costs of adolescent pregnancy (Hoffman, 2006). The psychosocial, cultural, and environmental consequences may indeed be immeasurable. With prevention as a goal, the focus of public health officials is on the consistent and meticulous assessment of the antecedents of adolescent pregnancy. Identifying antecedents could improve pregnancy prevention programming. A discussion of intrapersonal and community-related antecedents follows.

Antecedents of Adolescent Pregnancy

Intrapersonal Factors

Substantial literature explores the factors associated with adolescent pregnancy. A number of antecedents have been identified and most can be classified as intrapersonal, interpersonal, or community-related (Kirby, 2007). The common intrapersonal characteristics that were evaluated include knowledge, attitudes, and self-esteem. Knowledge is a behavior-supporting asset (Ajzen, 1988, 1991). Accordingly, researchers have focused on assessing adolescents' knowledge of sexual health to discern potential causes for risky behaviors. Many youth are misinformed about the risks associated with unprotected sex (KFF, 2004). Therefore, if the consequences of sexual behavior (e.g., pregnancy) are to be reduced, knowledge of sexual health will likely play a role. The assessment of both knowledge and attitudes is common when reviewing intrapersonal constructs.

Researchers prioritize attitude, a second intrapersonal characteristic relating to sexual behavior, because of the belief that attitudes drive behavioral decisions (Fazio, 1990). Sex-related attitudes have been shown to influence coital debut because anticipating negative attitudes after sexual intercourse reduces the likelihood of its occurrence (Rotosky, Regnerus & Comer, 2003). Additionally, strong refusal attitudes are related to high levels of sexual responsibility ratings in adolescents (O'Donnell, Myint-U, O'Donnell, & Stueve, 2003).Assessing attitudes provides context to adolescent behavior by framing the channels toward change that may be available (Smith, 2004).

Specifically, expressed attitudes could help define beliefs, which give meaning to why adolescents engage in certain sexual risk behaviors.

Evaluations of the third intrapersonal characteristic, self-esteem, presented conflicting results about its impact on sexual behavior. One cross-sectional study reported an inverse relationship between self-esteem and first sexual intercourse in adolescent females (Spencer, Zimet, Aalsma, & Orr, 2002). Another study reported no significant correlation between self-esteem and first sexual intercourse in adolescent males or females (Robinson & Frank, 1994). A third study's data supported the notion that high self-esteem is actually related to first sexual intercourse in adolescent males, citing increased sexual confidence as the behavioral support mechanism (Baumeister, Campbell, Krueger & Vohs, 2003).

Self-esteem combines with sexual health knowledge and sex-related attitudes to create a series of characteristics that are important toward in determining why adolescents choose certain sex behaviors and ascertaining exactly how this combination of intrapersonal structures contributes to pregnancy. Evaluating such characteristics in varying contexts makes the current literature compelling and comprehensive. However, the wide range of mitigating factors, such as peer influence, socioeconomic status, or age (Bazargan & West, 2006; Cubbin, Santelli, Brindis, & Braverman, 2005; Sieving et al., 2006) interacting with self-esteem, sexual health knowledge, and sex-related attitudes limits generalization of any results from one group to the next (e.g., in varying communities). These limitations justify the need for continued research on a per-community basis.

Community Factors

Interest in how the environment impacts human behavior is reflected in 20 years of literature suggesting the importance of the influence of a youth's community on his or her behavior patterns (Furstenburg & Hughes, 1997; Wilson, 1987, 1996). The role of communities in shaping health behaviors is best studied relative to the defining characteristics associated with these areas. Brewster, Billy, and Grady (1993) noted that "community characteristics define behavioral alternatives, and their associated social, psychic and economic costs" (p. 715). Research suggests that where youths live may shape a number of the outcomes they experience, both health and non-health related (Cubbin et al., 2005). Observations of sexual behavior, through the lens of community context, imply that contextual factors strongly associated with the community may influence the onset, frequency, or presumptive risk of sexual behavior (Brewster, 1994; Corcoran, Franklin & Bennett 2000; Langille, Flowerdew & Andreou, 2004).

The exploration of the community dynamic of adolescent sexual health has revealed that the probability of early intercourse and pregnancy is greater in communities with few adult role modes and communities with low levels of sex education in public schools (Brewster et al., 1993; Moore & Chase- Lansdale, 2001). Additionally, the community has been shown to influence behaviors such as nonmarital intercourse, number of sexual partners, and likelihood of engaging in unprotected sex (Baumer & South, 2001). Researchers argue that community characteristics, namely socioeconomic status, mandate a certain opportunity structure that drive adolescent sex behaviors (Cubbin et al., 2005). Specifically, poor economic and educational structures parallel

perceptions and acceptance of certain normative beliefs and behaviors (e.g. early sexual intercourse) leading to pregnancy (Baumer & South, 2001; Tickamyer & Duncan, 1990; Upchurch, Aneshensel, Sucoff & Levy-Storms, 1999). Considering opportunity structures is critical when exploring the community-related antecedents for pregnancy because it helps further explain the thought process relating to sexual risk behavior.

While the literature offers discourse on intrapersonal and community-related influences independently, it fails to establish and discuss the relationship between these two sets of factors. Communities undeniably have an impact on how individual normative beliefs are developed (Baumer & South, 2001). This study examined these interrelationships. This examination is crucial as researchers strive to understand how to manage health behaviors on a community level.

Interventions to Prevent Adolescent Pregnancy

Programs designed to reduce risky sexual behaviors (and subsequent pregnancy) in adolescents present multiple themes and methods. Predominant themes include the promotion of safer sex, promotion of abstinence from sex, and improvement in life skills including goal setting. Interventions encouraging safer sex often focus on topics such as HIV/STI prevention, attitude, other psychosocial variable modifications, and adaptation of sexual practices (Basen-Engquist et al., 2001; Didion & Gatzke, 2004; Jemmott, Jemmott, & Fong, 1998). Most safe sex-themed programs took place within school settings and targeted youth aged 12 to19. While some reported a marked decrease in sexual risk behaviors (Basen-Engquist et al., 2001; Didion & Gatzke, 2004; Kirby, Barth, Leland, & Fetro, 1991) others note delayed initiation of sexual activity (Hubbard, Giese,

& Rainey, 1998). Safer sex programs affected attitudes as researchers noted changes in attitudes toward sexual initiation, becoming pregnant, and parenting as a teenager (Somers & Fahlman, 2001).

Program evaluations of abstinence education reveal that most programs improve participants' knowledge and sex-related beliefs (Borawski, Trapl, Lovegreen, Colobianchi, & Block, 2005; Kirby, Korpi, Barth, & Cagampang, 1997). These changes were not sustained over time. In fact, within an average of about 8 months, the program effects are lost completely (Kirby et al., 1997). In addition, with sexually active youth, the effectiveness of abstinence programs in decreasing the rate of sexual activity or improving students' attitudes toward early sex is not significant (Barnett & Hurst, 2003; Sather & Zinn, 2002; Zanis, 2005).This may have something to do with the impact of gender-related pressure. Gender has an effect on attitudes before participation in abstinence education (Smith, Steen, Schwendiger, Spaulding-Givens, & Brooks, 2005). The data demonstrated that the adolescent male exhibits less faith in his ability to abstain from sex (both pre and postintervention) when compared to the adolescent female. Knowledge and attitudes in adolescent men do improve as a result of intervention but their scores on test items are still lower than adolescent women.

Another program mode includes a focus on life skills and goal setting. Its purpose is to delay sexual activity by focusing on the importance of planning for the future and preparing for long-term goals (Herz, Ries, & Barbera-Stein, 1986; Kelly, Bobo, McLachlan, Avery, & Burge, 2006). Program modalities included a series of educational and skill-building sessions that took place in either a school or community setting and

ranged significantly in implementation time frame. Assessment of outcomes revealed increased academic achievement and employment gains (Philliber, Brooks, Lehrer, Oakley & Waggoner, 2003) and increased school activities. Herz, Reis, and Barbera-Stein (1986) reported decreased acceptance of premarital intercourse while Philliber et al. (2003) affirmed a decrease in the rate of repeat pregnancy. In contrast, Yampolskaya, Brown, and Vargo (2004) noted no statistically significant differences between program participants and control groups when compared on personal orientation and judgments about teenage parenthood.

The conflicting evidence on the effectiveness of the various types of pregnancy prevention programming is the main factor driving the need for more research on the antecedents of adolescent pregnancy. The notable limitations with abstinence programs included their lack of sustained improvements in knowledge, attitudes, and other outcome variables (Borawski et al., 2005). Life-skills-based programs provided a means by which adolescents could visualize their future but may lack the sex education emphasis needed to produce changes in sexual risk behaviors. Safer sex or comprehensive programs offer the most promise. The multiplicity of objectives and promotion of both contraceptive use and abstinence practices allows these programs to reach a larger range of students, especially those who are already sexually active (Lamstein & Haffner, as cited in Borawski et al., 2005). These programs have proven to be the most successful and consistent thus far. However, there are concerns over the “sex-is-okay” implications implicit in comprehensive sex education (CSE) messaging (Collins, Alagiri, & Summers, 2002). CSE programs are not designed to encourage teens to engage in sexual activity

through the contraceptive discussion, however, critics of such programs note they may not effectively discourage teen sex (Martin, Rector, & Pardue, 2004). Critics are also concerned that the abstinence message may be subdued amid discussions of contraceptive modalities and practices.

The focus of most pregnancy prevention programs is on intrapersonal level factors, issues related to attitudes, knowledge, and individual behavior. While these factors influence behavior choices, it is important to consider other behavioral influences as well. Kirby (2001) noted that the consequences of adolescent sexual activity are often overshadowed by the short-term effects of preventative programs. Occasional school-based or community center programs are not enough to support long-term behavior change. Since teen sexuality is influenced by a number of factors, including parents, schools, and communities, the research focus must shift to include environmental influences with hopes of improving knowledge of these multiple levels of influence.

Kirby (2001) advocated an emphasis on communities and environmental circumstances because he observed that a large proportion of all the risk factors involve some form of environmental disadvantage. Acknowledging the complex nature of risk and protective factors that influence adolescent pregnancy affirms that no single intervention will be able to address the problem. However, researchers can advance adolescent pregnancy prevention causes by concentrating their efforts on the evaluation of specific communities and associated contextual issues that may influence adolescent sexual behavior.

Rural Adolescent Populations

The majority of assessments seeking to expose antecedents to pregnancy have focused on urban populations (Bennett et al., 1997), The purpose of researching these populations is because some urban areas have high rates of adolescent pregnancy (Henshaw & Fievelson, 2000). Evaluations revealed the impact of poverty, lack of education, weak family structures, and peer acceptance of pregnancy as areas of concern (Bennett et al., 1997; Milhausen et al., 2003).While these data are valuable, they should not be generalized to nonurban groups. Moreover, the emphasis on one geographical area severely minimizes how public health educators can use new data, and this limits their ability to manage adolescent pregnancy in rural areas. Rural adolescents may face challenges that are similar to their urban counterparts. However, due to their locale and the social influences within their communities, their experiences and decision-making processes related to sexual behavior inevitably differ. For that reason, researchers must delineate adolescent groups based on local and social ecological circumstances.

Rural areas pose a variety of obstacles to health educators and healthcare providers. Many rural residents are poorer than urban residents. Approximately 24% of rural children live in poverty (Nation Rural Health Association, 2008). The combination of financial constraints and smaller numbers of practicing physicians and other healthcare professionals limits rural residents' access to healthcare services (Gamm, Hutchinson, Dabney & Dorsey, 2003). These circumstances affect the quality of care and educational interventions that rural residents are able to receive. The result is significant disparities between rural and urban groups. One area of concern is adolescent pregnancy. An

analysis of 2000 census data revealed that adolescent birthrates were generally higher in rural areas when compared to urban areas (Carter & Spear, 2002).

Lack of Data

The complexity surrounding these disparities is compounded by a significant lack of data. A few large-scale studies reviewing national samples of adolescents provided comparisons between urban and rural populations (Crosby, Yarber, Ding, & DiClemente, 2000; DiClemente, Brown, Beausoleil, & Lodico, 1993; Lammers, Ireland, Resnick, & Blum, 2000). While some data show that rural adolescents are more likely to be sexually experienced (DiClemente et al., 1993) and did not use condoms during their last intercourse (Crosby et al., 2000; Milhausen et al., 2003), others report that rural residence may be a factor predicting delayed age of sexual debut (Lammers et al., 2000). Data from the National Longitudinal Survey of Adolescent Health noted that residence (urban or rural) was not associated with STD incidence, which implicates similar levels of risk between the two areas (Crosby, Leichliter & Brackbill, 2000). The inconsistencies within the data imply the need to continue exploring multiple levels of influences on the sexual behavior of rural adolescents. Moreover, researchers should consider communities as inimitable, which necessitate the assessment of many different populations at risk. Rural Southern communities are nontypical targets for in-depth analysis.

Vance County, North Carolina

Social setting and households. Vance County, North Carolina, is located in the north central portion of North Carolina on the Virginia border. The U.S. Census Bureau (2006) estimates that the county is home to 43,810 residents. Vance County is minimally

diverse with White and Black residents representing 52.6 % and 48.4% of the population, respectively (U.S. Census Bureau). Persons of Hispanic or Latino origin represent 5.9% of the population .The majority of the population is aged 25 to 54 and women outnumber men 52.7% to 47.3 % (U.S. Census Bureau). Of the 11,643 family households, approximately one-third are comprised of a woman householder (no husband present) and one-half is married-couple families. The average household size is 2.1 persons and the average family size is 3.1 persons. Nonfamily households account for 4,556 of the total households (U.S. Census Bureau).

Economic characteristics. Of the population, aged 16 and over, 61.2% are in the labor force in Vance County (U.S. Census Bureau, 2006). The median household income as reported in 1999 was $31,301 (U.S. Census Bureau). As of 2004, it dropped to $30,498. Median earnings for full-time year-round working men are $28,284 and $21,433 for full-time year-round working women (U.S. Census Bureau). Sixteen percent of the total households in Vance County earn less than $10,000 annually (U.S. Census Bureau). Families living at or below the poverty level are of great concern in Vance County. Approximately 20.7% of the residents in Vance County live below the poverty level and of those families, 28.8% have children aged 5 or younger (Action for Children, 2006a). A substantial number (35.8%) of these families have women householders with no husband present.

Economic development in the county is slowing. Private nonfarm employment declined 11.2% between 2000 and 2005 (U.S. Census Bureau, 2006). Moreover, significant job losses in the manufacturing field have placed strains on the county's

workers because the majority of those employed in Vance County report working in the manufacturing field (U.S. Census Bureau). The unemployment rate in Vance County rose from 8.3% to 10.4% between 2000 and 2006. Approximately 77% of all Vance County workers classify themselves as private wage and salary workers. The average wage per job is $25,327 (U.S. Census Bureau).

Educational attainment. Of those aged 25 and older in Vance County, 68.1% are high school graduates or higher, meaning they have had some schooling after high school (U.S. Census Bureau, 2006). Only 10% of this part of the population have bachelor's degrees or higher. As of 2006, the high school dropout rate was 6.70 down from 8.26 in the year prior. This represents a decrease of almost 20%. These rates are higher than those sustained across North Carolina (average 5.24% dropout rate) (North Carolina Department of Public Instruction, 2008). The Milton and Rose Friedman Foundation estimated that students who drop out cost North Carolina taxpayers approximately $169 million annually in lost tax revenues and higher Medicaid costs (Hui, 2008). Overall, the social setting in Vance County is typical of many rural areas in North Carolina. It is faced with declining employment opportunities, growing families, and lower yearly earnings. These characteristics undoubtedly set up an opportunity structure that makes higher education attainment and long-term economic stability more difficult. The impact of this setting on young people is of concern and was assessed in this study.

North Carolina, a largely rural state, has the ninth highest adolescent pregnancy rate in the country (NCPTUP, 2007). Vance County has the state's highest adolescent pregnancy rate. Vance County school and health affiliates are seeking to provide

appropriate interventions. The analysis of both intrapersonal and community-related factors related to pregnancy in this rural community, and the changes in policy and practice that emerge from this analysis, is critical to the success of future interventions. Although Vance County presents several of the community-related correlates of high levels of adolescent pregnancy—including high poverty rates, limited economic stability, and high unemployment (Action for Children, 2006b)—it is unclear whether these characteristics mediate youth sexual behavior choices. Data from this population relative to intrapersonal constructs, a known area of behavioral influence, do not exist.

Research supports the argument that both intrapersonal and community factors mediate sexual behavior and thus the incidence adolescent pregnancy (Carter & Spear, 2002; Kirby, Coyle, & Gould, 2001). Nonetheless, researchers admit the complexity associated with suggesting a causal relationship linking intrapersonal and community factors to a sexual behavior outcome such as pregnancy (Kirby, 2007). To clarify these relationships and provide more description about the impact of any factor (or set of factors) on human behavior, examining each factor individually and in combination with others to identify emerging interrelationships is imperative. Therefore, the study of intrapersonal and community characteristics, both independently and in combination, may serve to demystify the connection between one's environment, the development of self, and the summative influence these relationships have on the incidence of adolescent pregnancy. Chapter 2 discusses the importance of the relationship between individuals and their environment and specifically explains how an area of residence influences health-related decisions.

Problem Statement

The pregnancy rate among adolescent females aged 15 to 19 in Vance County, North Carolina is 113.7 per 1,000, nearly twice the state average (NCSCHS, 2008). This prevalence denotes a systemic problem that may be improved by examining social ecological variables of influence. Since social ecological systems conceptualize the need to assess each level of behavioral influence to better describe the health problem (McLeroy, Bibeau, Steckler, & Glanz, 1988), the absence of data relative to the two social ecological levels, intrapersonal and community, not only limits understanding of the scope of pregnancy risk in this population but also makes successful interventions difficult if not impossible. To identify antecedents of pregnancy, intrapersonal factors—namely knowledge, attitudes, and self-esteem—were assessed and compared among pregnant or parenting and nonpregnant or nonparenting groups. To provide perspective about the interaction of community with the individual, perceived opportunity structure, a community-related characteristic was also evaluated. An analysis of both levels' individual impact and their interaction with each other produced data that outline the problem. Previous studies used data relative to intrapersonal and community factors, described within a social ecological context, to develop precise interventions targeting adolescent pregnancy (Bull & Shlay, 2005; Cocoran, 1999).

Purpose of the Study

The purpose of this sequential, mixed-methods study was to assess rural women aged 13 to19 to identify the intrapersonal factors associated with adolescent pregnancy and to describe their perceptions of their community and its impact on their sexual health

decisions. To asses these issues, both quantitative and qualitative methods were used. Two participant groups—pregnant or parenting and nonpregnant or nonparenting—were generated for hypothesis testing. The quantitative phase, the first phase, used a survey instrument to evaluate sexual health knowledge, sex-related attitudes, and self-esteem. These variables were evaluated by reviewing scores from three assessments: (a) Mathtech Knowledge Test (MKT), (b) Mathtech Attitude and Value Inventory (MAVI), and (c) Rosenberg Self Esteem Scale (Kirby, 1984; Rosenberg, 1989). The second phase used focus group discussions, a qualitative method,to illuminate perceived community opportunity structure and associated constructs. The objectives of this project were to (a) expand the literature on antecedents of rural adolescent pregnancy and sexual behavior practices, (b) assess rural adolescent female perceptions of the influence of community on sexual behaviors, and (c) provide data to county public health officials to improve the design of policies and interventions for communities and schools. Chapter 3 details the methods used to reach these objectives.

Research Questions

The following research questions were proposed to address the study problem,:

1. What is the status of intrapersonal constructs (sexual health knowledge, sex- related attitudes, and self-esteem) in pregnant or parenting and nonpregnant or nonparenting females aged 13 to 19?

2. Are intrapersonal constructs (sexual health knowledge, sex-related attitudes, and self-esteem) associated with adolescent pregnancy incidence in this county?

3. How do pregnant or parenting and nonpregnant or nonparenting adolescent females aged 13 to 19 perceive the community opportunity structure in this rural area?

4. What is the impact of perceived community opportunity structure on adolescent intrapersonal constructs?

5. How does perceived community opportunity structure contribute to sexual behavior leading to pregnancy?

6. What modalities do adolescents perceive as helpful in pregnancy prevention?

Research Hypotheses

The three hypotheses of the study pertain to the quantitative portion of the study and relate to research questions 1 and 2.

Hypothesis 1:

H_0: There will be no statistically significant difference in the sexual health knowledge scores of those in the pregnant or parenting group when compared to those in nonpregnant or nonparenting group.

$H_{A:}$ There will be a statistically significant difference in the sexual health knowledge scores of those in the pregnant or parenting group when compared to those in nonpregnant or nonparenting group.

Hypothesis 2:

H_o: There will be no statistically significant difference in the sex-related attitude scores of those in the pregnant or parenting group when compared to those in the nonpregnant or nonparenting group.

$H_{A:}$ There will be a statistically significant difference in the sex-related attitude scores of those in the pregnant or parenting group when compared to those in the nonpregnant or nonparenting group.

Hypothesis 3:

H_o: There will be no statistically significant difference in the self-esteem scores of those in the pregnant or parenting group when compared to those in the nonpregnant or nonparenting group.

$H_{A:}$ There will be a statistically significant difference in the self-esteem scores of those in the pregnant or parenting group when compared to those in the nonpregnant or nonparenting group.

Conceptual Framework

The conceptual framework used for this inquiry is the SEM as proposed by McLeroy et al. (1988). This model draws its structure from Bronfenbrenner's (1979) ecological model of human development with influences from Belsky (as cited in McLeroy et al., 1988). This model emphasizes the importance of both individual and social environmental factors as contributors to health behavior. Designed to be of use in health promotion efforts, SEM is useful because it focuses on the root of patterned behavior as described by a series of five levels: intrapersonal, interpersonal, institutional, community, and public policy. The basic assumption driving this model is that "the ecological perspective implies reciprocal causation between the individual and the environment" (McLeroy et al., p. 354). This means that not only does each of these levels

individually affect behavior, but also they also affect and interact with each other to affect behavior (McLeroy et al., 1988).

The SEM has been used to assess the factors contributing to a variety of health behavior outcomes, including HIV prevention (DiCLemente, Salazar & Crosby, 2007), physical activity (Elder et al., 2006), and diabetes care (Fisher et al., 2005). The authors that have used the model to assess the context under which adolescent pregnancy takes place posit that many factors contribute to adolescent pregnancy and offer a framework for developing prevention programs (Bull & Schlay, 2005; Corcoran, 1999; Kirby & Lepore, 2007).

In using the SEM, this study sought to give structure to, and present the emerging relationships between, the constructs evaluated at the chosen levels: intrapersonal and community. For the intrapersonal level, the constructs chosen (sexual health knowledge, sex-related attitudes, and self-esteem) guided the development and selection of tools for the quantitative portion of this study. To improve understanding of community opportunity structure and its influence on sexual health decision making, community influences were examined in the qualitative phase. McLeroy et al. (1988) noted the importance of merging individual and social influence when discussing causality of health behaviors.

Additionally, discussion of the results framed by ecological systems thinking allows for greater depth of understanding and provides a context to otherwise simplistic results (Cocoran, 1999; DiClemente, Salazar, Crosby, & Rosenthal, 2005; McLeroy et al., 1988). The SEM's emphasis on systems thinking (the importance of multiple influences)

allows the user to analyze data, present policy and programming implications, and provides a conceptualization of the problem by identifying influential factors at multiple levels and discussing their interactions.

Operational Definitions

Adolescence: the period between ages 10-19 years (World Health Organization, 2006). Adolescence is also described as "the period of physical and psychological development pertaining to the onset of puberty through maturity" (*American Heritage Online Dictionary*, 2000a). Adolescence is best measured by assessing age, which gives an indication of maturation status.

*Attitud*e: a favorable or unfavorable disposition towards a behavior. It is related to the accumulation of information and the predisposition to act positively or negatively about an object, situation, or experience (Littlejohn, 2002). Attitude is measured through the administration of an assessment relative to the disposition (e.g. acceptance of teen pregnancy or sex- related attitudes). The Mathtech Attitude and Value Inventory (Kirby, 1984) was used in this study to assess sex-related attitudes.

Community: an aggregate of individuals in a specified geographic location dealing with the presence identified mediating structures (Cox as cited by McLeroy et al., 1988).

Intrapersonal: characteristics of the individual including, but not limited to, knowledge, self-concept, and attitudes. The study of intrapersonal factors includes consideration of the developmental history of the individual (McLeroy et al., 1988).

Knowledge: a general awareness of information, facts, truths or principles relative to any subject (*American Heritage Online Dictionary*, 2000b). Knowledge is measured

by administering any assessment relative to the topic of concern. A score or value is assigned indicating the level of knowledge currently sustained by the individual.

Opportunity structure: The formation of an opportunity framework that shaped by society's organization. How the chance to gain rewards or reach certain goals is developed by societal establishments (Walker & Sutherland, 1993).

Self-esteem: Referring to an individual's sense of value or worth or the extent to which persons like themselves (Blascovich & Tomaka, 1991). Self-esteem can be measured by administering a self-esteem inventory, such as Rosenberg's (1965) Self-Esteem Scale.

Sexually experienced: Having had sexual intercourse within one's lifetime (Child Trends, 2003, p. 3).

Sexually inexperienced: Not having engaged in sexual intercourse (Child Trends, 2003).

Scope and Limitations

The scope of this study and its results are limited to the female adolescent population aged 13 to19 in Vance County, North Carolina. Although the factors exposed may call attention to the problem in other rural areas, the results may not be generalized with confidence because of the unique community dynamic experienced by these participants. The age group requirement was important because of the high rate of adolescent pregnancy among the 15 to 19 age group in this county (NCSCHS, 2005). Assessment of those aged 13 and 14 was completed to provide insight to the health risk behaviors and related attitudes of younger adolescents. This information may prove

important for community prevention programs. The participants were recruited from community-based sites including county-supported adolescent groups and school-based support groups.

The first limitation pertains to assessment of only two levels of the SEM. This study did not seek to expose or discuss factors associated with adolescent pregnancy on the interpersonal, institutional, or public policy levels of the SEM. Omitting these levels limits the production of context-rich data that would otherwise improve the examination of health problems (McLeroy et al., 1988). Due to constraints in time and resources, the researcher was not able to engage the population for extended periods of time. This potentially limited the fullness of the descriptions of the relationships between the independent and dependent variables obtained through qualitative inquiry. Additionally, significant procedural issues prohibited the researcher from assessing a larger number of members of the target population. Federal regulations required full parental consent for the participation of minors in this study. Consequently, large numbers of participants, specifically those available in school settings, were difficult to enroll. The community partners warned of historically low rates of response for issues requiring parental consent. The convenience sampling used in the qualitative portion decreases the generalizabilty of any findings.

As a final limitation, external validity may have been compromised because of the methods of sample selection. Convenience sampling was used in this study to improve success in the recruitment of participants. This method prohibits the selection of a truly random sample, therefore making it possible that the sample does not fully

represent the population to which the results are being generalized. While it is unlikely that the members of this sample present characteristics uncommon to the population they represent, the sampling procedures used do present this possibility.

Significance of the Study

The study of adolescent pregnancy and the intrapersonal and community factors that contribute to adolescent pregnancy is important for two reasons. First, understanding the factors that contribute to adolescent pregnancy in Vance County, North Carolina, can provide updated data to public health officials seeking to develop better programming for the adolescent population. The majority of the data collected in the county to date has been simple, descriptive statistics on the incidence of various sexual behavior outcomes. While these data are important, context-rich data derived from mixed-method procedures could expose the antecedents of pregnancy while providing insight about the environment's influence on them. This type of information could serve to direct health education decisions of the adolescent population.

Second, this study contributes to research literature through its discussions of the relationship between intrapersonal constructs and the community context under which adolescent pregnancy takes place in a rural setting. Describing this relationship is arduous but must be undertaken to advance the sexual health status of rural adolescent populations. Descriptions of community context, the impact community context has on self, and the subsequent impact these relationships have on sexual behavior outcomes, like pregnancy, will help clarify this health problem.

Social Change Implications

This study identified one area of the need for social change and sought to advance change through a contextual analysis of a socio-environmental problem. Adolescent pregnancy in the rural area that was the focus of this study is influenced by attitudes and normative beliefs impacting sexual behavior. Poor sexual health knowledge may precede errant sexual behavior because of a lack of perceived risk for the related consequences. Additionally, the adolescent mothers in this area are often subjected to down talk and connotations of inadequacy. Social change in these conditions should begin with (a) an adherence to public school health education policy advocating comprehensive sex education, (b) relating sexual health to greater personal opportunity for young people, and (c) working to revise potentially harmful normative beliefs among both adolescents and adults. These actions could improve the long-term health outcomes for adolescents while decreasing pregnancy incidence in the county.

Adolescent sexual behavior and the consequential outcomes, including early pregnancy, places affected youth and their children at risk for various issues related to health and lifestyle. The best educational and other preventive efforts of public health officials are not consistently effective in a variety of settings. The lack of connection between data, policy, and intervention leaves many teens dealing with the consequences of their actions, some of which may have been avoided with properly designed interventions.

The adolescent pregnancy rate in Vance County, North Carolina, has long been one of the highest in the state. Gathering data relevant to this problem and using it toward

the development of educational interventions could be the catalyst for the radical reduction of adolescent pregnancy in this county. Mechanisms by which this data could be used include choosing appropriate school and community-based programming and innovative policy insertions. Pregnancy reduction among the adolescent population will not only ease the impact of adolescent parenthood on an already struggling community but allow these youths time to better prepare for future endeavors while manifesting their lives fully without the constraints of early parenthood.

Summary

This chapter presented a summation of the current descriptions of the relationship between intrapersonal factors, community-related factors, and adolescent pregnancy in Vance County, North Carolina, a rural community. Limited data exist that aptly describe the scope and significance of adolescent pregnancy incidence in rural areas. The SEM used in this study outlines the levels of influence interacting with this problem in this rural community while creating a framework for the development of future interventions. This study revealed that attitude is an influencing factor in sexual behavior decision making. Low sexual health knowledge may sustain these errant attitudes while community structures limit future opportunities for young mothers. While the relationships between community and intrapersonal factors are complex, this study revealed not only that these SEM levels interact, but also that they impact pregnancy incidence in this rural area.

Chapter 2 discusses how adolescent sexual behaviors, and pregnancy as an outcome, are productively assessed using the SEM. This chapter also discusses the

conflicting nature of data on intrapersonal constructs and argues the need for further research in rural communities. Chapter 3 presents the methods and data analysis procedures. A mixed-method procedure was used to sequentially assess intrapersonal and community-related constructs. Chapter 4 presents the results implicating poor sexual health knowledge, personal sexual values, and attitudes toward premarital sex as significant factors pertaining to pregnancy incidence. Chapter 5 details important conclusions, recommendations, and social change implications relative to adolescent pregnancy in a rural setting. These include the need for a stronger commitment to sexual health education, extensive data collection for more precise interventions, and revising the negative expectations of the pregnant adolescent.

CHAPTER 2:

LITERATURE REVIEW

Introduction

The exploration and analysis of intrapersonal and community-based factors associated with adolescent pregnancy is required to fully understand the context of such influences. For the purposes of expanding the background substantiating this sequential, mixed-methods inquiry, this review discussed literature relevant to adolescent pregnancy, including adolescent sexual health statistics, antecedents of adolescent pregnancy, and intrapersonal and community-related factors such as manners of social and contextual influence. The social ecological model (SEM), the theoretical framework of the study, provided support for the examination of intrapersonal and community-related factors by presenting each factor's nature of influence with adolescent pregnancy. The goal of this literature discussion was to relate the importance of social context factors on adolescent pregnancy incidence while conjecturing the relationships between individual development, the structure of one's community, and consequent health behaviors.

Peer reviewed professional journals, books, data from public health entities, and personal communications related to adolescent pregnancy supplied the information found in this literature review. Databases used included Academic Search Premier, CINAHL Plus with full text, SAGE Health Sciences Collection, Nursing and Allied Health Source, PsycINFO, and SocINDEX with Full Text. Keywords and phrases used as search terms included teenage pregnancy, teenage sexual activity, attitudes and sex, sex education, self-esteem and sexual activity, community and health, rural adolescent, and opportunity

structure. The final selection of relevant articles was made by determining which studies presented sound science and compelling discourse on the topic. The data used in this review were analyzed by creating a literature matrix (based on this study's variables and major constructs) that outlined each article's discussion of population, methods, results, limitations, and possibilities for future research.

The search for literature relevant to adolescent pregnancy was complex because there are many studies available. The challenge was finding articles that specifically related to the focus of this study. Specific difficulties were experienced when searching for literature discussing the interrelationships among three issues: (a) intrapersonal factors, (b) community structures, (c) and adolescent pregnancy. The examination of adolescent pregnancy heavily focuses on the impact of a wide variety of intrapersonal constructs on pregnancy incidence (Kirby, 2007). The ecological systems model has emerged as an addendum to the traditional focus on the individual, proposing the importance of both intrapersonal and community-related factors as simultaneous influences on behavior (McLeroy et al., 1988). The literature presented supports the connections made between the individual and their community and helps communicate the importance of multiple influences on adolescent sexual behaviors.

Adolescent Sexual Behavior

The overall health of adolescents is highly determined by their behavioral practices (U.S. Department of Health and Human Services [USDHHS], 2001). Sexuality is of specific concern in the area of adolescent behavioral health (Meschke, Bartholomae, & Zentall, 2000). The Centers for Disease Control and Prevention [CDC] (2008)

determined sexual risk behavior as one of the six major behavioral causes of morbidity and mortality among youth in grades 9 through 12. The past 40 years represent a period of significant change in adolescent sexuality and the impending consequences (Meschke, 2000). Not only are adolescents engaging in sexual activity earlier (Kaiser Family Foundation [KFF], 2005), but they also have to contend with the deadly risk of human immunodeficiency virus (HIV) and acquired immune deficiency syndrome (AIDS). Sexual behavior is deemed risky as early sex in the teen years is associated with consequences such as increased likelihood of having unwanted or involuntary sex (Moore, Manlove, Glei, & Morrison, 1998), engaging multiple sex partners, (Smith, 1997), acquiring an STI, and having a teenage birth (Santelli et al., 1998).

As defined by Eaton et al. (2006) upon the administration of the Youth Risk Behavior Survey 2005 (YBRS), adolescents that are sexually active are those that have reported having had sexual intercourse in the past 3 months preceding the survey inquiry. Within the last decade, the number of high school students admitting to ever having sexual intercourse has declined (Eaton et al.). The percentage of those reporting sexual activity within the past 3 months has fluctuated minimally since 1991, ranging from 33% to 38%. As of 2005, 34% of high school students reported being sexually active with at least one person (Eaton et al.). Gender, race or ethnicity, and maturational age mediate these trends.

Ever Had Sexual Intercourse or Had First Sexual Intercourse before Age 13

Among the nation's high school students, 47.8% reported having had sexual intercourse (CDC, 2008). This incidence was higher in Black and Hispanic adolescents. Black males reported the highest percentage of ever having sexual intercourse at 72.6%, whereas their Black females report 60.9% (CDC). White male and female students reported the lowest percentages at 43.6% and 43.7%, respectively (CDC). Additionally, as grade level increased, so did the likelihood that of a student reporting having had sex. For example, 32.8% of 9th grade students reported ever having had sex versus 64.6% of 12th grade students (CDC, 2008). This increase was incremental for both sexes across both 10th and 11th gradesl (CDC; Eaton et al., 2006). Approximately 7.1% of the nation's high school students have had sex by the age of 13 (CDC). Male students were more likely than female students to report this aspect of sex behavior (CDC; Eaton et al.).

Currently Sexually Active and Condom Use

Of the 35.0% of U.S. high school students that are currently sexually active, many are male (48.7%) and female (43.5%) Blacks (CDC, 2008). However, roughly one-third of their Hispanic and White counterparts are also sexually active. As grade level increases, so does the likelihood of an adolescent being sexually active (CDC). As of 2007, 20.1% of 9th grade students were sexually active compared to 52.6% of 12th grade students. Among these sexually active students, 61.5% reported condom use during their last sexual intercourse, up from 54% in 1995 (CDC; Eaton et al, 2006). In addition, 67.3% of Black students used condoms at last intercourse compared to 59.7% of White students and 57.7% of Hispanic students (CDC). As public health officials attempt to

assert preventative measures in the adolescent population, attention to these statistics will prove valuable.

Health- Related Outcomes of Early Adolescent Sexual Activity

Sexual activity in teenagers is linked to various health and social concerns (Rector, 2002). Early sexual initiation parallels an increased likelihood of multiple partners, reduced chance of finishing high school, and an increased risk of contracting a sexually transmitted infection [STI] (O'Donnell et al., 2003; Sather & Zinn, 2002). Adolescents who become sexually active at earlier ages endure a greater time period during which they may contract an STI. Although STI rates among the total population have declined, the decline among the adolescent population has not been as great (Meschke, Bartholomae & Zentall, 2000). Every year, almost 20 million new STI cases are diagnosed, with half of those cases among those aged 15 to 24 (Weinstock, Berman & Cates, 2004). This link may exist because adolescents who engage in sex at younger ages are more prone to have unprotected sex and sex with multiple partners (O'Donnell et al., 2003).

Perhaps the most important outcomes of unprotected sex is adolescent pregnancy. From 1990 to 2002, the pregnancy rate for women aged 15-17 decreased 42% (Ventura et al., 2006). Despite this trend, approximately 750,000 women aged 15-19 become pregnant annually (Guttmacher Institute, 2006). Minority females are disproportionately affected. The Black and Hispanic adolescent pregnancy rates are 134 and 131 per 1,000 respectively, representing rates roughly three times that of their White counterparts

whose rate is 48 per 1,000 (Guttmacher Institute). The majority of adolescent pregnancies occur in those aged 18 and 19 (Guttmacher Institute).

When adolescents become pregnant and give birth, there are consequences for both mother and child. Physically, pregnant patients younger than 17 have a higher risk of medical complications (Klein, 2005). When compared to adults, adolescents are twice as likely to give birth to low birth weight infants. In addition, the neonatal mortality rate is three times higher for adolescents than for adult women, as 14% end in miscarriage or stillbirth (Klein). Furthermore, adolescent pregnancy is related to premature birth, pregnancy induced anemia, and hypertension (Klein).

The direct prospect for future endeavors becomes more difficult for an adolescent giving birth, as young age may deem her less capable to deal with the emotional, psychosocial and financial responsibilities of early childbearing. Adolescent pregnancy is related to psychosocial problems such as persistent poverty, separation from the child's father, and repeat pregnancy (Child Trends, 2002; Klein, 2005). These problems are exacerbated by financial strain. Generally speaking, adolescent mothers are likely to be less prepared for the financial responsibilities associated with early childbearing. Adolescent mothers are less likely to complete high school, which inevitably limits their future earnings and ability to be self-sufficient (CDC, 2008; Child Trends). The magnitude of this problem is felt economically. Adolescent pregnancy costs the U.S. at least $9 billion annually (Hoffman, 2006). The federal government spends approximately $40 billion to help families that begin as a result of teenage births (Flinn & Hauser,

1998). These costs are typically split across welfare subsidies and healthcare through Medicaid.

Children born to teens face a host of disabling factors as well. These children are more likely to incur physical and psychosocial health problems like developmental delays, behavior disorders, and depression (Klein, 2005). This is due in part to less stimulating home environments and inadequate parenting experienced by these children (Carnegie Task Force, 1994; Moore, Morrison, & Greene, 1997). These children also struggle academically and are more likely to experience teen pregnancy themselves (George & Lee, 1997; Levine, Pollack & Comfort, 2001).

With the implementation of the Healthy People 2010 agenda, the U.S. set the goal to reduce the adolescent pregnancy rate to 43 per 1000 females aged 15 to 17 for that goal year (CDC, 2008). Although current statistics note declines in adolescent pregnancy rates, health officials have not minimized the importance of addressing this health problem. The SEM (McLeroy et al., 1988) presents one path toward consideration and identification of the mitigating factors associated with adolescent pregnancy. Demystifying the role of these factors could create a context by which at-risk adolescent populations may be studied.

Social Ecological Model

Proposed by McLeroy et al. (1988), the SEM is a conceptual framework by which health behaviorists study patterned behavior outcomes. The behavior is viewed through five levels of analysis: intrapersonal, interpersonal, institutional, community, and public policy. Each level is both independent and interdependent upon the others. Specifically,

the direction of causality is not only that each level affects a behavior but that levels interact with one another while affecting a behavior (McLeroy et al.). McLeroy and colleagues presented the model as a framework for systems analysis and a health promotion and program design mechanism. Figure 1 provides a diagrammed representation of this model.

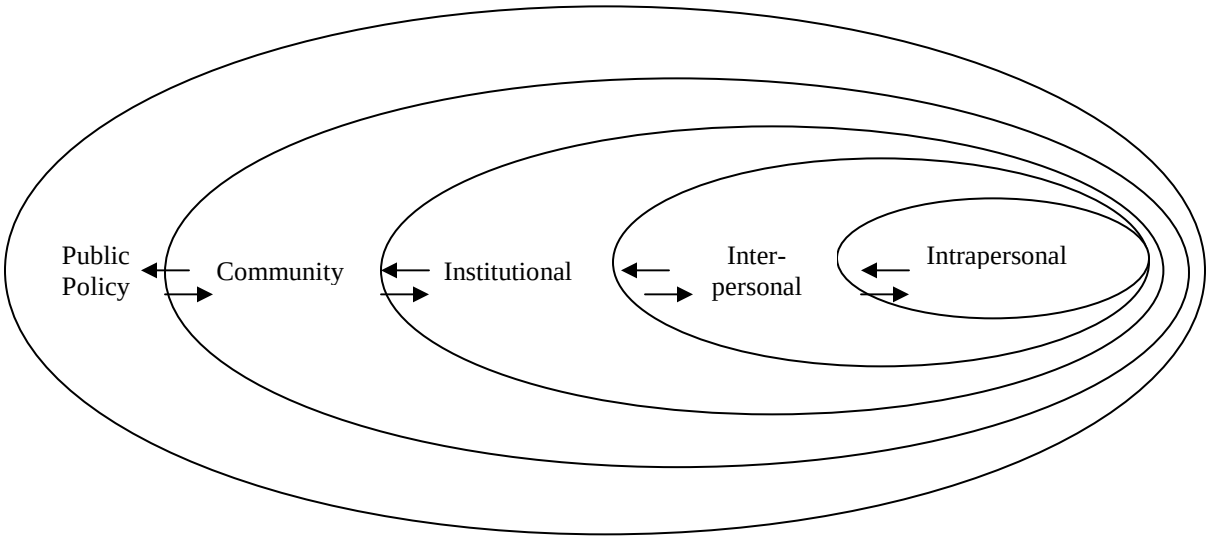


Figure 1. Diagrammed adaptation of the social ecological model. The model conceptualizes five levels of influence with human health-related behavior. Interpreted from "An Ecological Perspective on Health Promotion Programs" by K. McLeroy. D. Bibeau, A. Steckler, & K. Glanz, 1988, *Health Education and Behavior*, *15*, p.351-377.

The analysis of any factors related to the individual characterizes the intrapersonal level (McLeroy et al., 1988). This may include knowledge, self-concept, skills, or behavior. Many health-related interventions attempt to address these individual constructs. A strong emphasis on individual constructs is contingent upon the traditional assumption that the accomplishment of behavioral changes is an individualized event, as opposed to being contingent on social factors (McLeroy et al.).

Intrapersonal processes are described as those relationships with friends, family, or other acquaintances that may influence health behaviors. Since social relationships are a large aspect of a person's social identity, they provide insight toward the resources that could mediate heath behavior (McLeroy et al., 1988). In ecological systems thinking, interventions target intrapersonal influences with the goal of changing the nature of existing relationships. Social norms and influence become the proximal targets facilitating change in individuals (McLeroy et al.).

Examining organizations as influences in health behavior is important in determining how an individual's interaction with a group or specific setting impacts their health behavior. Organizational settings such as schools and work are influential on the health and health behavior of individuals (McLeroy et al., 1988). For example, the introduction of high tech instruments in the workplace may increase productivity but may decrease workplace physical activity. Organizations can also have positive effects on a person's health. Memberships in neighborhood groups, such as churches or support groups, can improve the way a person copes with physical ailments, mental distress, or help facilitate cessation of a health-compromising behavior like smoking (McLeroy et al.). The presence of organizational characteristics such as incentives, rules changes, or management support is important in behavior changes (Abrams & Follick, as cited in McLeroy et al.).

In conceptualizing community, McLeroy et al. (1988) determined three aspects were most important: (a) mediating structures, (b) relationships among organizations and groups, and (c) the geographical and political terms that define the population (power

structures). As a mediating structure, the community is made up of family, churches, informal social networks, and neighborhoods, all of which are important aspects of one's social identity. These networks serve to help shape a person's individual beliefs and attitudes and thus shape a variety of health behaviors (McLeroy et al.). Exploration of a community's mediating structures is to discover how these social ties interact between the individual and the larger social environment (Berger & Neuhaus, as cited in McLeroy et al.).

The study of community as a series of relationships among groups or organizations often refers to those providing health related services. McLeroy et al. (1988) discussed the importance of cooperation and the pooling of resources to facilitate strong health promotion communities. This is especially important in areas where resources may be limited, such as rural communities. As it relates to health promotion, the community may also be viewed as a power structure. Subsequently, the investigation of power structures in cities and states play a role in the priority of health- related issues. This includes, funding, staffing, and programming. McLeroy et al. reported that those with the most severe health problems in a community are often those with the least access to community power resources. Typically, this includes the poor, uneducated, and unemployed. These groups are labeled as hard to reach or marginal and are often left out of the process of program development. As a result, health issues become perpetual and go unaddressed by the power structure and those experiencing the ailment (McLeroy et al.). Therefore, community power structures are very important when evaluating how to best impact health behaviors.

Finally, the SEM analyzes public policy. Public policy includes any laws or procedures affecting the health of the population (McLeroy et al., 1988). An example of this is prohibiting smoking in public places. Policy also has the potential to affect access to health promotion resources. For example, changes in eligibility criteria for certain government support health resources can dramatically change the number of individuals eligible for such programs. Increasing public awareness about policy issues is of equal importance in the public policy sector McLeroy et al. referred to this as public advocacy and maintained that it should include citizen participation in the policy making process.

The SEM draws upon Bronfenbrenner's (1979) ecological perspective of human behavior. Bronfenbrenner's model asserted that behavior both affects and is affected by multiple influences. The identification of these influences provided a sense of context, converging both naturalistic and experimental manners of observation (Bronfenbrenner). Bronfenbrenner proposed four levels to this ecology: micro-, meso-, exo-, and macro-systems. Sequentially, interpersonal relations (micro-), the influence of multiple interactive settings (meso-), external settings containing the individual (exo-), and higher order context or culture (macro-) come together to describe the human developmental process and later behaviors. Assumptions of this model include: (a) human development occurs as the environment influences the individual and (b) the environment and developmental processes are connected by both the immediate setting and the larger surroundings (Bronfenbrenner, p. 22-27). Each of the aforementioned systems is contained within the next sequentially and combine together to form the ecological environment (Bronfenbrenner).

McLeroy et al. (1988) extended Bronfenbrenner's (1979) model, a traditionally psychological perspective, by incorporating a health science outlook. McLeroy et al. identified the need to refine the processes of health promotion and program development. Accordingly, the SEM was developed in an attempt to move away from the paradigm that emphasized individual choices in health behaviors and incorporated the ideal of social causation. When the social context of health behaviors is minimized, the ability of public health officials to reach certain groups in any society becomes limited (McLeroy et al.). Social ecological assessment requires the consideration of the social environment and views behavior in patterns as the outcome to be studied. Therefore, patterned behavior within a health context is better viewed though a systems model that assumes the mutual influence and reciprocity of multiple level factors. The result of any investigation is a deeper understanding of "some of the processes operating at each of these levels of analysis" (McLeroy et al., p. 355).

The strength of the SEM is its ability to expose both the individual and contextual factors and their interrelationships (McLauren & Hawe, 2005). The SEM conceptualizes these sets of factors as systems. Examination of these systems (e.g., intrapersonal and community) and the individuals living within them, their behaviors, and other attributes provides a more complex method for the study of health problems for public health purposes. Researchers acknowledge the value of expanding the basic linear methods of discussing causality and uncovering more intricate methods for examination (Koopman & Longini, 1994). As evidence increases that residential location and the characteristics of community affect the status of health, the necessity for ecological thinking is

strengthened (Diez-Roux, 2001). Themes consistent with ecological thinking include interdependence and mutual interaction. The ecological study of health requires researchers to observe the themes of interaction and interdependence in their analyses while accepting that relational patterns may exist (Kickbusch, 1989).

Although this inquiry will utilize the McLeroy et al.'s (1988) conceptualization of an ecological system, it is important to note the use of a variety of social ecological models to explore various health behaviors (Corcoran, 2001; Dahlburg & Krug, 2002). Elder et al. (2006) argued that each research inquiry mandates a specified design and use of the ecological model because of what is described as challenges towards use. Elder et al. noted that the manner of levels and variables presented in ecological models do not provide "specific guidance on which variables within each domain might be most important for the topic at hand" (p. 156). Additionally, policy and environmental contingencies that are influential in ecological systems are often specific to certain health behaviors. Therefore, custom-made ecological systems may be more functional because of the increased relevance to the population being studied.

Limitations of the SEM will depend on study design. Carrying out analyses of health behavior within the context of social or environmental influence can be complex. Fully understanding confounding variables may be difficult. However, variability is a concern with any study in the health behavior sciences. The extent to which each level of the model is used will limit the amount of information derived from that level of the system. This can be both productive and limiting. Smaller amounts of information may help build a data set about specific populations, social influences and corresponding

behaviors. Larger amounts of information gathered from a full evaluation at all levels will provide a general snapshot of the status of the population in question. The researcher must proactively assess the goal of the design and determine which methodological route is most sufficient (K. McLeroy, personal communication, February 16, 2008).

Although the weaknesses of the ecological model require attentiveness to each variable described and the action and interaction of the variables on each level identified, ecological methods give way to a systems manner of thinking that is necessary in health promotion. Ecological thinking is best used to frame individual issues under discussion. Although it seems imperative to address the multiple issues on each level that may be of importance to the behavior being studied, value is not lost in specificity. This is to say that to focus on one or two systems levels and their variables do not necessarily render an analysis incomplete. These levels represent the area of reference in which one can possibly discuss causality (K. McLeroy, personal communication, February 16, 2008). The present study engaged this ecological systems process.

Ecological Models and Adolescent Pregnancy

The purposefulness of the ecological model relates to its fluidity in interrelating five levels of influence or context for any given health behavior. Accordingly, this model has been used to explore a variety of health issues including (but not limited to) physical activity (Brownson et al., 2005; Elder et al., 2006), workplace wellness (Plotnikoff, Prodaniuk, Fein, & Milton, 2005), individual health behavior management (Cooper & Guthrie, 2007; Fisher et al., 2005; Thurston & Vissandjee, 2005), and sexually transmitted disease or HIV (Bull & Schlay, 2005; Diclemente, Salaza, & Crosby, 2007).

The study of adolescent pregnancy using an ecological framework has taken two paths, including the exploration of antecedents or contingent factors associated with the incidence and the discussion of relevant health promotion tasks and potential projects.

Bull and Shlay (2005) used the ecological model to explore what intervening factors may influence “dual protection” or behaviors preventing pregnancy and sexually transmitted disease. In a qualitative study examining 48 participants aged 13 and older from a clinical setting, a series of environmental, interpersonal, and individual influences (barriers) on dual protection were exposed. Bull and Shlay found that poor educational levels, poverty, poor communication about sex among family and partners, and previous experience with STD and unintended pregnancy partnered as barriers toward dual protection. They used ecological levels to discuss the relevance of these exposed factors, stating that not only should clinicians make condoms available and accessible while encouraging women to take responsibility for this aspect of sexual activity, but they should also develop prevention programs to boost self-esteem and promote early education targeting younger adolescents.

Corcoran, Franklin, and Bennett (2000) used the ecological model to discover factors predicting pregnancy and parenting status in teenagers. One hundred five male and female participants were recruited and a series of surveys assessed variables such as economic status, family structure, and personal and social functioning. The analysis revealed that income, race, poor family communication, problems with school, maturational age, and overall stress levels were predicted pregnancy risk. Langille, Flowerdew, and Andreou (2004) echoed the need to review socioeconomic factors and

family interactions within adolescent populations as predictors of what they term the cumulative probability of pregnancy. Additionally, they observed that community norms and a contextual analysis of communities individually is a significant area of need toward intervention efforts.

Raneri and Wiemann (2007) used the social ecological model to assess repeat pregnancy risk factors among a group of parenting adolescents. Evaluation over a 4-year period revealed that 42% of the adolescent mothers experienced a second pregnancy. Factors related to the second pregnancy included individual plans to conceive a second child (individual level predictor), lack of school attendance postpartum, and having friends who were adolescent parents (peer or community level predictor). Dogan-Ates and Carrion-Basham (2007) noted significant group differences in protective factors between pregnant or parenting and nonpregnant or nonparenting Latina adolescents. They found nonpregnant teens to have significant protective factors relative to individual characteristics (higher grades and career aspirations) and family or community characteristics (greater participation in extracurricular activities and religious services).

Merrick (1995) used ecological systems thinking to conceptualize adolescent pregnancy as a career choice among Black adolescent females of low socioeconomic status. Merrick argued that the pursuit of pregnancy by some adolescents essentially represents one's life work. Merrick also provided evidence at each system level illustrating the variables (or risk factors) associated with this choice. Of particular interest was the characterization of the neighborhood in which these adolescents lived. Neighborhoods were described as having limited adult work examples, negative

employment outlook, poor perceptions of higher education attainment, and higher unemployment. The combination of these factors represented a diminished perception of earning potential and the absence of other career aspirations (Merrick).

Corcoran (1999) presented a literature review submitting several adolescent pregnancy studies within an ecological framework for the purpose of directing policy and service delivery mechanisms. The analysis revealed consistent factor-related themes of socioeconomic status, race, education levels, family structure, and self-esteem. Corcoran noted that these main themes emerged using a variety of evaluation methods. Ecological systems are highly functional when preparing policy and programming-related commentary (McLeroy et al., 1988).

The SEM method of analysis provides data that is highly specific yet contextual. As the importance of context is continually realized in public health, researchers must commit to such evaluations. The SEM, as used in this study, provided relevance to the individual and community related factors of adolescent pregnancy in a rural setting and helped illuminate meaning in the interaction of these ecological levels toward improved health promotion. The forthcoming section describes several antecedents related to adolescent pregnancy including characteristics from the intrapersonal and community levels.

Antecedents of Pregnancy

Data describing antecedents, or any factor that may increase or decrease the chances of becoming pregnant, are of key importance because the data help guide health promotion programming. In forming inquiries about antecedents, it is important to

recognize that few antecedents are very highly related to sexual behavior (Kirby, 2002). Given the large number of antecedents identified as associated with pregnancy, it is only fair to note that these relationships are weak or, at best moderately strong. Therefore, it is more productive to explore these factors and their interrelationships in terms of proximal and distal relevance (Kirby). Distal factors refer to issues of the environment including, but not limited to, community characteristics, family characteristics, and faith communities. Proximal characteristics include individual issues such as knowledge, perceived self-efficacy, and attitudes (Kirby & Lepore, 2007).

Kirby and Lepore (2007) proposed a causal structure by which the relationship between distal and proximal factors may be observed. These factors reside on a continuum and implicate relationships with pregnancy incidence. Distal factors established within an environment can systematically affect the development or relevance of proximal factors. These factors are established through intrapersonal constructs (e.g. knowledge or values). For example, family characteristics such as parental attitudes about sex and contraception (distal) may have an effect on a youth's values towards contraception (proximal) and their subsequent use during intercourse. Kirby and Lepore hypothesized that the emerging interrelationships between these antecedents may be more important than the single nature of each factor alone.

As public health officials continue to work to determine under which conditions adolescent pregnancies occur, examining contextual factors contributing to these incidences becomes imperative. The efforts to reduce adolescent pregnancy may lie in the consideration of antecedents to this behavioral outcome (Kirby, 2002). Studying these

antecedents is imperative for two reasons. First, knowing the most critical antecedents could lead to the development of more effective pregnancy prevention programs. To maximize the impact, interventions must target antecedents with the greatest causal effect and the greatest potential for change through intervention (Kirby). Second, the study of antecedents eases predictions of those at highest risk for pregnancy.

In consideration of the SEM, antecedents relative to the intrapersonal and community levels will be discussed in this review. Behavior change models in the social sciences provide the framework to study intrapersonal characteristics relative to health. The purposefulness in studying intrapersonal characteristics is the potential for individual change (McLeroy et al., 1988). In this inquiry, sexual health knowledge, sex-related attitudes, and self-esteem were examined as intrapersonal constructs.

Knowledge

Sexual health knowledge is a characteristic that has the potential to vary greatly among the adolescent population. This is because of differing educational approaches about sexual activity and frequencies of education. Within the past 10 years, sex education efforts have been bolstered in an attempt to improve and sustain the sexual health knowledge of adolescents in schools (Zanis, 2005). There is debate regarding the most effective manner of school-based education about sexual activity for adolescents. In the past few years, abstinence-themed curricula, also termed abstinence until marriage (AUM), has increased in popularity and use (Zanis). AUM is defined as educational programming that seeks to teach the multi-level health gains ultimately realized by abstaining from sexual activity (U.S. Department of Health and Human Services

[USDHHS], 2006). Many school systems have chosen to use a classroom-based abstinence curriculum to address sex education due in large part to increased funding from the federal government to school systems that teach abstinence (Thomas, 2000). In recent years, Congress allotted $50 billion for teaching of these programs.

Advocates of Comprehensive Sex Education (CSE) question the utility of abstinence programs. CSE is described as programming that presents an abstinence message but within the context of other behavioral alternatives, namely contraceptive use. In 2001, then-Surgeon General David Satcher voiced his concern in *Call to Action to Promote Sexual Health and Responsible Sexual Behavior* (USDHHS, 2001). In the report, Satcher urged communities to take responsibility by engaging national dialogue on sexuality education. Of specific emphasis was the recommendation to support CSE. Satcher feared that teens taking part in abstinence-only programs would not be taught the usefulness of contraceptives and therefore would be at severe risk for contracting an STI and becoming pregnant (USDHHS).

Further, some health educators argue that in advocating abstinence-only programs, the focus is inherently on virginity or the sexually uninitiated. The subsequent dialogue experienced in an abstinence-only class could potentially ignore or alienate the sexually experienced (Lamstein & Haffner, 1998, as cited in Borawski et al., 2005). With almost 50% of U.S. teens reporting being sexually active (Eaton et al., 2006), there is increased concern for these students' wellbeing and the overall functionality of sex education in the U.S.

The result of these debates is a variety of sex education interventions. Most, if not all, of these programs emphasize improving sexual health knowledge (Carter & Spear, 2002). Although knowledge alone may not sustain a behavior change and prevent a pregnancy, it is an important factor in the support of related aspects and associated improvements in sexual risk behavior (Lamstein & Haffner, 1998, as cited in Borawski, et al., 2005). Subsequently, most interventions targeting adolescents will not only focus on knowledge improvements but also on incremental changes in aspects such as sexual behavior intentions, (Main et al., 1994), intentions to use contraceptives (Koniak-Griffin et al., 2003; Larsson, Eirenius, Westerling, & Tyden, 2006), and occurrence of first intercourse (Hubbard, 1998; Kirby et al., 1997).

Sexual health knowledge could refer to any aspect of sex, sexuality, or related issues and varies significantly between interventions. For example, Borawski et al. (2005) defined and assessed knowledge in terms of abstinence beliefs, whereas Koniak-Griffin et al. (2003) evaluated AIDS-related knowledge. The use of simple questionnaires is most common with knowledge assessments. In most cases, knowledge improvements are marked at postintervention follow-up periods of 6 months or less (Agha, 2002; Coyle et al., 2004; Yoo et al., 2002). In longer follow-up periods (more than 6 months postintervention), knowledge improvements are modestly sustained and often pale in comparison to earlier follow ups (Kirby et al., 1997; Koniak-Griffin et al.; Sather & Zinn, 2002).

Knowledge and pregnancy incidence. Knowledge attributes and their relationship to pregnancy incidence have not been directly studied. However, research has sought to

expose the impact that knowledge might have on the sexual behaviors leading to pregnancy (Carter & Spear, 2002). Poor knowledge and its association with pregnancy is a difficult relationship to substantiate because of a large number of mitigating factors associated with this behavioral outcome (Kirby, 2007). Increasing knowledge through a variety of sex education curricula is a major approach in many adolescent pregnancy prevention programs (Carter & Spear; Quinn, 1986).

It is clear that knowledge alone is not enough to impact the intentions of teens in sexual activity (Bazargan & West, 2006). Although poor sexual health knowledge is associated with deleterious sexual behaviors in sexually active teens (Suzuki, Motohashi, & Kaneko, 2006; Wang, Wang, & Hsu, 2003), neither sex education nor increased levels of sexual health knowledge are significant predictors of sexual behavior intentions. As adolescents age, the likelihood that sexual health knowledge is more substantial increases, but this does not translate into high rates of contraceptive use or declined sexual activity (Carter & Spear, 2002; Chedraui et al., 2007). Jaccard, Dodge, and Guilamo-Ramos (2005) observed that higher levels of perceived knowledge about accurate birth control use are associated with higher probability of pregnancy occurrence. Perceived knowledge is a critical factor when students are not receiving consistent, biologically accurate sex education. In situations where adolescents do not receive sex education interventions, facts are often confused with myths as adolescents are left to determine the truth on their own, often through experimentation. The result can be devastating, and the typical outcome is an unplanned adolescent pregnancy (Henshaw, 1998).

In the absence of appropriate knowledge regarding how to avoid pregnancy (through formal educational interventions), some teens are able to avoid pregnancy because they complied with decisions made by their parents or partners (Martyn, Hutchinson, & Martin, 2001). This is an important concept because it shows the significance of how knowledge is supported through secondary references or skills. Conventional sex education programming focuses on increasing knowledge and developing associated skills. For example, family planning programs often focus on contraceptive knowledge and on building skills for successful use of these modalities (Franklin & Cocoran, 2000).

Attitude

Attitude is a psychosocial aspect that can act in partnership with knowledge to influence behavior. Fishbein and Ajzen (1975) defined attitude as "a person's location on a bipolar evaluative or affective dimension with respect to some object, action, or event" (p. 216). Fishbein and Ajzen argued that as a person forms beliefs about an object or situation, attitudes toward that object or situation are immediately and automatically acquired. Every belief forges a connection between an object and an attribute. This connection maintains an informational basis for the forming of attitudes. Subsequently, as persons process this information about the object, they also evaluate it (Fishbein & Ajzen). This also affirms the notion that a person's attitude is formed by a small number of beliefs (Miller, 1956, as cited in Fishbein & Ajzen).

Attitude study in health behavior research is often associated with both the theory of reasoned action and theory of planned behavior. These theories, which work in

tandem, maintain that behavioral intention is the strongest determinant of behavior (Glanz & Rimer, 2005). Behavioral intention is influenced by subjective norms, perceived behavioral control, and attitudes toward the behavior (Ajzen & Driver, 1991). Attitude is considered to be a personal evaluation of the behavior typically measured in terms of scaling (e.g. good, neutral, or bad). In health behavior research, attitude is the basis of inquiry across many issues of concern in the adolescent population, including drug or alcohol use, physical activity participation, and nutrition (Henry & Slater, 2007; Sollerhed, Ejlertsson, & Apitzsch, 2005). These assessments include descriptions of attitudes of both adolescents and the adults in their lives that might interact with the studied behavioral outcome.

Relationships between attitude and sexual behaviors. Adolescent's attitudes toward sex behaviors have been examined in several ways. One of the most common methods includes examining the impact of a sex education intervention on various attitudes. Denny and Young (2006) reviewed the multiple effects of the *Sex Can Wait* curriculum on pre-adolescent and adolescent attitudes toward abstinence In follow-up assessments immediately after the program's completion, high school students reported more positive attitudes toward abstinence. In a similar evaluation, Coyle et al. (2004) reviewed the effect of the *Draw the Line/Respect the Line* sex education program among middle school adolescents. Analyses revealed that the program only significantly affected boys' attitudes; they had more positive attitudes toward not having sex postintervention. A condom availability program implemented in a public school setting had no effect on students' attitudes toward sex and condom use (Schuster, Bell, Berry, & Kanouse, 1998).

Other evaluations of education programs revealed non-significant effects of attitudes on premarital sex (Sather & Zinn, 2002).

Peer, sibling and family influences on sex-related attitudes have been studied at length. Youth who have sexually experienced peers are more likely to have their first sexual intercourse within a given timeframe (Sieving et al., 2006). Also, youth are more likely to engage in sex if they felt they would gain their friends' respect. Similarly, adolescents who perceive that their friends favor postponing sex are more likely to do so than others (Carvajal et al., 1999). These notions are based on the power of the adolescent's perception of their peers' attitudes and behaviors toward sex and their own attitudes. Social contexts (Connolly, Furman, & Konarski, 2000) and circles of friends (Brown & Theobald, 1999) encouraging dating and romantic relationships may influence attitudes toward earlier sex.

Siblings are likely to be strong influences on behavior because of close living proximity and frequency of contact (Goetting, 1986). As a result, siblings often share similar perspectives and may depend on each other to provide context to various situations. Younger siblings may use their older siblings' sexual permissiveness in shaping their attitudes about sex (East & Shi, 1997). Accordingly, sibling and parents' discussions about safe sex have been shown to be predictive of better attitudes toward safer sex practices (Kowal & Blinn-Pike, 2004).

Attitude toward sex is an important point of reference for the study of adolescent pregnancy. Attitudes toward pregnancy prevention in adolescents are commonly affirmed (Carter & Spear, 2002); however, these sentiments to not always translate into protective

action. For such instances, exposure of the cause of the risk behavior leading to pregnancy becomes extremely important. Merrick (1995) proposed that in some cases, adolescent females choose to become pregnant as a declaration of impending adult status. The young woman views becoming a parent as a career choice. Merrick declared that this "choice" is actually viewed as a normative life path supported by complex social, cultural, and environmental influences. Because of messages received from the external environment, the individual develops attitudes and normative beliefs that lead to the choice to bear a child as a statement of identity (Merrick). In challenged environments (or communities), identity formation has multiple influences, and the individual is one part. Therefore, factors such as community norms or interactions with parents in similar roles influence attitudes toward becoming pregnant (Carter & Spear, 2002).

Self-Esteem

Self-esteem is a psychosocial aspect that relates to the regard with which individuals hold themselves (Rosenberg, 1989). The formation of self-esteem in adolescence is influenced by forming identity and developing reasoning (Modrcin-Talbott et al., 1998). Self-esteem relates to self-approval or self-disapproval and the measure of an individual's personal reflection on their significance and worthiness. These judgments may be related to previous learning experiences (Rosenberg). High self-esteem is believed to enhance resilience and motivate behavior (Gecas, 1982; Rosenberg). Resiliency theory hypothesizes that adolescents living in high risk social environments may be protected from adopting behaviors detrimental to health by having

high self-esteem (Garmezy, 1991). Specifically, self-esteem may drive their desire to overcome negative circumstances.

Self-esteem is thought to be influenced by developmental tasks specific to adolescence. For example, self-esteem may be influenced by an increased understanding of socioeconomic status, school performance comparisons, and the opinions of significant others (Rosenberg, 1989). Therefore, as adolescents become more aware of their world, they perceive themselves differently. Also, self-esteem is thought to be linked to other psychosocial constructs and skills like self-efficacy, negotiation, and communication (Brathwaite & Thomas, 2001). As an index of mental health, self-esteem is thought to have a large bearing on health behavior, especially in adolescent populations (Rosenberg).

Relationship between self-esteem and sexual behaviors. The link between self-esteem and theoretical constructs related to overall health implies the need to review it as an influence of sexual health behavior. Self-esteem and its relationship to health has been evaluated extensively in adolescent populations (Braithwaite & Thomas, 2001; Brendgen, Wanner, &Vitaro, 2007; Strauss, 2000). For example, low self-esteem has been linked to suicide risk, alcohol, marijuana, and cigarette use (Resnick, et al., 1997). These findings do not confirm that high self-esteem is the contingent factor in the choice of healthful behaviors in adolescents. Resnick et al. also found that self-esteem is not associated with age of first intercourse, violence incidents, or pregnancy risk. This discrepancy indicates that the assessment of risk through self-esteem is not

one-dimensional, as risk encompasses many aspects (Longmore, Manning, Giordana, & Rudolph, 2004). Therefore, positive self-esteem may not only have beneficial effects by itself; it may also be protective against risk when combined with other positive characteristics (Longmore et al.).

Consequently, the effect of self-esteem on risk behaviors related to sex is studied both as a stand alone variable and in context with other aspects of influence. Spencer, Zimet, Aalsma, and Orr (2002) examined the role of self-esteem in predicting early coitus in an adolescent population. After assessing 7th grade students over a 2-year period, they found that self-esteem did predict coitus; boys with high self-esteem were more likely to initiate intercourse whereas girls with high self-esteem were more likely to remain virgins. Orr et al.'s (1989) cross-sectional study reported an inverse relationship between self-esteem and first intercourse in adolescent females. Somewhat contrary findings were reported by Salazar et al. (2005). They reported that girls with higher self-esteem were actually more efficacious about discussing sex, negotiating condom use, and held positive attitudes toward condom use. Bivariate analysis completed in this study also suggested that there was no connection between self-esteem and pregnancy incidence (Salazar et al.).

Robinson and Frank (1994) confirmed these findings, as they reported no significant correlation between self-esteem and coital status. Connelly (1998) and Slicker, Patton, and Fuller (2004) found that pregnancy status was not associated with self-esteem. These varying findings of the impact of self-esteem on sexual behavior and pregnancy affirm the uncertainty of the nature of influence of this construct on sexual

health behaviors. Slicker et al. noted that self-esteem may be an indirect mediator of behavior. As there is no one factor that can explain an adolescent's decision to become sexually active, it may be difficult to assert self-esteem as a mediating factor on the intrapersonal level.

Sexual health knowledge, sex-related attitudes, and self-esteem are important points of reference for the study of adolescent pregnancy incidence. As probable antecedents to pregnancy, each of these factors requires attention even as their relationships to pregnancy incidence are still being confirmed. Another aspect of behavioral influence, community characteristics, is made up of multiple antecedents (e.g., socioeconomic status, educational opportunities). The next section reviews the characteristics that make up community context and discusses their relevance in the development of opportunity structure.

Community Context

A community is more than the sum of its populations; a community is a social group that functions with behavioral norms and organized resources (Green & Ottoson, 1999). Community characteristics regulate the environment and subsequently the behavior of individuals. It is composed and defined by a dynamic set of physical, organizational, and socio-cultural factors. Community may be further described as a series of mediating structures that may include family, churches, informal social networks, or neighborhoods (McLeroy et al., 1988). As mediating structures, communities are an important influence on the development of norms and values and individuals' beliefs and attitudes that inherently impact health behaviors (McLeroy et al.).

Community has an intricate relationship with human behavior as it relates to health. It has been argued that the community is the basis of a social context or social background in which any number of health behaviors might take place (McLeroy et al., 1988). To examine social context is to peruse the "demographic, socioeconomic, macroeconomic, sociopolitical, and related features of an individual's environment" (Adimora & Schoenbach, 2005, p. 117). Attention to context in the examination of health behaviors is important, as context acknowledges the power of economic, demographic, and community attributes in the affirmation and normalization of various behaviors (Adimora & Schoenbach).

The power of social context on sexual health behavior among adolescents has been postulated regularly, but most arguments focus on micro-level determinants such as relationships with parents and peer influence (Hampton, Jeffery, McWatters & Smith, 2005; Upchurch et al., 1999). However, research also notes the importance of evaluating these influences within the context of macro-level structures such as neighborhoods or communities (Averett, Rees, & Argys, 2002; Baumer & South, 2001; Teitler & Weiss, 2000). Specifically, observation of community characteristics such as socioeconomic status, poverty levels, and opportunity structure are important due to their connection to the adoption of preventative health behaviors (O'Reilly & Piot, 1996).

Community Poverty

Poverty as a characteristic of socioeconomic status has been evaluated as an antecedent of adolescent pregnancy. Previous studies found that adolescents from more impoverished neighborhoods experience higher rates of pregnancy (Brewster, 1994,

Brewster, Bill & Grady, 1993; Cubbin et al., 2005; Hayward, Grady, & Billy, 1992; Kirby, Coyle, & Gould, 2001; Robbins, Kaplan, & Martin, 1985). These findings maintained that living in poor communities uniformly increases the risk of an adolescent pregnancy for all adolescent girls in the community. Therefore, growing up in a poor community may influence an adolescent's choice of early childbearing (Burton, 1990). The catalyst of this choice may be the manner of socialization that differs from those of more affluent neighborhoods. For example, those witnessing the value and rewards of higher education and delayed childbearing may be more likely to engage this action (Burton).

Wilson (1987, 1996) examined the effects of poverty on community and its subsequent relationship with sex behavior. Wilson argued that poverty concentrated in certain areas, when compounded by an evident level of segregation, leads to social isolation. Such isolation inadvertently creates and reinforces a set of attitudes and behavioral norms that are typically in dramatic contrast to the rest of society (Wilson, 1987). Wilson (1996) also contended that the converging pressures of poverty and joblessness result in short term male-female relationships. A male may seek sexual conquests to gain social status, whereas a female perceives early childbearing as a rite of passage to adulthood. Moreover, the notion of pregnancy may facilitate the hope of a more stable future through economic stability from government financial support (Anderson, 1990).

Community Opportunity Structure

Wilson's (1996) thought processes alluded to the power of socioeconomic conditions. As a product of socioeconomic conditions, opportunity structure illuminates both the possibilities and limitations in any community. Opportunity structures are devised of implements such as employment availabilities and educational options (Cubbin et al., 2005). The opportunity structure effect on adolescents and their decision making was considered by Hannerz (1969). Hannerz affirmed that children who grow up in impoverished neighborhoods have limited options or limited opportunities. Consequently, children experiencing these deprived conditions long term are more likely to perpetuate the norms associated with them (Hannerz). Thus, if the opportunity structure is inadequate, it may prevent poor individuals from escaping poverty and unintentionally reinforcing this condition.

Wilson's (1996) and Hannerz's (1969) arguments converge as they both maintained that behaviors are largely shaped by situations. Moreover, in some contexts, neighborhood economic factors and subsequent opportunity structures will account for normative beliefs and values aligned with certain behaviors. Consequently, adolescent pregnancy may be induced by the systemic effects of poverty on the neighborhood while a constrained opportunity structure (resulting from poverty) could support poor sexual health decisions (Cubbin et al., 2005). Opportunity structure as a construct of neighborhood context affecting sexual behaviors may be independently associated with sexual initiation (Cubbin et al.). Cubbin et al.'s findings were confounded by the fact that

the assessment of neighborhood context represented only a snapshot, not a longitudinal evaluation of historical and other aspects that contribute to this representation.

Perceptions of available options are derived from self-concept and other personal attributes influenced by social context (Merrick, 1995). Merrick used vocational psychology to discuss why adolescent females choose pregnancy. Merrick's study hypothesized the power of perceived community opportunity structure on human belief (e.g., attitudes). As Merrick implied, the sense of a diminished capability is a powerful determinant of behavior and in some cases sexual behavior. Perceived opportunity structure and its impact on pregnancy have not been evaluated an adolescent population

Rural Communities

Wilson (1996) maintained his argument within the relevance of an urban background. The particulars of rural life present similar challenges because there are dramatic pockets of poverty and limited availability or resources (NRHA, 2009). Rural communities are typically stereotyped as a farming culture (Johnson, 2006). However, the landscape of rural America is changing. Rural areas have recently experienced increases in life distress resulting from the dramatic decrease in the agricultural economy (Johnson, 2006). Rural areas are now developing diverse labor forces with emphasis on manufacturing economies. The stresses of change have resulted in increased medical problems, which include alcohol and drug abuse, depression in adolescents, and increases in suicide and child abuse (Johnson; NRHA; Pothier, 1991). As a result, public health officials are challenged in addressing these emerging issues, including managing the

provision of health services (Puskar et al., 2000). One of the health-related challenges is the increasing incidence of adolescent pregnancy.

Surprisingly, the gravity of social disadvantage has not increased or improved the development of policies relative to adolescent pregnancy in rural areas (Bennett et al., 1997). Many rural youth present an elevated sexual health risk profile (NRHA, 2008). The adolescent birth rate is higher in rural areas although there are no major differences in the rate of high risk sexual behaviors between rural and urban adolescents (Bennett et al.). The highest birthrate is among rural females aged 18-19 and is likely related to poverty levels (Bennett et al.). The lack of further information regarding rural adolescent pregnancy illustrates the necessity for research undertaking the scope and impact of adolescent pregnancy.

Community Impact on Health and Health Behaviors

North Carolina is a largely rural state (North Carolina Rural Economic Development Center, 2008). Data from the 2005 Youth Risk Behavior Survey revealed that 50.8% of North Carolina high school youth have had sexual intercourse (CDC, 2006a). That survey indicated 37% of those surveyed were sexually active, having had sex within the past 3 months. Of those that are sexually active, 37% did not use a condom during their last sexual intercourse. Survey results showed 17% of youth in North Carolina have had intercourse with more than 4 people (CDC, 2006a). North Carolina teens engage in sex with multiple partners at a higher rate than the national average (CDC, 2006b).

Adolescent pregnancy in North Carolina is a problem that spans across many counties. Although the adolescent birth rate in North Carolina is declining in a similar proportion to national rates (CDC, 2006b) pregnancy rates in some counties of North Carolina are exceptionally high. Vance County, located in central North Carolina on the Virginia border, has a population just under 44,000 and has the highest adolescent pregnancy rate in North Carolina with 113.7 pregnancies per 1,000 15-19 year olds (NCSCHS, 2008). This rate is met with strained economic and health systems in the community. The unemployment rate in Vance County is 14.4%, 4% higher than the state average. Statistics indicated that 28% of the county's children live in poverty and 80% are receiving free or reduced lunch assistance at school. Approximately 57% of the county's children are receiving Medicaid benefits (NCSCHS).

The economic and demographic setting of Vance County is worth investigating because of the emerging adolescent sexual health risks. There is a well-documented connection between place of residence (neighborhood or community) and individual health. The majority of studies focusing on neighborhood context evaluated socioeconomic structure and its effects on a variety of health outcomes (Haan, Kaplan, & Camacho, 1987; LeClere, Rogers, & Peters, 1998). In most cases, lower socioeconomic status is associated with issues of increased health risk. However, there has been little exploration about whether those living in poorer neighborhoods face greater health challenges because of their socioeconomic status or because there is something unhealthy about living in these areas (Ellen, Mijanovich, & Dillman, 2001).

The interaction of social, economic, organizational, and cultural forces makes causality difficult to ascertain. In at-risk populations it is critical to initiate and continue evaluations of individual factors to provide current data relative to health risk behavior. However, it may be most productive to carry out such inquiries while also considering the effect of area of residence (Ellen et al., 2001). The process of measuring relevant community characteristics overall is very difficult (Ellen et al.; Teitler & Weiss, 2000). However, if serious advances in public health programs are to occur, research must go beyond traditional measures describing conditions of deprivation. Simply assessing economic conditions and basic health outcomes is not sufficient to make conclusions. Research must commit to exploring how individuals sustain deleterious health conditions and behaviors in these environments.

Methods Review

This sequential mixed-method study was designed to create a contextual understanding of the social ecological factors associated with adolescent pregnancy. A quantitative method, specifically a structured survey, was used to determine sexual health knowledge, sex-related attitudes, and self-esteem of adolescents and evaluate the influence of the intrapersonal level of the SEM. In previous studies, when characteristics of the intrapersonal level were assessed, methods included semistructured interviews (Cowley, & Farley, 2001), surveys (Carter & Spear, 2002; Cocoran et al., 2000; Smith, 2004), and regression analyses on secondary longitudinal data (Brewster et al., 1993; Cubbin et al., 2005; Hayward, Grady, & Billy, 1992; Upchurch et al., 2000). Studies

engaging secondary analyses used data from state or national level longitudinal studies, including census reports.

Methods for qualitative designs vary and could include ethnography (Kelly, 1994), focus groups (Keigler et al., 2001), and interviews (Bull & Shlay, 2005, Montgomery, 2000, 2004). One mixed-method study employed both structured interviews (of matched pairs) and focus group interviews (Lipovsek et al., 2002). For the qualitative method, this study engaged qualitative focus group discussions. The overall goal for the use of a mixed-method design was to obtain demographic data and measures of intrapersonal characteristics while providing context with descriptive dialogue of community opportunity structure and relatable characteristics.

Summary

The literature is explicit in the connection of a variety of intrapersonal and community-related factors with pregnancy incidence in adolescent populations. Knowledge, attitudes, and self-esteem all interact with sexual behaviors, working to facilitate protective and perhaps deleterious actions. However, these relationships are inconclusive and require further analysis. Moreover, as the importance of considering the environment's impact on health behaviors becomes prominent in the social sciences, there is an inherent need to consider how place of residence interacts with intrapersonal factors that influence health-related decisions.

The SEM provides a framework for a systems-level conceptualization of the interaction of intrapersonal factors and community factors on adolescent pregnancy. The model allows one to better understand these factors in terms of proximal and distal

establishment. Characteristics of the community, like opportunity structure, are assumed to provide a backdrop and support conditions in which individual characteristics flourish (e.g., knowledge, attitudes, and self-esteem). The conceptualization of interdependence is critical when determining if individual choices and behaviors are relatable to social influences. Chapter 3 outlines the mixed-method analysis used to assess intrapersonal and community factors influencing pregnancy. A quantitative survey examined sexual health knowledge, sex-related attitudes, and self-esteem. A series of qualitative focus group discussions examined community opportunity structure and its interactions with the individual. These evaluations determined if interrelationships exist between intrapersonal factors, community factors, and individual health outcomes.

CHAPTER 3:

RESEARCH METHOD

Introduction

Adolescent pregnancy rates in Vance County, North Carolina are twice the state average. An evaluation and contextual analysis of social ecological factors could provide insight about this health issue. Intrapersonal and community-related constructs represent two levels of analysis available through the SEM. This study engaged a systems analysis of these two levels and their associated variables, seeking to identify pertinent factors at each level and to provide content relative to their influences on each other and on the subsequent incidence of pregnancy. A mixed-method approach was used and thus allowed triangulationof the survey data with focus group discussions that elucidated respondents' perceptions from a naturalist perspective (Creswell, 2003).

This chapter outlines the research design and provides details about the data collection and analysis processes. First, a brief summary of the adoption of the mixed-method paradigm in health sciences and justification for the use of this design in this study is presented. Second, descriptions of the participants, settings for the study, and particulars, such as sample size and eligibility criteria, are discussed. The third section provides information on specific data collection procedures for both the quantitative and qualitative phases. This chapter concludes with descriptions of the instruments and assessments used and the data analysis process.

Research Design

This study used a sequential, mixed-method design with equal emphasis on quantitative and qualitative methods. The data from a structured survey in the quantitative phase and the data from the qualitative focus group discussions were examined separately and then triangulated for interpretation. The goal was to describe the current status of the intrapersonal and community-related factors associated with adolescent pregnancy and to discover how they relate to each other as the SEM proposes. One of the strengths of this strategy is that the methods are designed to best serve the concepts in theoretical framework (Creswell, 2003).

Mixed-method research—"collecting and analyzing both quantitative and qualitative data in a single study" (Creswell, 2003, p. 210)—represents an emerging design that has attracted increasing attention (Gilbert, 2006). Historically, researchers initiated mixed-method research to discover ways to cross-validate results from the same research question. Campbell and Fiske (as cited in Morgan, 1998) created the multitrait-multimethod matrix to facilitate the process of converging and confirming results with differing methods. Initially, Campbell and Fiske used more than one quantitative method to measure a psychological trait (Tashakkori & Teddlie, 1998). This process, also called triangulation (Morgan, 1998; Tashakkorri & Teddlie), represented one of the first significant shifts away from traditional quantitative methods. Denzin (1970) also discussed and supported triangulation and proposed four different types: theory triangulation, investigator triangulation, data triangulation, and methodological triangulation. Methodological triangulation brought to the forefront the use of both

qualitative and quantitative processes within the same study. With acceptance of this technique within the social and behavioral sciences through the 1970s and 1980s, the term *mixed method* was coined (Tashakkori & Teddlie).

Although mixed-method research has been accepted within the past 40 years, it has not been widely used. Morgan (1998) noted that although the thought of seeking convergent findings is promising, researchers do not engage this method as often due to the potential for failed results or "nonconvergence." The process of collecting and analyzing data for the purpose of convergence is both time consuming and costly (Morgan). Therefore, as Morgan stated, "researchers and others working on applied problems cannot afford to put this much effort into finding the same thing twice" (p. 365).

Additionally, concern over the use of this method revolves around a conflict of paradigmatic thinking. Researchers committed to scientifically deductive quantitative thought substantiate their concerns by citing the philosophical impossibility of making a methodological connection for an inductive, more descriptive qualitative standard (Miller & Fredericks, 2006; Morse, 2005). These apprehensions are extended through speculations of how to develop methodological principals for mixed methods, who should be responsible for this development (Morse), how to reconcile the two paradigms in data presentation and analysis (Morgan, 1998), and how to validate this new paradigm shift that is essentially at its beginning stage (Miller & Fredericks).

Those in support of exploring mixed-method research assert that strict adherence to the core tenants of either the quantitative or qualitative paradigm is debatable (Johnson

& Onwuegbuzie, 2004). As Johnson and Onwuegbuzie maintained, purists must be challenged by those willing to exposing the philosophical weaknesses of each paradigm. For example, quantitative methods and data are noted for their objectivity. However, objectivity does not completely drive quantitative methods, as subjectivity intervenes when deciding, for example, what to study and how to develop research guidelines based on the researcher's idea of the construct (Johnson & Onwuegbuzie). On the other hand, qualitative researchers must manage heavy relativism that can often obstruct the expansion and use of standards in judging research quality (Guba, 1990; Johnson & Onwuegbuzie). These arguments show the natural tendencies of each paradigm to shift away from a purist state. For that reason, the merging of methods is not only feasible but may be a natural resolution to some of these issues (Miller & Fredericks, 2006).

Morgan (1998) also asserted that mixed-method research is about the complementary nature of two methods. Researchers have found it useful to employ mixed-method techniques based on the central concept that the combination of both quantitative and qualitative procedures provides a better understanding of research problems than either method by itself (Creswell, 2003). Others have argued that mixed-method techniques increase the impact and flexibility of research designs (Sandelowski, as cited in Gilbert, 2006). Greene, Caracelli, and Graham (as cited in Morgan) described the complementary nature of mixed-method research as "elaboration, enhancement, illustration, and clarification of results from one method with the results from the other method" (p. 365).

Mixed-method research is not to be confused with the merging of paradigms. It is however, a combination of methods with full consideration of both paradigms. Resolving concerns of a dichotomous thought process in mixed-method research requires acceptance of two major assumptions. First, epistemology and research methods are not synonymous (Gilbert, 2006; Johnson & Onwuegbuzie, 2004; Miller & Fredericks, 2006). This is a misconception in many discussions about mixed-method techniques (Gilbert, 2006). The term mixed method is not the same as mixed methodology, as methodology requires specific adherence to a paradigm worldview. Methodology is the "framework that relates to the entire process of research" (Creswell, 2003, p. 4). The methods are specific "techniques of data collection and analysis" (Creswell, p. 4). Methods and methodology merge to form a research design where the philosophical assumptions and specific methods meet (Creswell). Therefore, using a sequential mixed-method research design in this study involved carrying out both quantitative and qualitative methods within the context of the SEM.

The second assumption, choosing an appropriate mixed-method strategy, is advocated by Creswell (2003) as a critical step in research. Creswell maintained that researchers must scrutinize their data collection and analysis technique to choose an appropriate mixed-methods strategy. Creswell emphasized that when choosing a mixed-method strategy, researchers must consider factors such as the implementation sequence and priority given in data collection and analysis. Additionally, Morgan (1998) explained that the choice of a sound method can improve the chances of success when combining quantitative and qualitative methods. If researchers are to take full advantage of the

strengths of each method, the design has to be practical. This will allow for improved interpretation and use of the results in practice (Morgan).

The strategy chosen for this study can be described as sequential transformative. The transformative strategy uses a conceptual or theoretical framework to guide the study (Creswell, 2003). The purpose of choosing a transformative strategy is "employ the methods that will best serve the theoretical perspective" (Creswell, p. 216). The theoretical framework chosen provides flexibility for the researcher in that both the quantitative and qualitative components can carry equal importance (Creswell). The SEM assumes equal importance of each of its levels of influence (McLeroy et al., 1988). Therefore, both intrapersonal and community-related factors, as assessed by quantitative and qualitative methods respectively, were evaluated with equal attentiveness using this strategy. Figure 2 illuminates the researcher's interpretation of the sequential transformative design used in this study.

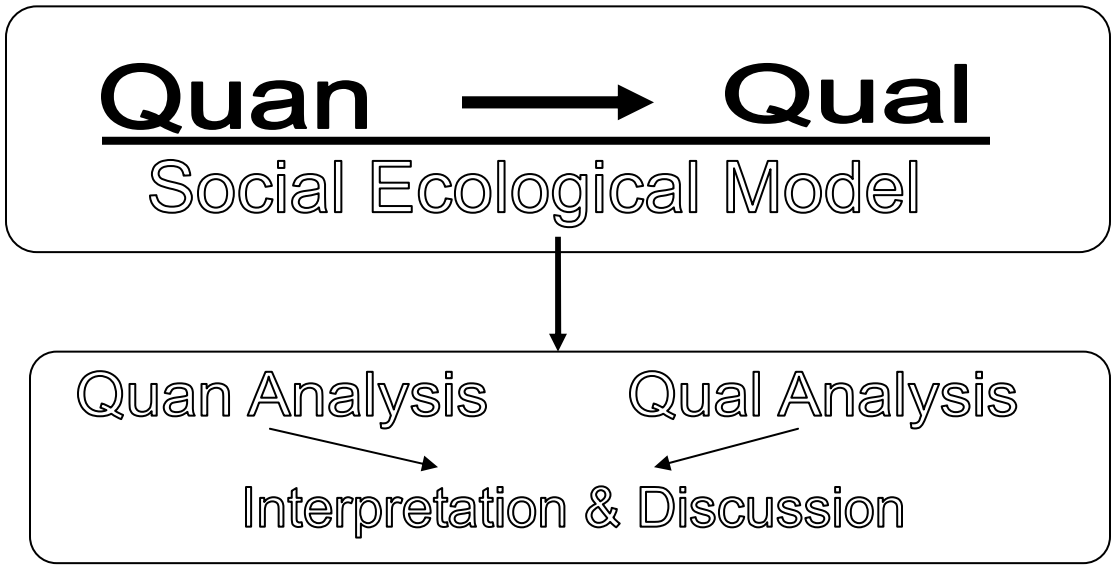


Figure 2. Diagram of the sequential transformative data collection and analysis strategy. Top platform describes sequence (quantitative then qualitative data collection); lower platform describes simultaneous analysis of both sets of data. Entire process is mediated by the social ecological model.

In this study, the quantitative portion was completed first. The quantitative method included the measurement of three intrapersonal constructs: sexual health knowledge, sex-related attitudes, and self-esteem. These constructs were measured by a survey composed of three existing assessments. The second phase of data collection included a series of qualitative focus group discussion sessions. Focus groups have the potential to yield rich qualitative data providing a descriptive content to research questions (Israel & Galindo-Gonzalez, 2006). Focus groups have been used in previous studies to evaluate various constructs related to adolescent sexual behavior and pregnancy (Kegler, Bird, Kyle-Moon, & Rodine, 2001; Montgomery, 2000, 2004).

The qualitative phase explored how the participants perceived their community, its corresponding opportunity structure, and its impact on adolescent pregnancy. Supporting constructs evaluated included acceptance of adolescent pregnancy, preparedness for life outside of community, support of adults, and support of school. The participants were also asked their opinions on the best methods for educating adolescents about pregnancy prevention. Overall, the value of mixed-method research is based on its ability to (a) provide comprehensive evidence relating to a research problem, (b) allow for the use of tools from both research traditions, and (c) provide the forum to answer questions that could not be answered by either method alone (Creswell, 2003).

Population and Sample

Study Setting

The study took place at a series of eight sites in Vance County, North Carolina. Vance County is located in north central North Carolina on the border of Virginia. It is one of 85 rural counties in North Carolina with a population of only 43,810 (U.S. Census Bureau, 2006) contained within its 253 square miles. More than 50% of the population is African American (U.S. Census Bureau, 2006). The county reports that almost 28% of its children live in poverty and the 10% unemployment rate is nearly double the state average of 6% (Action for Children, 2006b). The 4-year high school completion percentage is 53.7% (Action for Children).

Participants

The population targeted for this study was adolescent females aged 13 to 19 currently residing within Vance County, North Carolina. Adolescents are described as

youth aged 10 to 19 (WHO, 2006). Within the context of this study, adolescents aged 10 to 12 were not considered for two reasons. First, a portion of the survey instrument content is in part based upon the health education content taught to North Carolina public school students. Few elementary aged students (aged 10 to 12) receive sex education content in schools because many school districts determine it inappropriate. Most sex education instruction starts in 7th grade, or roughly age 13 (North Carolina Department of Public Instruction, 2009). Therefore, the likelihood of females aged 10 to 12 understanding the concepts presented in the survey was very low. Additionally, the largest pregnancy incidence is among those aged 15 to 19 (NCSCHS, 2005).

Recruitment strategies. The researcher obtained verbal confirmation and written letters of cooperation from several Vance County community collaborators before approaching adolescents in the target group. Early plans included recruitment with three organizations across three sites. This plan yielded low response rates to the survey; therefore, the recruitment plan was revised and the final strategy included seven organizations and eight sites across the county. The organizations included public and private groups; namely youth-supporting community groups, local schools, a county health entity, and a church. To ease scheduling and recruitment-related access issues, site coordinators were recruited at two sites—the schools and the county health site. The site coordinator was responsible for the coordination of the research efforts if scheduling did not permit the researcher to have direct access to participants. At both sites, the site coordinator was someone that originally worked closely with the target population. At all other sites, the researcher worked directly with participants.

Quantitative recruitment procedure. The general recruitment procedure for most sites involved the gathering of eligible participants and dissemination of consent forms while detailing through discussion of the purpose and objectives of the study. The researcher advised recruits of the need to share the information with their parents for the consent process. The participants were given a date (at least 1 week from the presentation date) by which the consent materials needed to be returned. The consent forms were collected and secured by either the site coordinator or the researcher.

There were two sites—the schools and the county health site—requiring special recruiting procedures because of scheduling and other constraints. At each school site, homeroom classrooms served as the recruitment venue. The researcher and site coordinator visited homeroom classes and briefly educated the eligible students on the study and its objectives. At the end of the presentations, eligible students were given a consent packet for their parents to review and were advised of the date by which the packet needed to be returned to the site coordinator. If the participant was aged 18 or 19, the researcher directly initiated the consent process. These participants were asked to determine their intent immediately and return the consent form to either the researcher or site coordinator. If the student did not return the form, it was assumed that either parental or personal consent was not given. The second site, the county health group site, required different recruitment procedures. The site coordinator extended participation to eligible adolescent women seeking clinic services as they deemed appropriate. Informed consent procedures were initiated with parents of these clients or with the client themselves if aged 18 or 19.

Qualitative recruitment procedure. Recruitment for the focus group was conducted across two sites, including one school site and a youth-supporting community organization. Each site regularly convened a teen parenting support group. The researcher attended multiple support group meetings to get a better understanding of the groups' function and recruit participants for the focus group sessions. Some girls held dual membership in both support groups. It was determined that the most appropriate and convenient place to convene the focus group was the school site. Subsequently, it was decided that the girls convened for the focus group must also attend the high school at which the focus group sessions would be held. As a result, there were initially18 possible participants for the focus group sessions. The school site coordinator helped the researcher determine which girls would be able to convene simultaneously during a single lunch period. This process further reduced the number to 11. The researcher also asked the site coordinator to help recruit 2 nonpregnant participants for the discussion group. After all of these conditions were met, 13 girls were recruited for the focus group sessions.

Invitation for the focus groups discussion included a brief presentation of the study's objectives and explanation of parental consent information. The group was advised of the return date for consent materials. The participants were instructed to return the consent form to the school site coordinator. Participant aged 18 or19 were asked to personally determine their intent to consent and return the form within the allotted time frame. The informed consent forms appear in Appendixes A and B.

For minors, an assent form (Appendix C) was used to further describe the objectives of the study and their rights as participants (USDHHS, 2005). Specifically, they were told that their participation was voluntary and all information provided would be kept in strict confidence by the investigator. The assent form was presented at the beginning of both the survey administration and focus group discussion. If the student failed to sign the assent form, they were exempt from participation in the study.

Sampling frame and sample. Because of predicted difficulty in recruitment as expressed by several participating groups, convenience sampling across all eight sites was used. These eight sites were chosen for their direct contact with the target population and their interaction with pregnant and parenting teenagers. Vance County was targeted because it has either the highest or second highest adolescent pregnancy rate in North Carolina for the past 5 years (NCSCHS, 2008). In 2006, there were an estimated 3,249 females aged 15 to 19 in Vance County (NCSCHS). Calculation of required sample size using a 95% confidence level and a confidence interval of 7 revealed the need for a minimum of 185 participants for the quantitative phase of the study. The recruitment process was bound by certain regulations involving consent procedures, posing some difficulty in obtaining the appropriate number of participants. However, the researcher was confident that the use of the convenience sampling procedure allowed for the maximum number of participants at each site.

Sampling for the qualitative phase of the study involved generating a convenience sample. The school site coordinator and researcher coordinated recruitment efforts from the existing pregnancy support groups. Since the majority of the pregnancy support

groups' participants were Black, invitations to participate in the focus group were based on creating a balance of participants based on grade level.

Sampling Technique

Once the researcher selected the target population, the sampling technique included a review of the adolescent pregnancy data for the state of North Carolina. Statistics from the year 2006 were the most current available from the North Carolina State Center for Health Statistics at the time of the sampling procedure. This data set provided information on total pregnancies for each of the 100 counties in North Carolina for adolescent women aged 10 to 19 and gave a county rank based on the pregnancy rate for those aged 15 to 19.

For the 2006 data year, Vance county reported 184 pregnancies among the adolescent population aged 15 to 19 in 2007 (NCSCHS, 2008). The corresponding pregnancy rate was 103.1, ranking the county first in the state. The researcher chose Vance County as the research area and approached school, county-based health officials, and a variety of community-based entities for participation. All agencies contacted expressed their concerns regarding the rates of adolescent pregnancy and agreed to allow the researcher to pursue the study at their sites. The researcher relied on the administrators of these groups to secure meeting dates and help with correspondence with the participants.

Instrumentation and Materials

Quantitative Phase

A basic premise of the SEM is that the analysis of any of the five levels is based on the understanding of the determinants of behavior relevant to that level (McLeroy et al., 1988). Accordingly, two levels of the SEM, intrapersonal factors and community factors, were evaluated. Intrapersonal factors, including sexual health knowledge, sex-related attitudes, and self-esteem, were assessed by the survey instrument in the quantitative phase. All information in the quantitative section was self-reported. Community-related factors assessed in the qualitative phase included the perceived opportunity structure and opinions regarding sex education modalities. These variables were assessed through focus groups discussion sessions.

The quantitative materials consisted of a survey instrument that included demographic questions developed by the researcher and a compilation of questions adapted from three separate questionnaires developed by Kirby (1984) and Rosenberg (1989), respectively: (a) the Mathtech Knowledge Test (MKT), (b) the Mathtech Attitude and Value Inventory (MAVI), and (c) Rosenberg's Self-Esteem scale (SESc). The goal of the quantitative data collection phase was to assess three intrapersonal factors of sexual health knowledge, sex-related attitudes, and self-esteem. The survey instrument was separated into four sections: demographics, knowledge, attitudes, and self-esteem. Scores from each of these assessments were evaluated with hopes of determining the status of these intrapersonal constructs. As one of the five levels of the SEM, intrapersonal factors relate to the characteristics of the individual and are important toward the design of

intervention strategies (McLeroy et al., 1988). Baseline scores and comparative analyses between primary and secondary groups guided factor analysis. The primary group comparison was pregnant or parenting versus nonpregnant or nonparenting while the secondary group comparisons were sexually experienced or non-sexually-experienced and Black or all other races.

Demographic information. The first section of the survey collected information on demographic variables important for stratification of data in the analysis phase. Primary variables assessed included age, race, and family structure. Other background variables assessed included: (a) parents school completion (b) student estimated grade point average, (c) age of first vaginal intercourse, (d) number of sexual partners, (e) pregnancy status, and (f) contraceptive use at last intercourse. All of these variables were assessed in multiple previous studies and are common among inquiries regarding adolescent pregnancy (Cowley & Farley, 2001; Kegler et al., 2001; Watts & Graham, 2000). The specific list of variables was chosen to address some of the external stakeholders' concerns and provide a context-rich analysis of comparative means.

Sex education knowledge. The second section of the survey assessed sexual health knowledge using items from the MKT (Kirby, 1984). The MKT is a 34-item multiple choice test that proposes questions in the following content areas: (a) adolescent physical development, (b) adolescent relationships, (c) adolescent sexual activity, (d) adolescent pregnancy, (e) adolescent marriage, (f) the probability of pregnancy, (g) birth control, and (h) sexually transmitted disease (Kirby, 1984). The MKT questionnaire was developed through a series of steps that included generating items for each content area deemed

necessary by a panel of professionals and testing the questionnaire twice in order to clarify and pinpoint items for removal (Kirby, 1984). Knowledge assessment for this inquiry focused on five of the aforementioned content areas: (a) adolescent sexual activity, (b) adolescent pregnancy, (c) probability of pregnancy, (d) birth control, and (e) sexually transmitted disease. These five content areas were chosen based on their relevance to adolescent pregnancy incidence (Kirby, 2007). The researcher extracted nineteen questions assessing these content areas from the original MKT. Table 1 shows the number of questions per content area for this section.

Table 1

Content Area Questions Included From Mathtech Knowledge Test (MKT)

MKT Content Area	Number of Questions
Adolescent Sexual Activity	4
Adolescent Pregnancy	2
Probability of Pregnancy	2
Birth Control	5
Sexually Transmitted Disease	6

To assert reliability, Kirby (1984) administered the test to 58 adolescents in a test-retest sequence spanning 2 weeks. Kirby reported the test-retest reliability coefficient as .89 (Kirby). Content validity was determined by the panel of experts who also selected

the content domains. Kirby reported that typically older students and students with higher grade point averages have higher scores.

Attitudes. Section three evaluated sex-related attitudes. Items from the MAVI (Kirby, 1984) were used. The MAVI contains 14 scales (Table 2), each of which consists of five, 5-point Likert- type items (Kirby). Development of the original MAVI included generating 5 to 10 items for each of the psychological outcomes deemed important by a panel of experts, review of the items by small groups (both adolescents and adults), examination of questionnaire design and scale construction by trained psychologists, and testing of the questionnaire with 200 adolescents.

Table 2

Mathtech Attitude and Value Inventory (MAVI) Scales

Domains
Clarity of Long-Term Goals
Clarity of Personal Sexual Values
Understanding of Emotional Needs
Understanding of Personal Social Behavior
Understanding of Personal Sexual Responses
Attitude Toward Various Gender Role Behaviors
Attitude Toward Sexuality in Life
Attitude Toward the Importance of Birth Control
Attitude Toward Premarital Intercourse
Attitude Toward the Use of Pressure and Force in Sexual Activity
Recognition of the Importance of the Family
Self-Esteem
Satisfaction with Personal Sexuality
Satisfaction with Social Relationships

The four scales chosen from the MAVI for the survey instrument used in this study included: (a) clarity of personal sexual values, (b) attitude towards sexuality in life, (c) attitude toward the importance of birth control, and (d) attitude towards premarital intercourse. A review of the literature pre-empted the researcher's determination of which scales would be most relevant for the assessment of attitudes related to pregnancy incidence (Coyle et al., 2004; Kowal & Blinn-Pike, 2004; Sieving et al., 2006). To examine "clarity of personal sexual values," the following statements were measured: (a) "I'm confused about my personal sexual values and beliefs," (b) "I'm confused about what I should and should not do sexually," (c) "I have trouble knowing what my beliefs and values are about my personal sexual behavior," (d) "I have my own set of rules to guide my sexual behavior (sex life)," and (e) "I know for sure what is right and wrong sexually for me."

To examine "attitude toward sexuality in life," the following statements were measured: (a) "sexual relationships create more problems than they're worth," (b) "sexual relationships make life too difficult," (c) "a sexual relationship is one of the best things a person can have," (d) "sexual relationships only bring trouble to people," and (e) "sexual relationships provide and important and fulfilling part of life."

To examine "attitude toward the importance of birth control," the following statements were measured: (a) "two people having sex should use some form of birth control if they aren't ready for a child," (b) "birth control is not very important," (c) "more people should be aware of the importance of birth control," (d) "birth control is not

as important as some people say," and (e) "if two people have sex and aren't ready to have a child, it is very important they use some form of birth control".

To measure "attitude toward premarital intercourse," the following statements were measured: (a) "unmarried people should not have sex (sexual intercourse)," (b) "people should not have sex before marriage," (c) "it is all right for two people to have sex before marriage if they are in love," (d) "people should only have sex if they are married," and (e) "it is all right for two people to have sex before marriage." The authors administered the questionnaire to 990 students to assess reliability. Cronbach's alpha was calculated for each scale. The scores range from .94 to .58 for each of the 14 scales.

The MKT and MAVI have been used in previous studies to assess the aforementioned constructs (Ip, Chou, Chang, and Lui, 2001; Kubik & Hecker, 2005; Powell & Jorgensen, 1985). In most cases, the two tests have been used within the same study to express the cumulative effect of knowledge and attitudes on behavioral outcomes. The MKT has also been determined as an effective assessment tool in the field of social work (Wodarski & Thyer, 2004). The MKT and MAVI are printed for public use in Davis (1998) compilation entitled *Handbook of Sexuality-Related Measures.*

Self-esteem. The fourth section of the survey assessed self-esteem using the SESc (Rosenberg, 1965; University of Maryland, 2008). As a one-dimensional measure, this scale is designed to measure one's perception of global self-esteem. Therefore, it describes the extent to which a person is satisfied with their life, considers themselves worthy, and commands social respect (Rosenberg; University of Maryland). Originally

designed for use with adolescents in junior and high schools (approximately aged 12 to 19), the SESc is commonly used within adult populations (University of Maryland).

Rosenberg (1965) originally fashioned the SESc as a Guttman-type six-item scale. Guttman scaling is a design techniques used to establish a one-dimensional continuum for a concept (Trochim, 2006). Therefore, the SESc was designed so that if respondents agreed to one item on the measure, they would also agree with all the other items that are lower in intensity. Reviews of the scale revealed that researchers and users preferred the 4-point Likert scale (Blascovich & Tomaka, 1991; Wylie, 1989). Therefore, a revised SESc is a 10-item self-report scale with four response choices in Likert-type scale format with responses ranging from “strongly agree” to “strongly disagree”. There is no manual for the SESc, and Rosenberg did not elaborate the scale point format used in the original study. Accordingly, researchers developed their own set of instructions for the SESc (Blascovich & Tomaka). In most cases, this includes a presentation of possible responses and asking the respondents to circle or tick one of the four responses (University of Maryland, 2008).

The initial test of Rosenberg’s (1965) SESc engaged 5,024 high school juniors and seniors from ten randomly selected schools in New York State and was scored originally scored as a Guttman scale (University of Maryland, 2008). Evaluations conducted to determine the validity and reliability of the SESc revealed contradictions regarding the dimensional nature of the scale. Analyses completed with adults revealed two dimensions usually defined by the negatively worded items (Shahani, Dipboye, & Phillips, 1990). The studies using adolescent populations found the measure to be a valid

and reliable one-dimensional measure of self-esteem (Crandal, 1973; McCarthy & Hodge, 1982; Silbert & Tippett, 1965). Noting the one-dimensional nature of this scale among the adolescent population is important toward proper measurement of the construct for this study.

Researchers have presented several indicators for internal consistency reliability. Most have engaged adult populations reporting alpha coefficients ranging from .72 to .83. (Blascovich & Tomaka, 1991; Dobson, Goudy, Keoth, & Powers, 1979; Schmitt & Bedeian, 1982; Wylie, 1989). Those evaluating the scale in adolescent populations have presented alpha coefficients ranging from .77 to .88 (Byrne & Shavelson, 1986; Fleming & Courtney, 1984; Wylie, 1989). Test-retest reliability of the SESc has been examined over periods of 7 months (Byrne, 1983) and 1 week (Silber & Tippett, 1965) in adolescent populations. Analyses revealed test-retest reliability coefficients of .63 and .82 respectively.

Construct validity for the SESc is described as strong, as it has been significantly associated with self-reports of depression (Rosenberg, 1965) and psycho-physiological indicators of anxiety and depressive effect (Kaplan & Pokorny, 1969). Hagborg (1993) tested the construct validity among responses from an adolescent population noting that the SESc and its factors had identical correlation patterns with several self-perception related scales including the Scholastic Competence scale (r = .48, .41, and .47). Hagborg (1993) also assessed the convergent validity of the SESc with the Global Self Worth scale. The SESc maintained correlation coefficients of .76, .72, and .66 on its factors. The Global Self Esteem scale explained 56%, 50%, and 41% of the variance in

the SESc and its factors. Additionally, Crandal (1973) and Silbert and Tippett (1965) reported *r* =.60 with Coopersmith's Self-Esteem Inventory (Coopersmith, 1981) and *r* = .83 with the Health Self-image questionnaire, respectively.

Some items on the SESc were scored positively while others were scored in reverse valence. Positive scores were denoted by values ranging from 3 to 0 where strongly agree =3, agree =2, disagree =1, and strongly disagree =0. Those items that were scored positively included: (a) Item 1 "I feel that I'm a person of worth, at least on an equal plane with others," (b) item 2 "I feel that I have a number of good qualities," (c) item 4 "I am able to do things as well as most other people," (d) item 6 "I take a positive attitude toward myself," and (e) item 7 '"on the whole, I am satisfied with myself." The five remaining items were scored in reverse valence. The value given to these items ranged from 0 to 3 (strongly agree to strongly disagree). These items included: (a) Item 3 "All in all, I tend to feel that I am a failure," (b) item 5 "I feel I do not have much to be proud of," (c) item 8 "I wish I could have more respect for myself," (d) item 9 "I certainly feel useless at times," and (d) item 10 "At times I think I am no good at all".

Piloting of the survey instrument took place with a convenience sample of 7 adolescent females aged 13 to 19. The survey was administered twice within a 2-week period to assess test-retest reliability, stability of the instrument, and average time of completion. For the knowledge, attitudes, and self-esteem portions of the survey, a paired *t* value was calculated. The knowledge paired *t* value was -2.066 (*p*= .0844). The *p* value was higher than .05. However, attribution of the variance in the scores was largely due to 1 participant. Given the circumstances of a small participant pool and the minimal

average difference of the remaining participants, the researcher felt confident that the knowledge section was reliable and stable. The paired *t* values for the attitude scales ranged from 0 to -1.18, with *p* values ranging from .283 to 1 for the four scales used. The paired *t* value for the self-esteem scores was -1.65 ($p = .149$). Overall, the variance between the scores and measures were minimal and statistically acceptable for hypothesis testing allowing the researcher to affirm the test-retest reliability of the survey instrument.

The demographic section of the instrument was sent to a panel of 8 health education specialists for evaluation. The evaluations required the panelists to comment on the clarity of instructions, clarity of items, ease of completion, and any suggested changes for improved administration. The panelists affirmed the clarity, relevance, and content of the survey (Appendix D) and no revisions were advised.

Qualitative Phase

Focus group questions were used for assessment in the qualitative phase. The purpose of the qualitative phase of the inquiry was to (a) clarify perceptions of community opportunity structure, (b) expose the impact opportunity structure has on intrapersonal constructs, (c) determine and describe how opportunity structure contributes to adolescent pregnancy, and (d) determine which educational modalities adolescents perceive as helpful with this problem. In exploring these issues, the goal was to describe how the pregnant adolescent female perceives her community, how the community has impacted the development of her individualistic self, and how where she lives affects her decision making. The SEM proposes the community is a mediating structure (McLeroy et

al., 1988). Therefore, its inhabitants inherently create and support a series of social norms that reflect their lifestyles and ways of thinking. Assessing opportunity structure helped determine how the context of rural life in this community impacts the sexual health-related decisions made by these youths.

Based on current literature, the researcher developed a series of constructs that helped describe community opportunity structure. Each construct was developed by combining themes found in the literature and assessment needs for the proposed study. For each construct, a set of questions was generated and presented to a panel of health education and public health professionals to evaluate the content, clarity, and overall impact for answering the research questions. Each panel member was asked to submit an evaluation form with comments and feedback. After reviewing the evaluation forms, the researcher made minor revisions for clarity prior to the focus group discussion.

The following questions were posed for construct A, "preparedness for higher education or trade-related job": (a) "describe the ways that your high school has prepared you to enter college or start a trade-related job upon graduating," (b) "describe how often and in what ways your school teachers discuss college," and (c) "in what ways has the community (e.g. church, community groups) encouraged youth to go college or learn more about college?" Construct B, "preparedness for employment," was evaluated with the following questions: (a) "describe the ways your teachers at school discuss preparing to get a job," (b) "describe the ways your high school experience has prepared you to get a job outside of your community," and (c) "think about the adults you see or talk to regularly; this might include family members, church members, or other adults you

know; describe the types of jobs they have." Constructs A and B were taken from themes assessed by Cubbin et al. (2005) and Tickamyer and Duncan (1990).

Construct C, "community role models for youth," was evaluated by asking "Think of someone you desire to be like when you become an adult; someone you might call a role model. Describe your interaction with people like this where you live." Construct D, "preparedness for life outside of community (isolationism)," was evaluated by asking: (a) "describe your plans for after you graduate from high school" and (b) "think of what your life will be like after high school. Describe what your experience would be like if you moved away from home to another area either for school or a job." Constructs C and D were derived from Hannerz's (1969) and Wilson's (1987, 1996) discussions of economic stress and community isolationism.

Construct E, "community acceptance of adolescent pregnancy," was assessed by asking: (a) "if you are pregnant or parenting, how has your family responded to you being pregnant as a teenager," (b) "if you are not pregnant, how do you think your family would respond to you being pregnant as a teenager," (c) "how do you think the other adults in your community or neighborhood feel about teen pregnancy," (d) "how did your friends react when they found out you were pregnant," and (e) "in what ways do the adults in your community show how they feel about teen pregnancy." Construct E is original to this research. Components of the community (e.g., family structure, friends and peers, socioeconomic status) and their impact on sexual behavior have been assessed individually (Hampton et al., 2005; Santelli et al., 2000; Seiving et al., 2006).

Assessment of construct F, “summative effect of community on self,” included reciting a preface followed by a question. The preface for the first question was: “Think about your community. Your community includes people, like friends and family, as well as places you go regularly. Now, respond to the following question: ‘How would you describe the impact that your community has had on your future goals?’” The second preface was: “Think about self-esteem, or your belief that you can achieve simple things in life. Now, answer the following questions.” The questions were: (a) “describe how your community has affected your self-esteem” and (b) “describe how your community affects the decisions you make about sex.” Construct F has been postulated by Merrick (1995). Merrick asserted that adolescents choose pregnancy because of low or underdeveloped self-relating concepts (e.g., self-esteem) as a result of oppressive social contexts.

Construct G, “sexual health knowledge and modalities,” was assessed by asking the following questions: (a) “describe how your school has impacted your knowledge about sex education,” (b) “describe ways adults could help teens learn more about pregnancy prevention,” and (c) “where should sex education programs take place.” Construct G is original to this study. These questions reflected concerns and interest of community collaborators.

Assessment of Study Variables

Quantitative phase (intrapersonal factor assessment). The first section of the instrument collected data on demographic variables. Questions 1-16 asked basic information like age, family structure, and grade level. Table 3 lists the demographic and

background category and number of variables for each category. Instructions asked participants to tick their response, either “a, b, c, and etcetera…” for multiple-choice questions or reply in the space provided.

Table 3

Demographic Variables Assessed in Survey Instrument

Variable	Number of categories
Age	Reports actual age
Grade	Reports actual grade
Race	6
Ethnicity	Yes or no
Family/mother	6
Mother’s education	4
Family/ father	6
Father’s education	4
Number in household	Reports actual num.
Pregnancy status	3
Grade point average	5
Sexual intercourse incidence	Yes or no
Age at first sex	Reports actual age
Number of sex encounters	Reports actual num.
Number of sexual partners	Report actual num.
Pregnancy prevention at last sex	Yes or no

The second section assessed sexual health knowledge and included questions taken from the MKT. Nineteen questions with multiple choice responses were be presented. The MKT is scored by obtaining a percentage, specifically by dividing the number of correct answers by the total number of questions. Therefore, the score was calculated by dividing correct answers by 19. No provisions were made for non-answered questions (Kirby, 1984).

The third section of the survey instrument used items from the MAVI to assess sex-related attitudes. Of the 14 scales, the researcher chose four as most relevant for the survey instrument and the assessment of interaction with pregnancy incidence. The MAVI lists questions randomly, meaning the items are not listed by scale. Therefore, the researcher arranged the questions numerically and sequentially in the same manner as described for the knowledge section. For example, item one under scale "clarity of personal sexual values" was followed by item one under scale "attitude toward sexuality in life". This pattern was repeated until all 20 items were listed.

Scoring for the MAVI was based on the review of items by its scale. The participants chose from a 5-point Likert-type scale of responses ranging from "strongly disagree to strongly agree". The scoring table has each item and its corresponding scale listed (Table 4). Each item has either a plus sign (+) or minus sign (-) which indicates if the items should be scored positively or reversely scored. The mean score for each scale was determined by adding the responses and then dividing by 5. Higher scores represented either attitudes that are more favorable positively or negatively (Kirby,

1984). On some scales, opinions could differ regarding the social desirability of larger scores. The fourth section of the survey instrument assessed self-esteem. There are 10 items on the SESc. To score the SESc, each of the 10 items was given a value from 0-3 based on the response chosen. The scoring scale ranges from 0-30 with 30 representing the highest score possible. Some questions in the SESc were reversely score. Table 5 delineates positively and negatively scored questions. A higher score denoted higher perception of global self-esteem.

Table 4

Scoring Table for MAVI Items Included in Survey Instrument

Domain	Score
Clarity of Personal Sexual Values	(-Q1-Q5-Q9+Q13+Q17)/5
Attitude toward Sexuality in Life	(-Q2-Q6+Q10-Q14+Q18)/5
Attitude toward the Importance of Birth Control	(+Q3-Q7+Q11_Q15+Q19)/5
Attitude toward Premarital Intercourse	(+Q4+Q8-Q12+Q16-Q20)/5

Table 5

Scoring for SESc Items

Positively scored items: strongly agree = 3 agree = 2 disagree = 1 strongly disagree = 0
Item 1 "I feel that I'm a person of worth, at least on an equal plane with others"
Item 2 "I feel that I have a number of good qualities"
Item 4 "I am able to do things as well as most other people"
Item 6 "I take a positive attitude toward myself"
Item 7 "On the whole, I am satisfied with myself"
Reversely scored items: strongly agree = 0 agree = 1 disagree = 2 strongly disagree = 3
Item 3 "All in all, I tend to feel that I am a failure"
Item 5 "I feel I do not have much to be proud of"
Item 8 "I wish I could have more respect for myself"
Item 9 "I certainly feel useless at times"
Item 10 "At times I think I am no good at all"

Qualitative phase (community factor assessment). In the qualitative phase, the focus group format was used to explore the variables relating to community. The seven constructs drawn from the literature were used to generate 18 open-ended questions. To preface the entire discussion session, the researcher reminded the girls of the confidentiality of the conversation, the need to be as honest as possible, and to speak clearly. Additionally, the researcher provided a working definition to the terms

"community" and "self-esteem" so that the participants understood what to think about as they were answering the questions.

Data Collection Procedure

The data collection process took place in two phases sequentially. During the quantitative phase, the survey instrument was administered (a) through five randomly chosen school homeroom classrooms on each grade level (9^{th} – 12^{th}) by the researcher and site coordinator, (b) in the county health setting by the site coordinator, and (c) at all other sites by the researcher. The researcher secured consent before survey administration. Only the researcher had access to the completed questionnaires or relative data.

The qualitative data collection took place at each of the four focus group sessions. The researcher prepared the moderator's guide including introductory directions and definitions to be used, as well as discussion questions and a place for notes. An observation chart was prepared in table format listing each question and a column for notes. The school site coordinator (school counselor) was asked to complete the observation chart in order to assist the researcher in noting any non-verbal responses to the questions posed. These notes pertaining to body language and dynamics between participants were collected to provide context during the analysis process.

Each discussion was initiated by reviewing the purpose of the session, setting ground rules, and informing the group that the session was being recorded. Dialogue for this introduction appears in Appendix E. The introduction reminded participants of the confidentiality of their comments and the importance of asking questions for clarification.

The researcher used probe questions as needed to clarify and obtain complete details from the participants (Kruger & Casey, 2000). Example probe questions are listed in Appendix F. A digital microphone and recorder documented each focus group session (under the consent of the participants). The system was tested prior to its use during data collection to ensure proper set up towards obtaining a clear recording. The recording was transcribed using a transcription service. The digital data were non-identifying and the administrator secured all qualitative transcripts.

Data Analysis Procedure

This study engaged a sequential transformative mixed-method design with equal emphasis on both quantitative and qualitative methods. Completion of data analysis took place in two phases, following the collection of corresponding data. Phase one included analysis of quantitative data from the survey questionnaire. Phase two included analysis of qualitative data from transcripts of the focus group discussion sessions.

Quantitative analysis. The quantitative data presented information regarding the intrapersonal level of analysis (SEM). The analysis of this data was aimed at providing answers to the following research questions: (a) what is the status of intrapersonal constructs (sexual health knowledge, sex-related attitudes, and self-esteem) in pregnant, parenting, nonpregnant, and nonparenting females aged 13 to 19 years; and (b) are intrapersonal constructs (sexual health knowledge, sex-related attitudes and self-esteem) associated with adolescent pregnancy incidence in this county.

Demographic information collected from section A of the survey was analyzed descriptively and data was summarized in tables of descriptive statistics (e.g., *N*, mean,

standard deviation, median, and minimum and maximum) for each group. Categorical demographic data were summarized via counts and percents for each group, pregnant or parenting or non-pregnant and other comparison groups as necessary. In addition, the following hypotheses were tested:

Hypothesis 1:

H_0: There will be no statistically significant difference in the sexual health knowledge scores of those in the pregnant or parenting group when compared to those in nonpregnant or nonparenting group.

$H_{A:}$ There will be a statistically significant difference in the sexual health knowledge scores of those in the pregnant or parenting group when compared to those in nonpregnant or nonparenting group.

Hypothesis 2:

H_o: There will be no statistically significant difference in the sex-related attitude scores of those in the pregnant or parenting group when compared to those in the nonpregnant or nonparenting group.

$H_{A:}$ There will be a statistically significant difference in the sex-related attitude scores of those in the pregnant or parenting group when compared to those in the nonpregnant or nonparenting group.

Hypothesis 3:

H_o: There will be no statistically significant difference in the self-esteem scores of those in the pregnant or parenting group when compared to those in the nonpregnant or nonparenting group.

$H_{A:}$ There will be a statistically significant difference in the self-esteem scores of those in the pregnant or parenting group when compared to those in the nonpregnant or nonparenting group.

Calculations completed included two-sample *t* tests at the two-sided, 0.05 significance level, and simple linear regressions to determine associations between variables.

Qualitative analysis. The qualitative data presented information relevant to the community level of analysis (SEM). Specifically, this included the examination of community opportunity structure. The analysis of qualitative data was driven by the following research questions: (a) how do pregnant, parenting, nonpregnant, and nonparenting adolescent females aged 13 to 19 perceive the community opportunity structure in this rural area? (b) what is the impact of perceived community opportunity structure on adolescent intrapersonal constructs? (c) how does perceived community opportunity structure contribute to sexual behavior leading to pregnancy? and (d) what modalities do adolescents perceive as helpful in pregnancy prevention?

Generally, the qualitative analysis process was non-linear. Seidel (1998) described a process that includes "noticing, collecting, and thinking" (p. 1). Seidel observed that "noticing" encompasses the collection of observation notes or recordings and "collecting" involves sorting these codes into instances, and "thinking" involves making sense out of has been collected. This process is described as iterative and progressive in that as one thinks about things, they are also noticing new things in the

data. This allows the researcher to then collect and think about these new things. The process becomes infinitely spiral (Seidel). This process helped interpret qualitative data.

As previously mentioned, the researcher recorded the focus group discussion sessions as well as collected observation notes. The recorded sessions were transcribed and analysis began with careful reading of the transcripts and interview notes. This helped identify portions of the text that were most meaningful towards the research questions. The process of open coding was used to help to identify patterns in the text and subsequent themes in the data (Berkowitz, 1997). For each construct evaluated, the researcher recorded an open code or keyword. After completing the coding, the codes were grouped into broader themes. The themes were reviewed and considered valid if identified multiple times. The themes were then linked back to the constructs under investigation. Codes that did not "fit" or that did not repeat were eliminated. Israel and Galindo-Gonzalez (2008) noted that it is natural that some codes will not fit.

As the themes were linked back to the constructs, emerging patterns and relationships were identified. The goal was to make general discoveries about the research questions by specifically determining if there are any connections between perceived community opportunity structure and incidence of pregnancy. Synthesis of this data was completed using observation notes, literature, and previous experience of the researcher. The qualitative discussion questions appear in Appendix F.

Quantitative and qualitative connection. The purpose of employing this mixed-method design was not to merge the two data sets. The data from the quantitative phase were not contingent on data from the qualitative phase or vice versa. On the

contrary, the data were reviewed separately and with equal gravity within the context of the SEM as the theoretical framework. This means that the data collected were used to provide a social context to adolescent pregnancy as a patterned behavior (McLeroy et al., 1988). These data were inherently connected since each of the five SEM systems interacts with each other. The SEM maintains that data from one level maintains its importance alone as well as when connected to data from another level. The data on intrapersonal and community-related factors were reviewed both separately and together (triangulation).

Human Subject Research and Ethical Considerations

It was the objective of the researcher to uphold the highest ethical standards and principles while executing the study. The study proposal was submitted to the Walden University Institutional Review Board for approval prior to conducting the study. The Walden IRB approval number is 10-08-08-0340582. Care was exercised in all phases of the recruitment process. No coercion of participants took place and the student disseminated information to parents and adolescents regarding their rights. Parental consent and participant assent forms were presented to all participants under the age of 18. For participants aged 18 or 19, only the consent form was presented. It was explained to the participants that their involvement was voluntary. Once the participants agreed to volunteer, they were required to sign the consent form for participation. Participants were notified of their right to discontinue their commitment at any time during the study. The participants were informed of all procedures, expectations, and risk associated with their participation. There were very minimal risks of harm, and these were divulged. There

were no psychological or physical risks to the subjects and each participant was advised about maintaining confidentiality throughout the process. Participants were given the researcher's contact information to pose questions, comments, or concerns regarding their participation.

CHAPTER 4:

RESULTS

Introduction

The purpose of this sequential mixed-method study was to examine the intrapersonal and community-related factors associated with adolescent pregnancy. The sample size for this study was 102 females, aged 13 to 19, recruited from Vance County, North Carolina. The data were collected from a total of eight sites across the county. Each site was chosen due to its proximity to, and interaction with, the target population. The researcher structured the instruments for both the quantitative and qualitative phases to address health promotion and programming with the social ecological model (SEM) as the underpinning theory. The quantitative data were collected using a survey that included a compilation of a series of demographic questions and three instruments designed to measure sexual health knowledge, sex-related attitudes, and self-esteem of adolescents. The qualitative data were collected through a series of 20-minute focus group discussions. with pregnant or parenting and nonpregnant or nonparenting women.

Quantitative Results

The independent variable was the group (pregnant or parenting or nonpregnant or nonparenting), the primary group distinction.The secondary group distinctions were race (Black and all other races), and sexual experience (sexually experienced or sexually inexperienced). While these secondary group distinctions do not pertain to the research questions, the importance of these distinctions became apparent during the analysis process. The dependent variables were sexual health knowledge, sex-related attitudes,

and self-esteem. Descriptive statistics were generated and two sample *t* tests at the 0.05 significance level were completed. Simple linear regressions were computed to determine existing associations and emerging relationships.

In anticipation of serious response-related challenges exacerbated by the rural setting and constraints in confirming parental consent, 415 surveys were disseminated. Convenience sampling was used at all eight sites to increase the number of participants and improve the potential response rate. The total number of surveys collected and eligible for analysis was 102. The response rate was 24.6%. The following sections outline the survey results.

Section A: Demographic Data

Demographic variables were assessed in section A of the survey instrument. The average age of all participants was 16.7 years; 18 year olds had the highest representation (31%). Grade levels accounted for in this data include 7^{th} through 12^{th} and high school graduate (GRAD). The majority of the participants were Black (73.5%). There were 20 (19.6%) White participants, 3 Latino (2.9%), 2 Asian or Pacific Islander (1.9%), 1 mixed race (Black and White), and 1 classified as Other.

The survey assessed family structure by asking which parent(s) were in the residence, their educational attainment, and the number of residents in the household. Most participants reported living with both a mother and father (46.1%) or living with a mother only (41.2%). Two participants lived with only a father and 11 (10.7%) lived with neither. The survey also assessed parents' educational attainment. Of the 48% of

participants reporting this measure, most reported completion of high school (45%). The average number of household members was 4.25 across all participants.

To determine sexual experience, each participant was asked if she had had vaginal intercourse and if so, the age of first occurrence. Thirty (29.4%) participants responded no (nonexperienced) to this question, 71 (69.6%) responded yes (sexually experienced), and one did not respond. All of the participants in grades 7 and 8 classified themselves as non-experienced. These participants were all age 13. As age increased, so did the number of yes responses. Specifically, the largest number of yes responses was noted in those aged 16 to 19 (63 total). The average (*M*=average*)* age of the sexually inexperienced was younger (*M* = 15.6 years) compared to those reporting sexual experience (*M* = 17.3 years).

For all participants, the average age for first intercourse was 14.8. The average age of Black participants' first intercourse was 14.7 years. For all other races first intercourse age averaged 15.1 years. Pregnant or parenting participants' average age at first intercourse was younger (*M* = 14.3 years) compared to nonpregnant or nonparenting (*M* = 15.1 years, *p* =.05).

The survey measured frequency of sexual activity by asking participants the number of times they had vaginal intercourse and with how many partners in the last 6 months. Of those considered sexually experienced (answering yes to having had vaginal intercourse), 93% had vaginal intercourse within the past 6 months, with the incidence averaging 5.58 times. The number of vaginal intercourse occurrences increased with age. Black participants averaged more sexual intercourse occurrences in the past 6 months (*M*

= 5.50, *SD* = 8.21) compared to all other races combined (*M* = 3.38, *SD* = 2.36). Pregnant or parenting participants averaged more occurrences of vaginal sex (*M* = 6.67, *SD* = 9.98) when compared to their nonpregnant or nonparenting counterparts (*M* = 4.32, *SD* = 5.86).

Of the sexually experienced participants reporting intercourse within the past 6 months, the average number of partners was 1.2 (*SD* = 0.61). Black and all other races (OR) number of partners did not differ (Black *M* = 1.1, *SD* = 0.65, OR *M* = 1.1, *SD* = 0.36). Pregnant or parenting (PP) and nonpregnant or nonparenting (NPP) participants' partners differed minimally (PP *M* = 1.2, *SD* = 0.46, NPP *M* = 1.0, *SD* = .07).

The participants classified as sexually experienced were also asked to report birth control use at last vaginal intercourse. Of those reporting having had sex in the past 6 months, 72.8% reported using some form of birth control at their last intercourse. More than half (57.3%) of Black participants reported using birth control when compared to one-third (33.3%) of all other races. A greater percentage (77.7%) of pregnant or parenting participants reported using birth control at last vaginal sex when compared to their nonpregnant or nonparenting sexually experienced peers (64.3%).

The assessment of grade point average (GPA) included asking the participants to declare an estimate range. The most commonly reported ranges were 3.1 to 4.0 (54.9%) and 2.1 to 3.0 (36.3%). These represent B to A and C to B grade averages, respectively. Six participants (5.8%) reported 1.1 to 2.0 (D to C), 2 (1.9%) reported 4.0 or higher (A+) while 1 participant did not answer.

Intrapersonal Characteristics

The data were collected to provide insight to two research questions: (a) what is the status of intrapersonal constructs (sexual health knowledge, sex-related attitudes, and self-esteem) in pregnant or parenting and nonpregnant or nonparenting females aged 13 to 19 and (b) are intrapersonal constructs associated with adolescent pregnancy incidence in this county?

Sex education knowledge. Hypothesis 1: There will be no statistically significant difference in the sexual health knowledge scores of those in the pregnant or parenting group when compared to those in the nonpregnant or nonparenting group. This section of the survey (section B) contained 19 questions. The scores were determined by calculating the number of correctly answered items as each item was worth one point. The average knowledge score for all participants was 11.07 (*SD* = 3.46) correct responses out of 19 questions (58.2% correct). Linear regression analyses in consideration of age produced no significant relationship (*R2* = .01, *p*= .30, see Figure 3). There were no significant differences for knowledge scores between Black participants and all other races (Black *M* = 11.00, *SD* = 3.26, OR *M* = 11.26, *SD* = 2.96, *p* =.718). The average number of correct responses increased as reported GPA range increased. For example, the participants reporting GPA of 3.1 to 4.0 averaged 11.25 (*SD* = 2.86) correct responses compared to 10.1 (*SD* = 2.90) correct responses for those with GPA's in the 1.1 to 2.0 range. Pregnant or parenting participants averaged a higher score than nonpregnant or nonparenting participants (PP *M* = 11.29, *SD* = 2.85, NPP *M* = 10.98, *SD* = 3.29; *p* = .666). This difference was not statistically significant (*p* = .66).

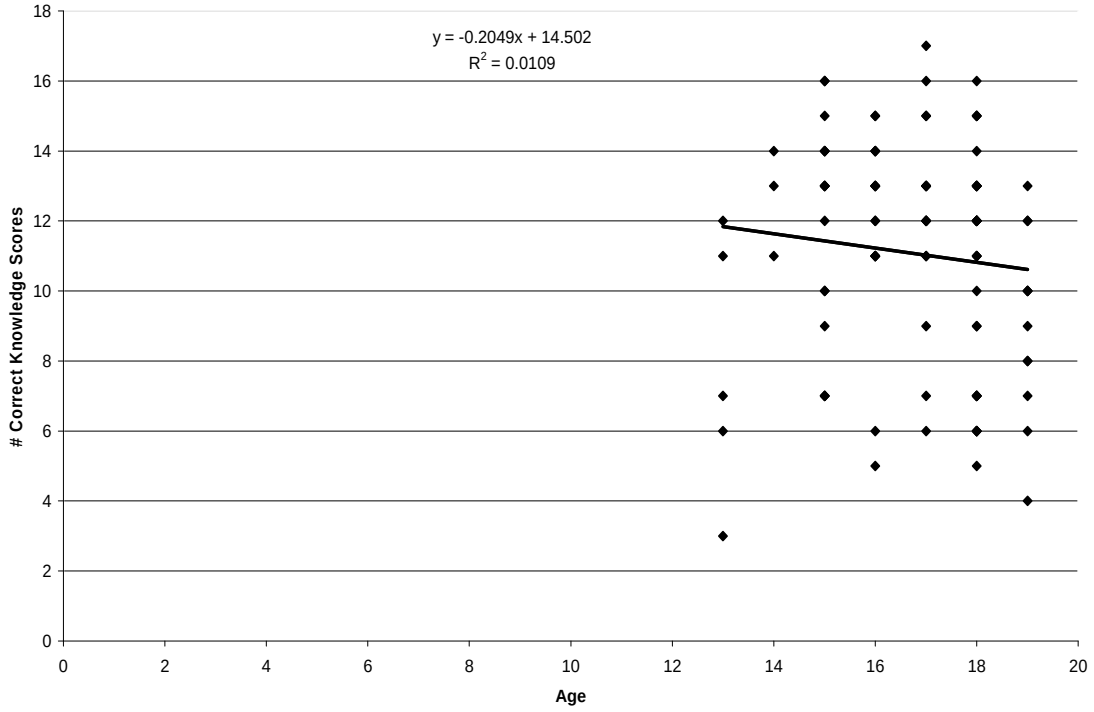
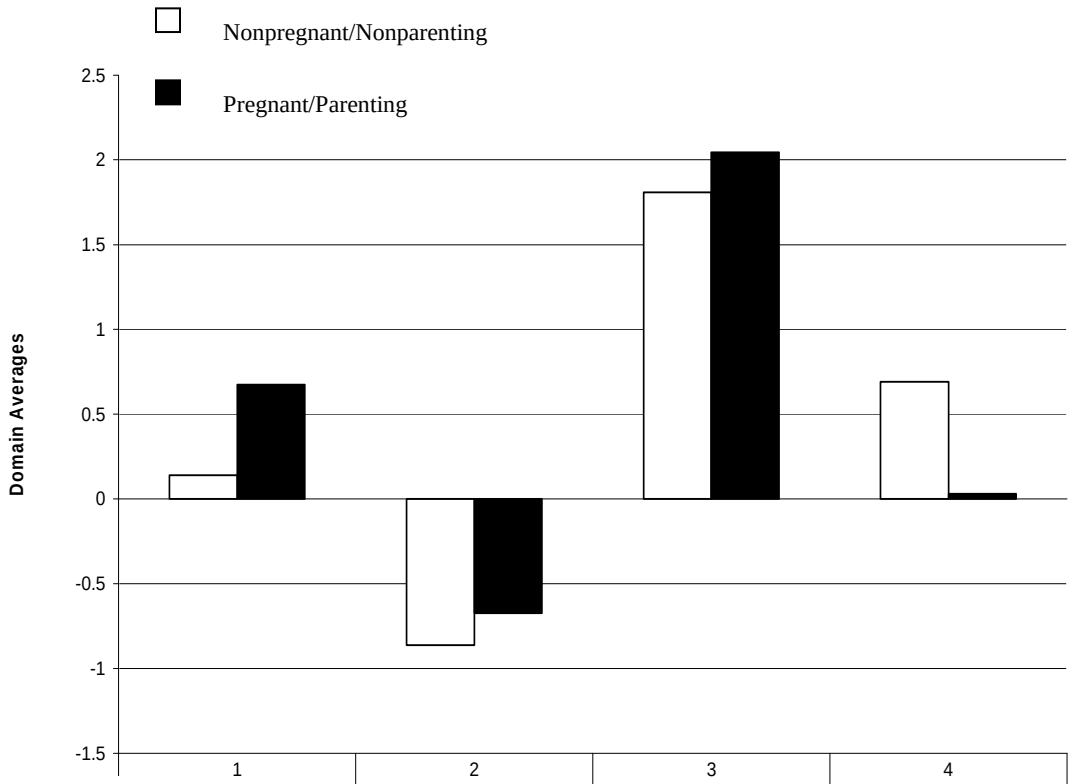


Figure 3. Knowledge-variable scatter plot and linear regression.

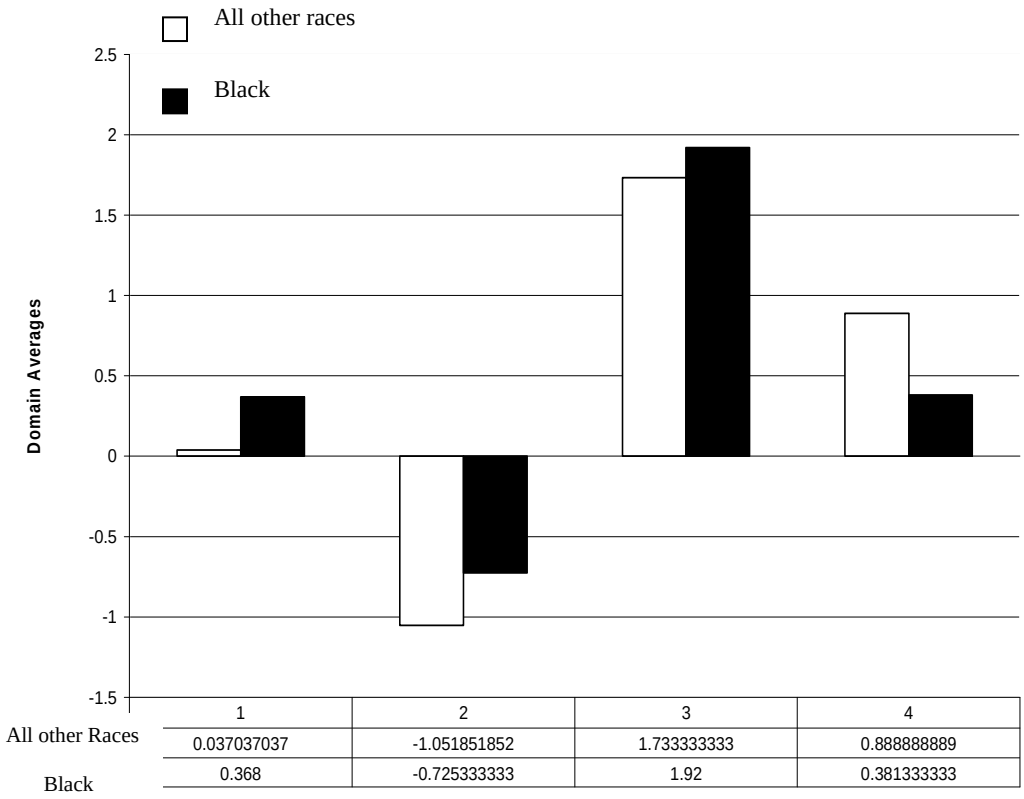
Sex-related attitudes. Hypothesis 2: There will be no statistically significant difference in the sex-related attitude scores of those in the pregnant or parenting group when compared to those in the nonpregnant or nonparenting group. The Mathtech Behavior and Value Inventory measured sex-related attitudes across four domains. Figures 4 and 5 show the domain average comparisons for participants by group and race respectively. Within all four domains, participants responded to five statements using a 5-point

Likert-type scale. Domain 1 was clarity of personal sexual values. The potential scores for this domain ranged from -2.6 (extremely unsure of personal sexual values) to 1.4 (extremely sure of personal sexual values). The domain average for all participants was .28 (*SD* = .82). Age may not be a strong predictor of domain 1 scores (*R2* = .0789, *p* = .004 see Figure 6). The *p* value presented relates to the correlation coefficient (*r)*. The low *p* value signifies that the responses tended to vary as age varied. However, the small *R2* suggests that age by itself does not sufficiently predict these responses (it is possible that other factors may influence this trend). In such cases, the researcher must determine if the low *R2* gives a better indication of the relationship under investigation as opposed to the *p* value. A review of the *R2* and scatter plot for attitude domain 1 and age, showed a trend that denotes a general relationship, but this trend does not indicate a specific relationship. Therefore, the researcher is not able to confidently predict scores from this domain based on age. In support of the potential general trend, it was noted that as grade level increased, so did the average domain 1 score. For example, the average scores for participants in grades 11, 12 and post GRAD increase incrementally (11^{th} *M* = .33, 12^{th} = .42, post GRAD *M* = .62).



	1	2	3	4
All other Races	0.138666667	-0.861333333	1.808	0.690666667
Black	0.674074074	-0.674074074	2.044444444	0.02962963

Figure 4. Domain average comparisons by primary grouping.



	1	2	3	4
All other Races	0.037037037	-1.051851852	1.733333333	0.888888889
Black	0.368	-0.725333333	1.92	0.381333333

Figure 5. Domain average comparisons by race.

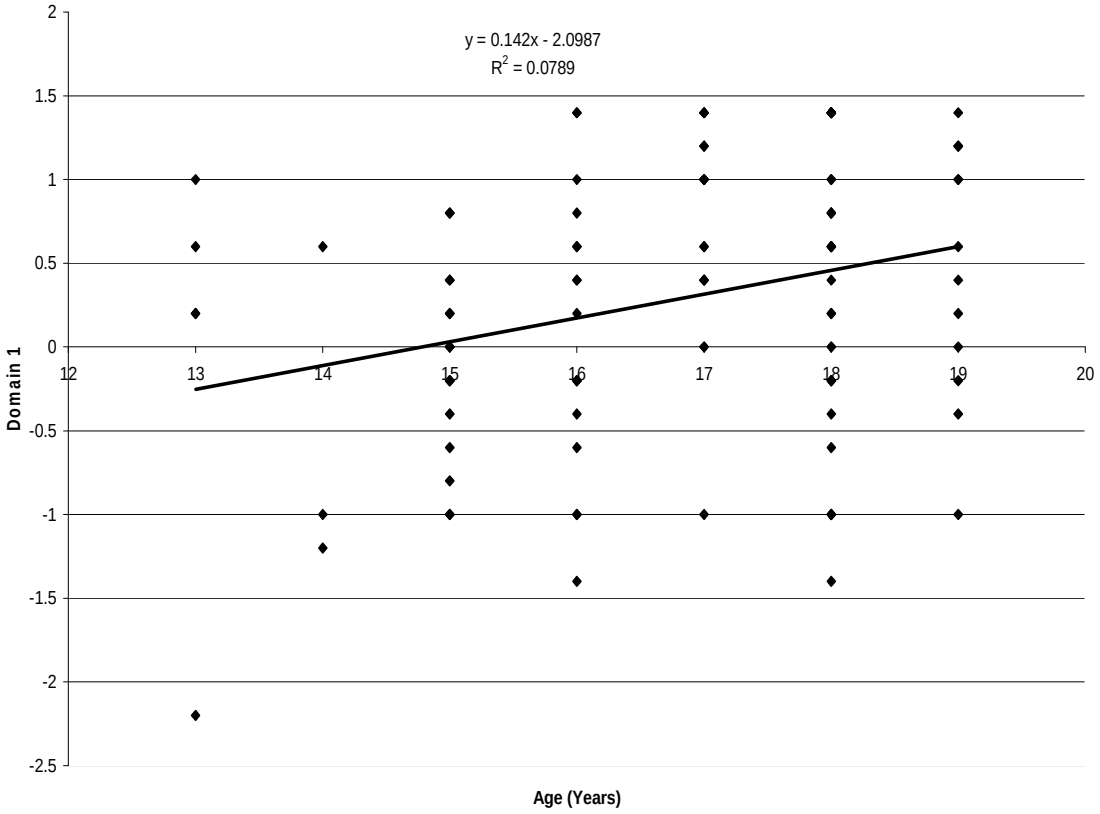


Figure 6. Scatter plot and linear regression of attitude domain 1, .

Black participants' average score was lower than all other races (Black *M* = .04, *SD* =.76, OR *M* = .37, *SD* = .95, *p* = .071). This difference was not statistically significant. Sexually experienced (SExp.) participants averaged a higher score when compared to sexually inexperienced (SExp. *M* = .43, *SD* = .76, NSExp. *M* = .04, *SD* = .81). The differences between these two groups were statistically significant (*p* = .008). Pregnant or parenting participants' average score was higher than nonpregnant or nonparenting participants (PP *M* = .67, *SD* = .74, NP *M* = .14, *SD* = .81, *p* = .003), also representing a statistically significant difference.

For domain 2, attitude toward sexuality in life, the range of possible scores for this domain was -2.6 (extremely doubtful or confused about sexual relationships) to 1.4 (extremely certain orconfident about sexuality in their life). The domain average across all participants was -.81 (*SD* = .76). Linear regression analyses revealed no detectable patterns in consideration of age (*R2* = .0016, *p* = .694, see Figure 7). However, grades 7 and 8 reported the lowest average scores (7^{th} *M* = -1.01, 8^{th} *M* = -1.90). Grade 11 reported the highest average score (11^{th} *M* = -0.68). There were no significant differences between the scores of Black participants and all other races (Black *M* = -.73, *SD* = .70, OR *M* = -1.05, *SD* = .88, *p* = .056). Sexually experienced participants average score was higher than sexually inexperienced (SExp *M* = -.67, *SD* = .77, NSExp *M* = -1.16, *SD* = .65). This difference was statistically significant (*p* = .003). Pregnant or parenting participants' average score was slightly higher than nonpregnant or nonparenting (PP *M* = -.67, *SD* = .64, NPP *M* = -.86, *SD* = .80). These differences were not statistically significant (*p* = .275).

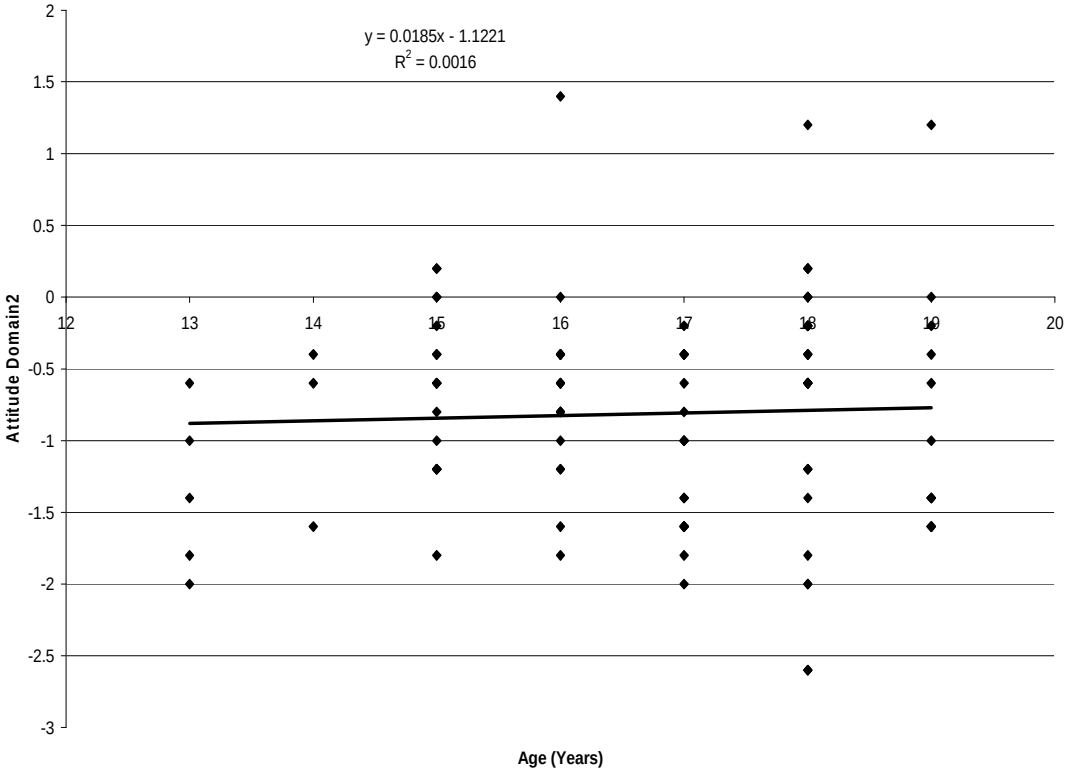


Figure 7. Scatter plot and linear regression of attitude domain 2.

Domain 3 was attitude toward the importance of birth control. The possible scores ranged from 2.6 (strongest belief in birth control use) to -1.4 (minimal belief in birth control use). The participants average score was 1.87 (*SD* = .75). Age is a questionable predictor of scores in domain 3 (*R2* = .0804, *p* = .004 see Figure 8). As similarly determined in domain 1, the low *p* value signifies that the responses tended to vary as age varied. However, in a review of the small *R2* and the scatter plot generated for this domain, the researcher is not able to confidently predict scores from this domain based on age. The researcher can report a tendency for variance in scores but cannot confidently predict a specific score for a given age. Seventh grade participants averaged the lowest

score (*M* = .47). There were no statistically significant differences between Black participants scores and all other races (Black *M* = 1.92, *SD* = .73, OR *M* = 1.73, *SD* = .80). There was no statistically significant difference between sexually experienced and sexually inexperienced participants' average scores (SExp *M* = 1.94, *SD* = .72, NSExp *M* = - 1.83, *SD* = .80, *p* = .172). Pregnant or parenting participants' average score differed from nonpregnant or nonparenting participants' (PP *M* = 2.04, *SD* = .65, NPP *M* = 1.81, *SD* = .78, *p* = .161). The difference between these two sets of averages was not statistically significant.

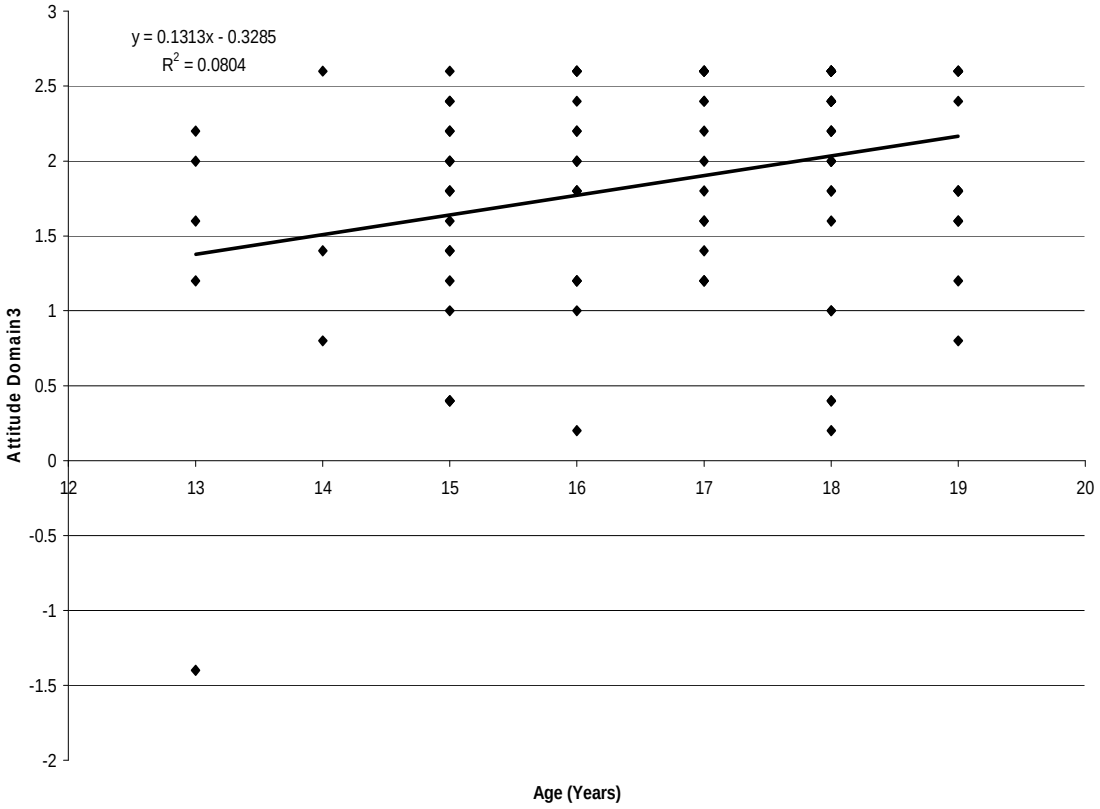


Figure 8. Scatter plot and linear regression of attitude domain 3.

Domain 4, attitude toward premarital sex, scores ranged from 2.6 (strong belief in abstinence until marriage) to -1.4 (strong acceptance of pre marital sex). The domain average for all participants was .52 (*SD* = 1.13). Linear regression analyses in consideration of age produced no significant patterns (*R2* = .0147, *p* = .225, see Figure 9). Eight grade participants produced the highest average score (*M* = 2.40) whereas post grad participants averaged the lowest score (*M* = .23). Black participants average score in this domain was lower than all other races (Black *M* = .38, *SD* = 1.05, OR *M* =.89, *SD* = 1.27). This difference was statistically significant (*p* = .044).

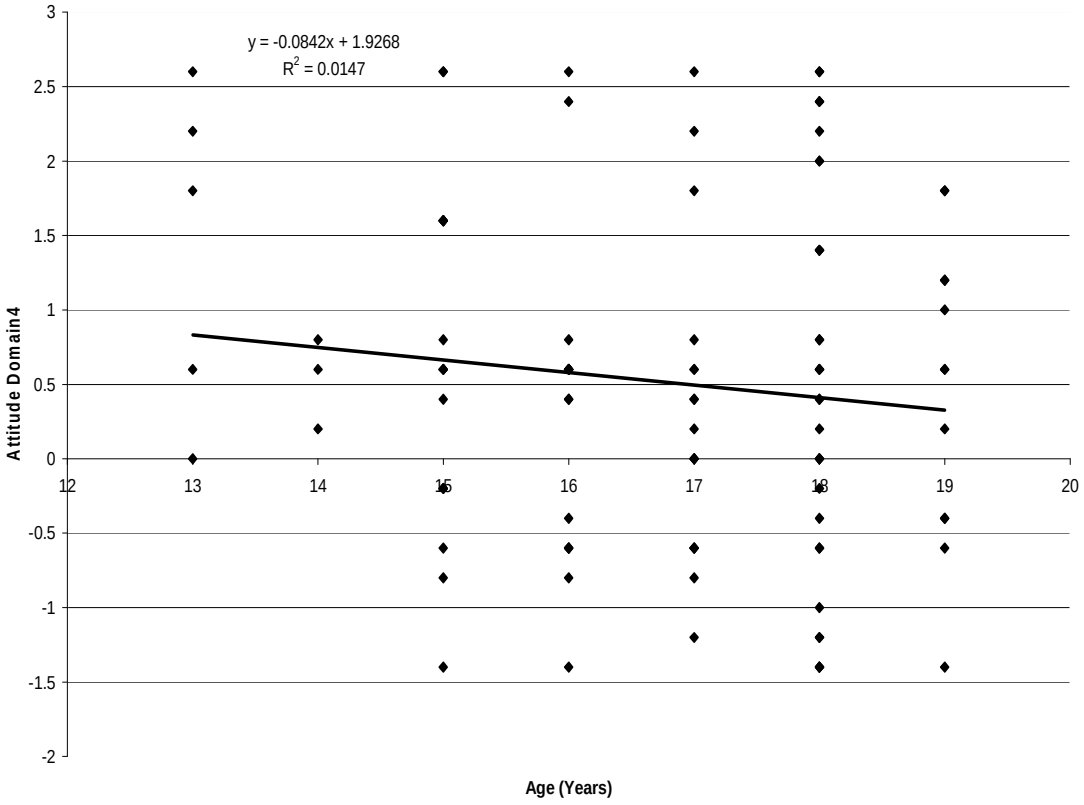


Figure 9. Scatter plot and linear regression of attitude domain 4.

Sexually experienced participants average score was lower than sexually inexperienced participants (SExp *M* = .14, *SD* = .94, NSExp *M* =1.43, *SD* = 1.06). This difference was statistically significant ($p < .001$). Pregnant or parenting participants' average score was lower than nonpregnant or nonparenting participants' scores (PP *M* = .03, *SD* = .81, NPP *M* = .69, *SD* = 1.18). This difference was statistically significant ($p = .008$).

Self-esteem. Hypothesis 3: There will be no statistically significant difference in the self-esteem scores of those in the pregnant or parenting group when compared to those in the nonpregnant or nonparenting group. The researcher used Rosenberg's (1965) Self- Esteem Scale (SESc) to assess self-esteem. Participants responded to statements on a 4-point Likert-type scale. Higher scores indicated higher self-esteem. The average score for all participants was 16.63 (*SD* = 3.46). Linear regression analyses in consideration of age produced no significant pattern (*R2* = .0156, *p* = .210, see Figure 10). Black participants' average score was higher than all other races (Black *M* = 16. 84, *SD* = 3.43, OR *M* = 16.04, *SD* = 3.09). This difference was not statistically significant (*p* =.303). Sexually experienced participants' average score was lower than non-sexually-experienced participants' scores (SExp *M* = 16.49, *SD* = 3.56, NSExp *M* = 16.73, *SD* = 3.52). This difference was not statistically significant (*p* =.748). Pregnant or parenting participants' average scores was higher than nonpregnant or nonparenting participants' scores (PP *M* = 16.96, *SD* = 3.45, NPP *M* = 16.50, *SD* = 3.47). This difference was not statistically significant (*p* = .559).

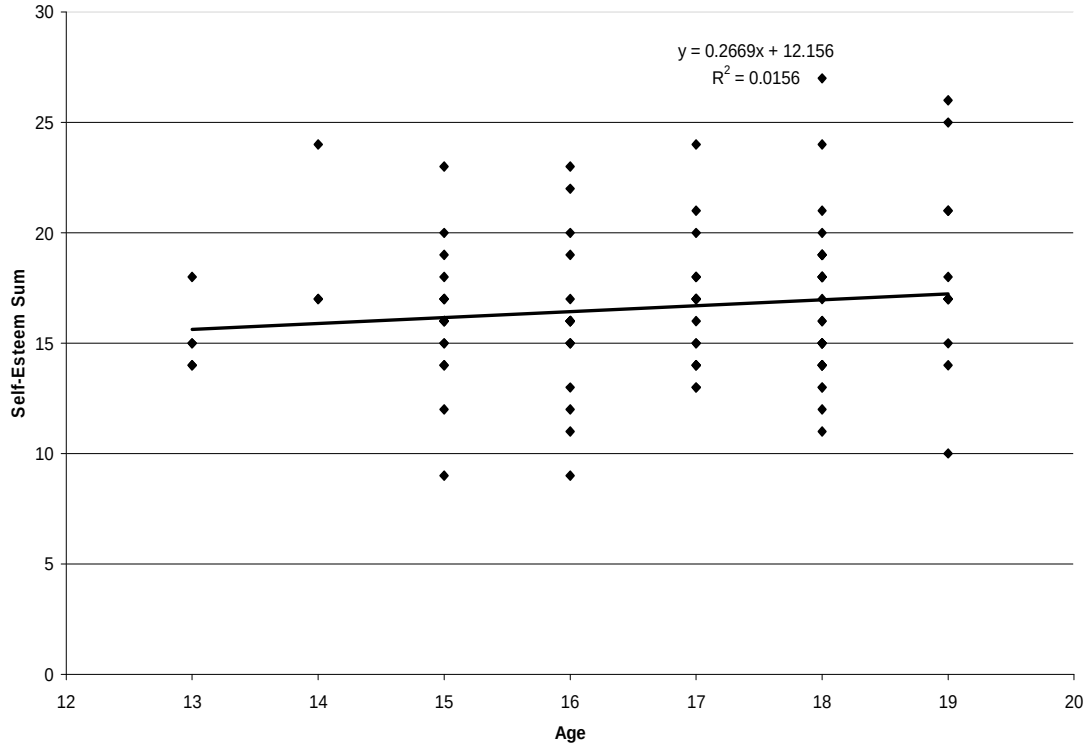


Figure 10. Scatter plot and linear regression of self-esteem.

Quantitative Data Summary

The assessment of knowledge and self-esteem revealed no significant differences between the primary grouping pregnant or parenting and nonpregnant or nonparenting. Significant differences were detected for attitude domains 1 and 4 for the primary grouping, indicating variance in beliefs relating to clarity of personal sexual values and the importance of birth control. Analysis of secondary groupings revealed significant differences among attitude domains 1, 2 and, 4 between sexually experienced and sexually inexperienced participants. Additionally, Black participants differed

significantly from all other races (combined) for attitude domain 4, indicating a stronger acceptance of premarital sex. The small sample size may have limited the ability to detect other significant differences between groups.

Qualitative Results

The purpose of the qualitative phase of the study was to assess perceived community opportunity structure in the target population in Vance County, North Carolina. Specifically, the data were collected in an effort to provide insight to three research questions: (a) how do pregnant or parenting, and nonpregnant or nonparenting adolescent females perceive the community opportunity structure in this rural area? (b) what is the impact of perceived community opportunity structure on adolescent intrapersonal constructs? and (c) what modalities do adolescents perceive as helpful in pregnancy prevention? The qualitative data were gathered through a series of four focus group discussion sessions. The convenience sample was recruited from participants of one of the schools' teen pregnancy support group and from that school population. This group was chosen because of the ease of access and adaptability of scheduling permitted by school administration for the purposes of this study. This group was also extended participation in the qualitative portion of the study. One focus group consisting of the same 11 females was convened on four separate occasions. Thirteen girls were recruited, resulting in an 85% response rate. The sessions were convened once a week for 20 minutes each over the course of 4 weeks. This schedule was most conducive to the school schedule. All 11 girls were present at each of the four sessions (100% participation rate).

One participant was aged 15, 3 were aged 16, 2 were aged 17, 4 were aged 18, and 1 was aged 19; the participants represented the target age group. All four high school grade levels were represented, with 1 participant in 9th grade, 1 participant in 10th grade, 4 participants in 11th grade, and 5 participants in 12th grade. The group was comprised of 3 pregnant, 6 parenting, and 2 nonpregnant participants. Ten participants were Black and 1 was biracial (Black and White). The participating school counselor (site coordinator) sat in on each session.

With permission of the participants, the conversations were recorded digitally and transcribed professionally. The transcription records were analyzed using open coding. The open coding process involved reviewing each question posed and generating keywords and phrases relative to the responses given. After this was completed, a series of preliminary themes were generated under each of the seven constructs evaluated. The researcher finalized main themes from preliminary themes. Discussion of these themes occurs concurrently throughout this section. A series of main questions guided the evaluation of each construct (Appendix G).

Perceived Community Opportunity Structure

Community opportunity structure is best described as a function of both educational and employment-related preparedness. Without consistent information regarding the social context of the community, adolescents are left to their own perception to determine the community's state of affairs. Therefore, in the eyes of an adolescent, the description of opportunity structure is perhaps best delivered in terms of one's perception or what one believes, from their experience, to be truth. The research

question under investigation in this section was: how do pregnant, parenting and nonpregnant adolescent females aged 13 to 19 perceive the community opportunity structure in this rural area? Four constructs were explored to guide the focus group discussion about community opportunity structure: (a) preparedness for higher education or trade school, (b) preparedness for employment, (c) community role models for youth, and (d) prepared for life outside of community.

Preparedness for collegiate education or trade school. The conversations began with an introduction to the day's topic and review of the ground rules for group discussions. Construct A (preparedness for higher education or trade school) was examined by three main questions. To determine how many participants planned attendance in college versus trade school, an initial probe question was posed. All 11 participants raised their hands that they would be attending college. Further questioning revealed that the participants consider "beauty school" or cosmetology classes as college level. Two participants reported that they hope to attend such an institution. The others, however, mentioned either community college or larger universities as their intended goal. When asked to describe the ways their high school experience has prepared them to start college or trade school, there was much discussion of in-class projects and teacher discussion of the relational aspects between high school and college. Most affirmed that teachers regularly discussed college emphasizing the level of responsibility required and giving them insight into the preparation needed.

When asked how often their teachers discussed college, the participants had differing responses. All 5 of the seniors (12^{th} grade) reported that they regularly heard

teachers speak of college. They expressed how adults at school related the necessity for responsibility in high school with the responsibility of becoming a college student. One participant described her teachers' influence as a matter of projecting future expectations, saying teachers often mention "what is not going to be done" for students once they reach the college level. The college discussion, however, was not just from teacher to student but also among peers. One participant remarked that some of her friends wanted to go to college. She said, "most of the people I be around, like some of them want to go to college but some of them like they don't want to go to college because it's too hard and they don't want to work." Another participant noted that she heard college talk mostly from her parents and not her teachers at school.

The researcher asked the participants to describe the community's impact on their college aspirations. The operational definition of community was described when posing this question. Church and family were the main points of reference for community as described by the participants. It became clear that the participants looked up to those in their families with jobs to which they aspire (e.g., dental hygienist). Those individuals were described as focal points or the actualization of their hopes for the future. Their churches were portrayed as entities providing many opportunities for youths in the community to visit colleges and learn more about the collegiate process.

The themes associated with this construct were communication, relation of experiences, and planning. The participants reported that teachers, family, and church members regularly spoke with them about college and stressed the importance of understanding the responsibilities associated with higher learning. The participants

credited teachers with connecting the students' current responsibilities with those associated with a college career and credited families and churches with exposure to those atmospheres and encouragement toward the goal of completion.

Preparedness for employment. The discussion for construct B (preparedness for employment) was mediated by three main questions. The participants were first asked to describe the ways that teachers at school discuss preparing to get a job. The consensus was that there is no in-depth discussion of job preparation in the school setting. The girls stated that when job acquisition is discussed, it is not encouraged. In fact, it was reported by several participants that teachers actually discourage students from getting jobs while still in high school. For example one participant stated, "Usually when you tell them you got a job and they, like, they just ask you like do think you can handle school and working at the same time." When asked why teachers might discourage a student from getting a job, one participant explained that she presumed that most teachers doubt the students' ability to be able to handle school responsibilities along with a job schedule. Another noted that teachers emphasize the necessity of going to college to get a job. Others mentioned in-class job interview preparation or practice along with brief discussions of interview etiquette as job preparation. Overall, it appeared that teachers wanted to again relay the requirement of responsibility in these endeavors. When asked if the high school experience has prepared them to get a job outside of their community, one participant offered the following response:

> I do. Because, like, some teachers, they teach you, like they'll take late work or whatever, and they tell you how you're supposed to be like—like how you're supposed to do it or whatever It teaches you responsibility. So, if you can handle

> school, I think you can handle work. Because you got to be on time to come to school.

When asked to describe the type of jobs maintained by the adults with whom they have regular contact, the participants reported jobs like nursing, cosmetology, and child care provider. Since all of the participants reported they wanted to attend college, a follow-up question was asked requesting them to describe the types of jobs to which they aspire after completing college. The responses included psychiatrist, social worker, massage therapist, and teacher. Multiple girls responded that they wanted to become a dental hygienist or enter the nursing or child care fields.

The main theme resonating with construct B is relational responsibility. In describing how the community has prepared them for employment, the participants focused on the connections made with family members' jobs. These connections seemed valuable for them, serve as examples of what is available, and elicit high aspirations. Seeing close family members in these jobs may also serve to show the reality and responsibility associated with maintaining a job. Additionally, the participants shared that in providing job-like situations in school classrooms, teachers are trying to relay the responsibility associated with maintaining a job.

Community role models for youth. Construct C (Community role model for youth) was assessed with one main question. The participants were asked to think of someone they admire (or a role model) and then describe the type of interaction they have with these types of people in their community. The researcher provided a brief description of the term role model. Most participants relayed their admiration of family, specifically mothers or grandmothers. When asked why these people are role models, the general

response was that they considered these individuals to be resilient, hard working, encouraging, and supportive of them and their struggles. For others in the group, there was no identified relationship with role models. Accordingly, after posing this question, the researcher noted some participants shaking their heads negatively and making smacking sounds with their mouths. Noting their body language, the student asked the participants why they made these motions. One participant met the question with the response, “Because I don’t really have a role model.” Others cited strained family relationships. Since family is the part of the community with which they had the most contact, they had no role models. Family interaction was the driving theme forging relationships with identified role models. One participant stated:

> I’d say my great grandma was my role model. She told me never to put up with a man that disrespects me, that hits me and all that. And my mama because she always told me to push for what I believe in.

As most participants looked to their mothers and grandmothers for support, they found themselves admiring the mothers’ work ethic and resiliency.

Preparedness for life outside of community. Construct D (preparedness for life outside of community) explored the participants’ idea of isolationism and their preparedness to seek a lifestyle away from home or outside of their community. The participants were asked to describe their plans for after their high school graduation. Immediately there was a barrage of responses. This topic seemed to excite them and they spoke optimistically about their futures. Laughter filled the room as one participant exclaimed “I got to get away from here!” As every participant again affirmed her desire to attend college, there was talk of attending schools both near and away from home. The

researcher probed by asking if there was any fear in leaving Vance County. The participants unanimously and emphatically answered no and laughed again. The researcher followed up by saying that leaving sounded like something they wanted to do. The participants responded:

P1: Yes.

P2: I really don't want to raise my child here.

Q: Why?

P2: This is a bad place.

P3: There's nothing. There's really nothing here.

P4: I mean, I want my baby to have a better education than I had and a better life.

P5: I want to have more. I want just to have more than what Vance County offers. I mean, it's not a bad I place to live, I wouldn't say, but they don't have a lot.

The participants went on to comment that Vance County is lacking in job opportunities and this is why they desire to start their adult lives elsewhere. They also implied that the level of adolescent delinquency can be accounted to the lack of job opportunities. In one participant's words (elaborating about the lack of opportunities), "There's nowhere to go and nothing to do." Accordingly, when asked to describe what their experience would be like if they were to leave, the main response had a hopeful tone. They were realistic, however. They realized the challenges facing them as young mothers and recognized the need to have some type of support. Family and the safety of

proximity clearly weigh heavily on their minds. Despite their jubilance at the thought of leaving home, the participants seemed to be realistic about the world that awaits them. For example:

P1: I think it's going to be hard because, like, if I take my child with me, she is like—she is close to her other side of the family, and it's going to hard for her too

P2: I think it'd be hard because I'd get homesick. I'm close to all my family. We're real close. So, with me leaving, and then having a baby, too, I think it would be much harder for me, but it's something I got to do.

P3: I have mixed feelings because I like staying with my mama but I don't want to stay with her forever: I have mixed feelings because I like staying with my mama but I don't want to stay with her forever And I'm older, so she kind of like feel like she wants me to stay with her but at the same time leave. And I think if I leave I'll be calling her more, you know, if I want to come home.

Themes of higher education and motherhood highlighted their future tasks. As all of the participants expressed a desire to attend college, they also recognized that their job as mothers would provide an equal challenge to the completion of higher education. The thought of moving away from their families and leaving that support system behind served as a sobering reminder of the potential difficulty associated with managing the two tasks.

Community acceptance of adolescent pregnancy. Construct E (community acceptance of adolescent pregnancy) was assessed by asking four guiding questions, all of which asked the participants to reflect upon the responses to their pregnancies from various people. The participants explained their experiences when they told their parents they were pregnant. Most of them relayed tense moments before and after the revelation of pregnancy and the notion that their parents scorned them for making a mistake. One participant even explained that she was thrown out of the house for a period of time. For these participants, however, came moments of acceptance after their parents got over the initial disappointment. One participant noted,

> My parents, they were okay with it. My dad, he asked me what did I want to do, did I want to have an abortion or was I going to keep it. And my mom, she, it wasn't not discussion with her. I did it, so I had to keep it. And when I told them, I didn't really. I told my dad because I'm more closer to my dad than my mama. . .the pregnancy test on the counter [LAUGHTER]. But it came out, everything worked out.

According to the participants, their parents agreed to help them with their babies and wanted them to complete school. Elaborating on "help", they described general support and some financial assistance. In relaying these feelings, the participants noted that their parents were mainly disappointed because they wanted more for them. It was clear that although the general parent reaction was that of disappointment, the parents seemed to be firm in their desire to see their child through the situation. As one participant explained,

> My mama just didn't know what to say. She didn't talk to me for a little while, but she got over it. And then she talked to me, and she was like, well, I'm grown now, but still she didn't want that for me. But she said I could still do, like go to school or whatever. She just didn't want me to drop out of school, which I didn't plan on.

The researcher asked the 2 participants that were not pregnant or parenting to discuss how they think their family would respond to them becoming pregnant. One girl responded,

> I think it would be shock, if it was me, like extreme shock. But the way my family is, they're really close. And my aunt was a teen, like she was only 15. And like a lot of my family had their children at least—I would say a lot, a couple in my family had children young. And my family is really close, so I think, regardless, they would be there, and they would tell me to keep it. And just they would help out much, so I could do school and keep doing what I want to do, like education-wise and whatnot. So I'm sure it would be shocking, but I'm sure they would be there for me.

As both described the notion of shock and dramatic disapproval, they rounded out their comments, speculating their parents' acceptance and "being there" for them.

The participants described friends being accepting of their pregnancies or "okay with it" while offering strong opinions in the process. For example, one participant said some of her friends told her not to have the baby. Another participant, who had only been living in Vance County for a few years, pointed out an interesting distinction between the reactions of her friends in her hometown versus her friends in Vance County. She stated that there was a greater level of disbelief and disappointment in her hometown, compared to Vance County. She described her friends in Vance County as excited for her. She shared,

> I'd say people in Vance County, around here, like it used to it's not like a big thing to be pregnant But, like, if you go somewhere else—because I've been somewhere else. And telling somebody I was from Vance County, and it was like in Wake County. They was like, "Y'all full of pregnant girls and stuff like that." So, if they look on it like Vance County and all that because they full of, you know, the highest rate of pregnant teens and the highest rate of AIDS or whatever. That's what they think or whatever.

The participants also had strong opinions about how those in the community and in their neighborhoods responded to their pregnancy. According to the participants, the community has a general downtrodden view of pregnant teen girls. Terms like “high school drop out”, “babies having babies”, and “messed up” were used to describe the way they had been spoken to by adults in the community and how they suspect other adults would react. The participants perceived that not only are there limited expectations of them, but the adults (outside of their families) look at them as “typical girls” in the area. As one participant put it, “In Vance County…like it used to, it’s not like a big thing to be pregnant. I think we are all pretty much used to seeing it.” Although the negative perception is apparent, the participants did not seem to harbor any anger towards the ones that speak poorly of them. In fact they seem to be motivated by this negative talk.

A description of the community’s response to pregnant teenagers has generated themes of low expectation and general disappointment. Most adults were described as typically expecting teen pregnancy to occur and markedly disappointed in response to it. As one participant put it, “So, like, when they see people get pregnant, ‘Oh, it’s babies having babies. They’re going to drop out of school. They’re not going to be anything’.” Peers were described as expecting pregnancies to occur but more accepting of their prevalence. This dichotomy between the adult and peer responses likely creates a manner of conflict among pregnant adolescents who, too, are struggling to make sense of this occurrence in their lives.

Summative effect of community on self. Construct F (summative effect of community on self) assessed the research question “What is the impact of perceived

opportunity structure on adolescent intrapersonal constructs"? Upon examining construct F, the issue of motivation was fully illuminated. When asked what impact the community has had on their future goals, the participants overwhelmingly responded that the community's negative reactions to their pregnancy has actually motivated them to be successful. This was a highly unanticipated response. One participant offered, "If we listen to what everyone else says, it makes us feel like we can't do nothing and we won't be anything But we have to go and prove to them that we will be okay."

Essentially, the community perception of pregnant adolescents as lazy and low-achieving works as a nontypical form of reverse psychology. The fact that they have been told by some that they will not amount to anything fuels them to try to have the best life possible. This motivation is also a function of being a parent and wanting a better life for their children. As one participant noted, "You want to have more than what's around…you don't want your child to go through what you had to go through, you want to do better and get to better places." The nonpregnant participants noted that the demeaning dialogue is not always limited to the adolescents that are pregnant. They describe the need to prove people wrong and "be better" than what others (both adults and peers) perceive of them.

The participants have a strong sense of what they are capable of doing. Construct F also explored the ideas of self-esteem and decision making. When asked about their self-esteem and how it has fared in light of their perceptions of community's view of them, some reported that the down talk from the community is painful. They explained that the name calling and low expectations are difficult to handle, especially as a

teenager. One participant noted, however, that there is a certain resiliency that can come from low expectations. As she put it, if the teen mothers listened to what everyone says and believed it, it would be easier to feel like they cannot do or be anything. There is a connection, however, between these low expectations, their belief in themselves, and their desire to achieve more than expected. The prospect of denying the affirmation of what the community believes about them motivated these adolescents.

In discussing their community, the participants were very confident in their opinions of what is taking place. One of the questions that received the most responses from the group as a whole asked them to explain how the community has affected their attitudes towards sex. Overwhelmingly, the participants described perceptions of teenage sex acceptance and even expectancy. The belief is that most, if not all, teens in their communities are sexually active. Moreover, it is a regularly discussed topic among their peers. Whether or not the talk among peers is truthful is yet to be determined. For example, 1 participant noted,

> And you know how you talk to some of your friends, most people lie about it, like especially when you're like younger and you talk about it. And maybe one of your friends has done it before, and you want to have an interesting story to tell, too. So most people exaggerate, and they think when they lie about it they feel like they have to do it or whatever.

One participant alluded to the fact that teens lie so that they will not be the only virgin in their group of friends. In fact, she said she did this for a while to not be left behind. She shared,

> There was a whole lot of times where like we would be discussing sex like every time because my friends would say they are having sex, there was a whole lot of times I lied It was like I'm not a virgin because I'm ashamed to say I was a virgin.

Among teenagers in the community, perceptions form through sex-themed conversations that everyone (teenagers) is having sex. Although there is no evidence of what percentage of teens in their community are actually sexually active, the participants believe this perception of sexual promiscuity to be more fact than fiction. When asked if this perception led to their sexual activity, the girls commented that it partially did. The other motivating factor was curiosity.

As talk of their experiences continued, the conversation shifted into a discussion of how each of them became pregnant. In a very methodic manner, each pregnant or parenting participant shared how it happened. Most began with a vision into their own lives at the time they started having sex. One participant shared that her mother had just died and she was very angry with everyone. Another told a story about sitting around the living room discussing sex openly with her parents. A few of the participants mentioned that they started having sex "at a young age;" however, none of them were willing to say that age aloud.

None of the adolescents planned their pregnancy. In fact, most of them used phrases like "It just happened," "I just messed up one time," or "I just turned up pregnant" to describe the circumstances under which the pregnancy took place. In hearing these responses, the researcher was compelled to ask the participants if they knew how a female actually became pregnant. Posing this question was important because it initially sounded like the participants were unaware of how pregnancy occurred. The

participants responded that they were fully aware of how pregnancies occurred. They proceeded to explain that their mothers, fathers, and grandparents (and guardians) had all had talks with them about sex. A participant shared,

> Because my parents told me, it was like if you start having sex, there's nothing to be ashamed of, just come to me and let me know so that I can—I'll show you how to use a condom, I'll show you how to—with birth control you need. You know, I'll show you anything you want to know. Just tell me, so I can prevent you from being pregnant. And I was so ashamed and embarrassed that when I got 18 [ph] then I started having sex, I was telling them I won't from all those years. So when I started having sex I was scared to tell them that I was having sex.

If the parents and guardians made sincere efforts to address the use of birth control and sexual intercourse, one could assume these would serve as protective factors against pregnancy. The girls' lapse in judgment warranted further investigation.

To discern what participants thought they knew about sex and the truth of what could really happen, the researcher asked if once they started having sex if they really believed there was a chance they could get pregnant. The answer was a resounding no. Summing up the separation between a true understanding of the consequences of unprotected sex and the participants' judgment at the time of intercourse, one participant stated, "I always told myself, you now, this can't happen to me." Another participant affirmed this same sentiment, adding that if someone had told her parenting was this hard, she would have been more careful. She went on to say she thought she was ready to have sex and just knew she would not become pregnant. The participants were out of touch, in some sense, with the realistic consequences of unprotected sex. The affirmation of this fact is that in all of the talk of accidentally becoming pregnant, not one participant

mentioned the risk of HIV, AIDS, or sexually transmitted disease associated with unprotected sex.

Thematically, the participants seemed overwhelmingly motivated by the community's low expectations of them. While noting that the persistent nature of the demeaning dialogue should affect their self-esteem negatively, the participants chose not to let the negative connotations affect what they believe they can accomplish. This is an extremely critical concept since the literature is unclear how and if sexual activity and pregnancy affects self-esteem. In describing the community's impact on their attitudes toward sex, the theme is again acceptance or expectation. Specifically, the participants and their peers were accepting of teenage sex at the time of their pregnancies. Moreover, they believed most every teenager to be sexually active. Regular talk among peers and encouragement to use birth control from adults were associated with acceptance of teenage sexual activity.

Unfortunately, this level of acceptance is not met with an equally high level of risk perception toward pregnancy. Nonperceived risk was a prominent theme when asked about decisions to have sex. Although the participants reported hearing about sex and birth control from mostly family and friend sources, none really believed they could become pregnant. Overall, the summative effect can be best described from one of the participants. She shared, "Living here, like in this community, it's told to be okay. It's okay to have a baby." Living with the notion that "it's okay" has left many young people to their own misguided judgment when it comes to early sex and its consequences.

Sex education knowledge and modalities. The final research question assessed was "What modalities do adolescents perceive as helpful in pregnancy prevention?" The final aspects of the conversations assessed construct G (sex education knowledge and modalities). It was critically evident to the researcher at this point in the conversations that the girls did not perceive the full susceptibility of their actions and the outcome of pregnancy. In many ways these types of mistakes can be partially attributed to a lack of knowledge. It was not surprising to hear that the participants had never had any lessons or lectures in school on pregnancy prevention or teen sexual health. They were emphatic about their concern for this problem. One girl noted,

> And right now they don't even promote safe sex anymore. They promote abstinence. So, I think that is not a good thing because, especially in Vance County, with the high pregnancy rate and the high STD rate, I think they should be promoting safe sex instead of no sex because everybody—not everybody, most people are having sex.

The remainder of the participants stated that their school experience lacked sex education. They said that they hear their teachers briefly remind students to remain abstinent but there are no extensive conversations. One participant mentioned that her classmates have brought up the subject in class. Their teacher replied that classroom conversations would not pertain to sex. It became evident that the participants felt that adults should take a more active role in the prevention process. As they explained, this would start with the acknowledgement that teens are having sex and that the abstinence discussion does not work for everyone. They felt that the abstinence message was worthwhile, but not for those teens already having sex. One participant noted, "My thing

is teach abstinence, or whatever, but for those who are having sex, what about them What about the ones having sex? What are you going to do about them?"

Despite the outcome that befell them, the adolescents presented hopeful demeanors and an eagerness to see changes in Vance County. When asked where sex education programs should take place, the participants generally replied everywhere. They acknowledged the need for a structured sex education class at school. One participant suggested that the class be mandatory and that all students pass it to graduate. They also spoke of the need for more programs in the community. Perhaps the most inspiring part of the conversations came at the end when several of the participants suggested that the most powerful educational message could come from them. As 1 participant shared,

> I think, like, if they see, if we tell them like the struggle, how hard it is, really how hard it is, or what we got to go through, and really like tell them. They don't want to have to get up at six o'clock, come to school, go home, take care of baby, do homework, eat late and all that. They wouldn't. And never keep money, and they won't be able to do what they want to do most of the time. Like, if we tell them, and like they don't really know, they really wouldn't want to do it.

The lack of sex education available to youths in the school became a resounding theme. Sex education was highly advocated. Specifically, the participants encouraged more talk about contraception and less talk about abstinence in schools. Additionally, they advocated peer-mediated talk as a means of education. They felt this manner of education would have the most impact in relaying the serious nature of pregnancy as a consequence of sexual activity.

Qualitative Data Summary

The qualitative results indicate a profound understanding on the part of the participants of the opportunity structure in their community. Their perceptions of poor educational and job related opportunities correspond with the current data available relative to this aspect of their community. The participants expressed the limitations awaiting them on the job front, and minimal to average amount of higher education and job preparation experiences in school. When asked how this opportunity structure affected them personally, they noted perceived limitations within the community. Specifically, they spoke of how these limitations have fueled their desires to move away and start their adult lives elsewhere. This thought process was not without an undertone of hesitancy as they recognized the realness of the challenges facing them as teenage mothers. The participants also confirmed a "low expectations" mentality present among many adults toward youth. While their families and friends were generally accepting of their pregnancies, the participants noted that many in the community looked down on them and expected them to fail.

The evaluation of the summative effect of this opportunity structure on constructs relating to self revealed atypical responses. In dealing with the ridicule and negative dialogue from adults, the participants have actually become more resilient. Discussions of self-esteem exposed a novel motivation partially inspired by this negativity and reaffirmed by the opportunities currently unavailable where they live. Their goals are set

high and their young lives are focused on providing a better life for them and their children.

While they have been able to buffer themselves from some manners of community influence, other aspects hold greater bearing in their lives. The participants described an atmosphere of acceptance and expectance of teenage sex and subsequent pregnancies. They implied that such norms have led to rampant teen sexual activity and contributed to their own risky sexual behavior. The participants expressed these decisions as monumental errors in judgment that were taken absent of a real understanding of the risks they were confronting. Despite their circumstances, they are eager to reach out to their peers, and discuss the importance of safe sex. Even in their youth, they understand the critical importance of sex education and question whole-heartedly the absence of it in their educational system.

Summary

In consideration of the quantitative and qualitative data sets together, it is clear that participants noted the conspicuous lack of sex education and survey data revealed poor sexual health knowledge levels. Therefore, the limitations of the current educational opportunity structure are accurately perceived and personally experienced. Additionally, the participants described community-based attitudes accepting of teen sex. This was affirmed by analyses of attitudes as pregnant or parenting participants reflected a stronger acceptance of premarital sex and clearer affirmation of how their sex-related decisions are made. Additionally, participants that were sexually experienced presented more affirmed attitudes toward the role of sex in their lives, their acceptance of birth control,

and sex-related decision making. Quantitative analyses also revealed that pregnant or parenting status had no bearing on self-esteem. The self-esteem scores may coincide with the revelation of the lack of effect the community has on pregnant or parenting adolescents' personal belief of their capabilities. Chapter 5 reviews these results and emphasizes the need for comprehensive sex education, in-depth analysis of the population, and collaborative programming efforts across the community. Social change is discussed, with emphasis on the importance of adhering to existing school health policies, revising adolescent normative beliefs about early sex, and support for the adolescent mother.

CHAPTER 5:

SUMMARY, CONCLUSION, AND RECOMMENDATIONS

Summary

The purpose of this study was to explore the intrapersonal and community-related factors associated with adolescent pregnancy in a rural area. The quantitative data were collected in a survey of 102 adolescent females across eight sites in Vance County, North Carolina. The qualitative data were collected through a series of focus group discussions with 11 adolescent females in a school setting.

Analysis of the quantitative data revealed no significant differences between pregnant or parenting and nonpregnant or nonparenting participants' sexual health knowledge. Therefore null hypothesis 1 was not rejected. Assessment of attitudes revealed significant differences in the scores between the two aforementioned groups in attitude domain 1, clarity of personal sexual values. Therefore, for attitude domain 1, null hypothesis 2 was rejected. The data revealed significant differences between the groups in attitude domain 4, attitude toward premarital sex. Therefore, for attitude domain 4, null hypothesis 2 was rejected. The alternative hypothesis 2 stated that there would be statistically significant differences in the attitude scores between the pregnant or parenting and nonpregnant or nonparenting groups.

Based on the data, the null hypothesis 2 for attitude domains 2 and 3, attitude toward sexuality in life and attitude toward the importance of birth control, was not rejected. Self-esteem scores did not differ significantly between the two groups. Therefore, the null hypothesis 3 was not rejected.

The researcher made every effort to secure the proper number of participants and minimize the chance of error. The sample size (N = 102) observed was smaller than the calculated requirement of 185 participants (based on the estimated population size of 3,249 15- to 19-year-olds). The small participant number was due to a variety of constraints, including limited ability to secure parental consent and federal restrictions related to minor participation and consent in survey research. The small sample size increases the chance of a type II error and may have reduced the chance of noting difference between groups.

To determine the appropriateness of the observed sample size, the researcher calculated confidence intervals for individual means (for primary groupings only) for each variable assessed quantitatively (see Appendix H). The appropriateness of the confidence intervals was determined per variable. This determination was a critical issue in examining the data from a small sample size because the researcher was left to decide if the difference between the means was meaningful for this study. The confidence intervals calculated for both knowledge and self-esteem means (scores) were determined to be small enough to detect any difference between the primary groupings. Confidence intervals for each attitude domain were consistently large, thereby increasing the chance that a real difference between groups was not detected. Accordingly, a larger sample size could have helped detect these differences. While in many cases a small sample size may not be suitable, in this population the sample size obtained represented a best effort at providing a sound start to assessing a population from which data has never been

collected. Moreover, the qualitative data presented are complementary and serve as reinforcement for many of the patterns observed in the quantitative analysis.

Analysis of the qualitative data revealed very low perceptions of the opportunity structure in Vance County. Overall, the participants felt minimally prepared by their school to enroll in higher education or begin a job after high school graduation. There was a large dependency on family as role models and church in terms of positive community support. The participants rejected the notion of community isolationism reporting a strong desire to seek a life outside of the community to forge better futures for themselves and their children. These desires were realistic, however, as the participants acknowledged their fears of leaving home and the challenges that faced them as young parents without immediate family support.

The participants reported an overwhelming attitude of acceptance and expectancy of adolescent pregnancy in their community. Their friends and families, while highly concerned, were generally accepting of their pregnancies and offered regular support. However, the participants described nonfamilial adults' reactions as demeaning because they ridiculed adolescent mothers while expressing their disdain for those in this situation. Connections were made between the experience of this demeaning dialogue and self-esteem. In contradiction to conventional thinking, demeaning dialogue motivated the participants as opposed to diminishing their self-esteem. Their desire to be successful is fueled by a strong desire to prove wrong those that expect them to fail.

Whether or not the connotations expressed by adults resonate, it is evident that peer influence may have some bearing on the sexual decision making process. The

participants revealed that most of their peers regularly discuss sex and imply that they are sexually active. As explained, this attitude of "everyone's doing it" is a normative belief throughout the community and may place undue pressure on adolescents to have sex. As many participants described, the concept of nonrisk preceded their decisions to have unprotected sex. They never expected to become pregnant nor experience any of the other consequences of unprotected sex.

While realistic about their potentially difficult circumstances, the participants are hopeful for their futures and passionate about seeing changes where they live. Specifically, as the participants acknowledged a lack of sex education available in the school setting, they believed themselves to be the catalysts for change on this front. They desired to share their stories and the project the realism of being a teen parent with others their age with hopes of changing the way their peers think about becoming pregnant.

Demographic and Group Trends

One of the most concerning trends noted in this study was the differences between Black participants and all other races across several measures. For example, more than two thirds of the participants (of which three-fourths were Black) classified themselves as sexually experienced. Compounding this statistic, the average age of first intercourse for Black participants was 14.69 years. This was lower than all other races assessed in this study and lower than the national Black female average of 15.8 years (KFF, 2004). National and state trends show higher pregnancy among Black adolescent females with rates of 134 and 87.1 per 1,000 respectively (Alan Guttmacher Institute, 2006, NCSCHS,

2008). Within Vance County, the pregnancy is 129.2 per 1,000 for the Blacks whereas it is 93.3 per 1,000 for Whites (NCSCHS, 2008).

While the adolescent pregnancy problem in Vance County should be addressed without emphasis to race first, it will be essential to delineate the differences between these rates among the races in the near future. Conventional assessments of the interaction of socioeconomic status and pregnancy in minority communities represent the overwhelming thematic rule in the literature. However, as Vance County moves forward, attention must be paid to other issues facing young minorities that also interact with pregnancy incidence or sexual risk taking. Corresponding issues that sometimes disproportionately affect minority populations and may impact pregnancy incidence include substance abuse, access to health care, and social norms supporting teenage sexual activity (Berry, Shillington, Peak, & Hohman, 2000). Identification of these factors will require a commitment to large-scale assessment of the youth of the county.

Vance County health officials must determine the best course of action while battling the typical economic limitations often experienced in rural areas. One way to address this issue is through collaboration, which is a cost effective way to improve the impact of a health program or assessment procedure. Collaborative efforts between schools and communities (Barnes & Harrod, 1993) and between school systems (Weed, Ericksen, Lewis, Grant, & Wibberly, 2008) have shown to be effective in identifying and modifying factors associated with early or risky sexual activity among teenagers. The organizations participating in this study represent a great starting point for a collaborative effort that has the potential to influence the entire county.

Intrapersonal Factors

Knowledge. The results of this study revealed no significant difference in the sexual health knowledge scores between pregnant or parenting and nonpregnant or nonparenting adolescent women in the observed rural area. Data analysis revealed low scores and no significant differences among secondary groupings including Black and all other races or sexually experienced or sexually inexperienced participants. This finding is consistent with current research (Bazargan & West, 2006), as it fails to affirm a consistent relationship between knowledge and pregnancy incidence in adolescents. Low or modest knowledge scores have been associated with poor pregnancy prevention skills (Carter & Spear, 2002), while a higher level of sexual health knowledge is one factor that suggests why a teen may choose not to have sex (Blinn-Pike, 1999). The qualitative data affirm minimal exposure to sex education content in schools and no supplemental content available in the community. Therefore, it is not unexpected that the knowledge scores would be low and the subsequent level of risk behavior relating to it may continue to be high.

Triangulation of knowledge data. Of great concern is the existing relationship not examined in this study between knowledge and sexual risk behavior. Research supports the notion that low knowledge is associated with higher rates of sexual risk behavior (Wang, Wang & Hsu, 2003). In consideration of the lack of perceived risk of pregnancy attested to in the qualitative focus group discussions, poor knowledge scores assert a potentially serious problem exacerbated by sexual risk behavior in this rural area. The risk of early pregnancy will remain high in this population unless health officials take

purposeful measures to improve sexual health knowledge. Knowledge improvements could forge new realities of perceived risk or facilitate other self-protecting skills that curb such risk behavior. Successful interventions toward the improvement of sexual health knowledge in rural areas include the infusion of technology; for example computer-based learning (Roberto, Zimmerman, Carlyle, & Abner, 2007) and combined classroom lessons and experiences with simulated babies (Didion & Gatzke, 2004).

Attitudes. Four attitude domains were assessed in this population. Two domains, clarity of personal sexual values and attitude toward premarital sex, produced significant differences between the pregnant or parenting and nonpregnant or nonparenting groups. In reviewing clarity of personal sexual values, the pregnant or parenting group average score was higher, indicating a higher level of assuredness about which values and beliefs mediate their sexual health decisions. This higher score also indicates a certain level of independence in decision making related to sex. It is difficult to say if this difference is due to a true difference in attitude or the slight age difference between the groups. Pregnant or parenting adolescents' attitudes toward premarital sex were also significantly more favorable. Current data support the idea that attitude(s) can be predictive of toward future sexual behavior (Masters, Beadnell, Morrison, Hoppe, & Gillmore, 2008).

Triangulation of attitude data. Attitudes can be highly situational and are influenced by several factors including knowledge, normative beliefs, and intentions. Previous studies posited that attitudes and normative beliefs may forecast an adolescent's intentions to have sex (Fisher, Fisher, & Rye, 1995: Gillmore et. al., 2002). If intentions predict behavior as theorized by the theory of reasoned action and the theory of planned

behavior, then it is likely that favorable attitudes toward premarital sex as observed in this population infer the intentions and possibly future behavior of these teenagers. This thought process may only hold true if these teens have always held such attitudes. However, the participants also reported normative beliefs accepting of adolescent sex within their peer social groups. The culmination of these favorable attitudes and expectant normative beliefs may lead to early sexual behavior in this population. Connolly, Furman, and Konarski (2000) expressed the importance of examining social contexts (e.g., peer-related normative beliefs) when reviewing the incidence of early sex in adolescents.

Although assessment of domains 2 (attitude toward sexuality in life) and 3 (attitude toward birth control) did not produce significant differences between pregnant or parenting and nonpregnant or nonparenting groups, the average scores warrant further consideration. The average score of all participants in domain 2 revealed “neutral” attitudes toward sexual relationships. Therefore, participants may be uncertain as to the positive or negative influence that sexual relationships have in their lives. Additionally, average scores in domain 3 imply strong beliefs in birth control. Therefore, in consideration of the data set from domains 2 and 3, the possibility exists that some adolescents would be tentative in initiating sex and if they did, they would take precautions to prevent pregnancy. While this set of assumptions may be true for some adolescent women in the Vance County, clearly there is a significant enough portion for which this may not be true.

Accordingly, future assessments and programs in the county must begin to sort out the missing link between intention and action. One argument made consistently in the literature is that when health behaviors are concerned, knowledge or educational efforts help forge the intention to action relationship (Glanz & Rimer, 2005). In this population, it will be imperative to address the aspect of perception of risk in educational efforts. As asserted in the qualitative data, the understanding of risk associated with unprotected sex is somewhat unclear and may prove to be an essential issue towards errant behavior.

Self-esteem. The assessment of self-esteem revealed no significant differences between pregnant or parenting and nonpregnant or nonparenting participants. Previous reviews of the self-esteem construct confirmed findings denoting self-esteem as a nonsignificant factor in pregnancy incidence (Salazar et al., 2005). Overall, it remains unclear the level of influence self-esteem has on the sexual behaviors of adolescents. Current data available do not support the relationships between preexisting self-esteem scores and the initiation of coitus nor is it clear that low self-esteem scores would mediate sexual initiation more frequently than high self-esteem scores (Salazar et al., 2005; Spencer et al., 2002). Overall, the construct of self-esteem and its relationship to pregnancy is likely best studied indirectly or in tandem with other factors that may be of significance on a per sample basis.

Triangulation of self-esteem data. Likely the most unexpected revelation from the qualitative data was the acknowledgement of no reduction in self-esteem among pregnant or parenting participants due to demeaning dialogue or scorning received from parents and other adults upon becoming pregnant. The participants also reported an increase in

self-efficacy and corresponding beliefs of what felt they could achieve because of feeling motivated by those who scolded them. While the quantitative data support average self-esteem scores (neither high nor low), the researcher recognizes that the adolescent years do not necessarily represent a calamity in self-assurance. Self-esteem is influential on some levels but may not represent the deciding factor in how a young woman perceives her capabilities. As Spencer et al. (2002) expressed, it is not uncommon for adolescent women to find support or opposition for self-esteem in a variety of sources. Therefore, while average scores may indicate a standard adolescent disposition, the representation of the adolescent's beliefs relating to self-efficacy may prove equally as powerful.

Opportunity Structure

Opportunity structure and its convoluted impact in the life of a young person require an attentive eye but an open mind. The participants described their community and its educational and job-related structures as dismal at best. Statistics confirm these notions as this county suffers from both high unemployment and high rates of truancy from school. Social scientists suggest the next logical step in an environment such as this is to engage isolationism (Wilson, 1996). Discourse on youth that grow up in socioeconomically challenged areas supposes that not only is the child a victim of such circumstances but doomed to unintentionally perpetuate the normative beliefs that facilitate them (Luker, 1996). These discussions present no options for youth and often disregard human ingenuity in the process.

The bright spot in this study was the acceptance of ownership over one's actions and the affirmation of self-determination to supersede the consequences. The participants

were adamant about being solely responsible for their sexual behavior and their subsequent pregnancies. Moreover, they were optimistically hopeful about their abilities to succeed in the face of imminent failure. Such levels of optimism forced the researcher to consider its destination. From an adult's standpoint, it is predictable to consider these ambitions commendable and then quickly lose sight of the objective of these aspirations. As one considers the social, economic, and normative constrains hindering any cause similar to adolescent parenthood, it becomes routine to minimize the individual. This minimization, while in some cases unintentional, is detrimental and is in itself a catalyst for the cyclical nature of dependency and other societal ills.

For that reason, those active in the teen pregnancy conversation must undertake the reconsideration of the self-determinant nature of the individual, especially when considering opportunity structures. The participants in this study are individuals contained within a community that is undeniably shaped to minimize their successes. In full recognition of this, the participants have become creative, optimistic, and more resilient perhaps in an attempt to protect themselves from these circumstances. While it may not uncommon to note these adaptations, it is less common to see the fullness of such changes manifested in long-term personal success. In other words, ambition rarely breaks the cycle. As illuminated by the young women in this study, the researcher posits that the breaking of this perpetual oppressive cycle begins with the revision of the acceptance of circumstantial power in one's life. Adolescent mothers living in poor rural areas are at a disadvantage but may be limited in their future endeavors only by how insignificantly they perceived their personal chance at success.

Conclusion and Social Change Implications

The collective nature of social change in concern for adolescent pregnancy is considerable especially when one examines the social consequences of the problem. There are numerous reports and volumes of research implicating the negative impact teen pregnancy has on child poverty, the welfare system, and our health care systems. These discussions have illuminated the long-term strain teenage pregnancy contributes to various aspects of society. Additionally, the problem is projected as perpetual in nature, embedded in a cyclical trap often experienced by only those of strained socioeconomic status. Moreover, the attempts to remedy or manage the problems exacerbated by errant adolescent sexual activity have proven to be less than effective.

Consequently, researchers and health educators have been left to determine how to manage a problem that is seemingly untamable and requires a large number of resources and significant financial support. These aspects can place considerable strain on small rural communities when considering socioeconomic constraints. The results of this study support social change by acknowledging need areas relating to adolescent pregnancy in the evaluated rural area. The purpose of this social change discussion is to illuminate critical issues limiting productivity to facilitate community-based changes toward the improved assessment and intervention processes relating to rural adolescent pregnancy.

The data from of this study exposed low levels of sexual health knowledge among the participants. Sexual health knowledge is an essential component toward affirming a strong health education curriculum in schools and providing skills needed for adolescents

to remain healthy. The North Carolina Department of Public Instruction (2008) has declared the importance of addressing some of the health needs of its students through public schools. The largest component of this effort is the implementation of the Healthful Living curriculum as a part of its standardized course of study. This curriculum focuses on the development of positive health behaviors and preventative skills designed to help students move into adulthood in a healthy manner (NCDPI, 2008). The recommended sex education aspect of this curriculum is abstinence until marriage. While the department allows each school district to determine the best curriculum for their student base, the standard in North Carolina is an abstinence-based curriculum (NCDPI, 2009).

The Vance County Board of Education and Vance County Schools adopted a Family Life Policy dedicated to emphasizing "the benefits of abstinence from sexual activity until marriage, including the prevention of pregnancy, STDs and AIDS" (Vance County School Board, 1996, p.5). While this content is supposed to be an integral part of the education program in the county, one must question this program's vitality and usefulness in the face of such a systemic sexual health problem. The data in this study suggest that low knowledge scores may exist due to a simple lack of instruction. As the participants noted, sexual health content has been absent from their high school education, and there are no supplemental or community based programs to make up this lack.

In the face of such deficiency, immediate education could forge increases in both knowledge and skills related to health preservation. The Vance County School Board and

Vance County Schools have dedicated themselves to considering "the varying moral, ethical, and religious beliefs of students and their families" in their choice of sex education programs (Vance County School Board, 1996, p. 5). Data from the North Carolina Parent Opinion Survey of Public School Sexuality Education (NCDHHS, 2003) confirm that 90.5% of parents agreed that sex education should be taught in public schools. Of those 90.5%, 98% felt that reproduction should be discussed and 80.8% believed that use of birth control was an acceptable topic. Approximately 91.2% of parents surveyed believe that abstinence until marriage is the most appropriate curriculum for public school (NCDHHS, 2003). This, perhaps, is an inference to the conservatism tradition in North Carolina.

The battle with religious and political ideology represents a continuing challenge for health educators when advocating sex education programming. In relaying the importance of appropriate sex education programs relevant to the population's needs, the health educator will have to be prepared to deliver a compromise that all parties (parent, school administrators, and county officials) can live with. To advance toward social change, these groups should review the use of a comprehensive sex education (CSE) curriculum. While abstinence-only advocates admonish the use of these programs, citing the potential to encourage promiscuity, contemporary CSE programs have been shown to not increase sexual activity while decreasing rates of risk behavior associated with pregnancy (Advocates for Youth, 2008). Moreover, in a population with elevated percentages of sexually active teens (such as Vance County), a CSE-based curricula may

address the needs of the sexually active population typically omitted in abstinence-based curricula discussions.

Contrary to popular opinion, effective CSE curricula include teaching abstinence, affirming skills toward preventing pregnancy and STI infection, while discussing topics on human development and relationships (Advocates for Youth, 2008). The adoption and coordinated dissemination of the information from a CSE curriculum will allow the school system to follow through more effectively on its commitment to the support the health and well-being of its students. School officials should commit to this objective. Health education specialists in the Vance County School System must begin to advocate for comprehensive curricula, expressing the needs of students while acknowledging school and community interests.

A second social change implication revolves around the importance of community-based programming. This study validates the need to consider the dynamic of rural life in the teen pregnancy conversation. Currently, there are no data to support that the adolescent pregnancy problem is less involved in rural areas (Skatrud, 2008). However, in typical conversations about the topic, urban communities are the focus of the extent of the problem and the target of major interventions. Subsequently, a gap has formed in contemporary literature reviewing the teenage pregnancy problem in rural communities. This gap minimizes the discussion of strategies of care for such an impactful problem. The North Carolina State Center for Health Statistics (2008) reported that Vance County has the highest rate of teen pregnancy in the state (113.7 per 1,000), and the rate is much higher than that of the two largest urban counties, Mecklenburg

(62.4 per 1,000) and Wake (43.6 per 1,000). These statistics alone note the importance and need of addressing the rural community's health problems as often and with the same amount of vigor as urban communities receive.

Responding to the rural community on a per community basis represents a best practice toward social change in response to this health issue. Health education specialists will have to determine not only the effectiveness of the existing pregnancy prevention programs for rural populations, but take into consideration barriers toward intervention specific to rural areas. These include, but are not limited to, weak or dated infrastructures (e.g. transportation and information), social isolation, constrained opportunity structures, and burdened financial budgets associated with health entities (Skatrud, 2008). Formative assessment will provide insight about the specific barriers facing rural populations. This information will be helpful when choosing existing programs or developing new ones to meet specific community needs. An increase in available educators would help address the impending problem of typically lower numbers of health professionals per capita in rural areas (National Rural Health Association, 2008). The combination of assessment and increased outreach though numbers will not only begin to define the problem on a per community basis but create a more intact health services infrastructure to address the problem.

The final social change implication determined from the data has to do with the recognition for a change in the fundamental manner in which adolescent pregnancy is discussed. It became clear to the researcher early in the focus group conversations that while the outside world has placed the title of "victim of circumstance" on so many of the

adolescents who become pregnant, this appraisal may be far from the truth. Contemporary descriptions of adolescent mothers typically describe a situation where less than favorable social circumstances facilitate errant behavior and subsequent ill fate of helpless victims. In other words, current discussions would have one believe that the residents of socioeconomically challenged communities are unknowingly at the will of their weakened opportunity structures, subject to its fallout, and in many ways unable to defend themselves against it. The end result, as it is often described, is a stagnant community lacking the knowledge and skills to help themselves when facing crippling and far-reaching health problems.

Luker (1996) described such a scenario. Luker's historical review of the "creation" of the teenage mother as both a pawn and scapegoat of modern society's ills is compelling. Luker is careful to argue the plight of the adolescent mother by asserting that she is a victim of a social circumstance (namely poverty) that will likely never allow her to seize any measure of success in her life. Luker asserted,

> Society seems to have become committed to increasing the rates of pregnancy among teens, especially among those who are poor and are most at risk. Affluent and successful women see real consequences to early pregnancy and thus have strong incentives to avoid it; but poor young women face greater obstacles, both internal and external. Cutting funding for public contraceptive clinics, imposing parental-consent requirements, and limiting access to abortion all increase the likelihood that a young woman will get pregnant and have a baby. The news is even grimmer when it comes to preventing or postponing childbearing among teenagers who are not highly motivated in the first place….we are realizing more clearly that the high rate of early childbearing is a measure of how bleak life is for young people living in poor communities and who have no obvious arenas for success (p.189).

Luker's (1996) argument is compelling but draws concern in its assumption of the helplessness of the poor. It is clear that the poor face many challenges stimulated by their socioeconomic struggles and constraints. However, to characterize this population's capacity to overcome their circumstances as minimal is unfair. When one considers adolescent mothers in this category, the assumption of inherent complacency becomes even less tolerable. Such assumptions require belief that one's current socioeconomic class is their providence and that circumstance dictates one's ultimate destiny.

Contrary to such consistent descriptions, the participants in Vance County are fully alert to their circumstances. The data support that these adolescent women understand the lack of job and educational opportunities in the community. The participants recognized the long-term disadvantages of ascribing to the standards of their community. In coming to this realization, the adolescents are not putting down their community; rather, they are accepting its limitations. This realization is typical of rural adolescents on the cusp of adulthood as many perceive greater opportunities away from home (Crockett, Shanahan, & Jackson-Newsome, 2000). In describing their community opportunity structure as strained, the participants in this study also acknowledged the need to remove themselves from their surroundings to have the opportunity for greater successes. The concept of isolationism, or the notion that many will remain in oppressed societies because oppression is all they know (typical in discussions of poor communities) is being rejected in this population. In speaking with the participants, it was easy to sense their resiliency and courage in the face of such a life-altering event as pregnancy. Clearly, the adolescent mothers do not fear breaking away from their

community; they looked forward to it and knew that the risk of leaving would be worth the opportunities that awaited them.

Facilitating social change within this discussion must include creating a more accurate description of the pregnant adolescent. This is best remedied by first including the adolescent in the pregnancy conversation. Schultz (2001) reminded those in public health and public policy to revise preconceived notions of adolescent mothers by having direct conversations with them and allowing them to define their futures in every aspect. This includes letting the adolescent mother determine what steps to take after giving birth and letting her determine what she wants to achieve as opposed to having it decided for her. As declared in the present study and confirmed in others (Schultz, 2001), most adolescent mothers naturally gravitate toward ambitious goals and hopes for their futures despite their current realities. This is an essential aspect toward redefining the conversation about adolescent pregnancy. Giving allowance to the adolescent mother to have her voice heard and identify her own path will facilitate empowerment through self-determination. This empowerment will help these adolescent mothers redefine the broken connotation of “failure” and realize their personal goals.

Overall, realization of social change for this population lies in understanding that poor sexual health knowledge, errant attitudes, and social normative beliefs about teenage sexual intercourse and assumption of the inadequacy of the pregnant adolescent are all contributive social factors to adolescent pregnancy. An adherence to policy and the ethical nature of public education (of which health education is one component), relating the maintenance of sexual health in adolescence to greater opportunities in adulthood,

and recognizing resiliency and encouraging self-sufficiency in pregnant adolescent are three strategies toward this realization. Engaging these strategies could reduce pregnancy incidence, decrease the strain health-related resources in rural areas, and improve long-term health-related outcomes for rural adolescent women.

Recommendations

Intrapersonal Factors

The SEM posits that assessment on any of its five levels will forge a better understanding toward recommendations for health promotion (McLeroy et al., 1988). Intrapersonal level factors are likely some of the simplest manners to revise behavior. The assessment of sexual health knowledge, sex-related attitudes, and self-esteem in this study revealed a significant need for a comprehensive sex education curriculum in Vance County. While no single curriculum may address all three of these factors together, modifications to existing sex education modalities can and should be made to meet the needs of the youth in this county. For Vance County authorities to choose the best curriculum, they should review programs previously used in similar rural populations. Implementing a program must include pre and postintervention evaluations of targeted influential factors toward determining program effectiveness.

One of the best ways to begin addressing adolescent pregnancy in this and other rural areas is through research. The next step for Vance County officials is to fill the lack- of-data gap with information on sexual risk behaviors. While risk behavior was not addressed in this study as an intrapersonal factor, it is a very important aspect of adolescent sexuality programming. Currently, there is little to no data that Vance County

entities can utilize to move forward productively with intervention efforts. This study provided some insight about the status of intrapersonal constructs and revealed a lack of risk perception toward unprotected sex in the qualitative component. Kirby (2007) identified risk behavior as a key factor in adolescent pregnancy incidence. Assessment relative to the types (e.g. lack of contraception, or concurrent drug or alcohol use) and frequencies of sexual risk behaviors will provide important insight about the adolescent population in Vance County. Most importantly, it will infer the best intervention programs for the population.

Community Factors

The SEM confirms the power of the community as an influence on an individual's health. For the community to address the adolescent pregnancy epidemic, a massive collaborative effort across multiple county entities should be formed. In working with the seven community collaborates in this study, it became apparent to the researcher that in many ways each collaborator's preventative efforts were somewhat isolated and perhaps had less impact. The collaborators focused on their populations and hoped for some positive effect. While this is admirable, it lacks the influence that a larger effort could forge. A multitiered collaborative effort would unify the county on a set of goals and objectives toward adolescent pregnancy reduction and could dramatically increase the chance of success of minimizing this extensive problem.

Sample Size and Conclusion Limitations

One of the main limitations in this study was the low response rate associated with the quantitative portion of the study. While several hundred surveys were

disseminated across multiple sites over the course of several weeks, the response from the community was low and somewhat unexplainable. Certain collaborators warned the researcher prior to the data collection process that surveys have a traditionally low response rate in the community. To counteract this barrier, the researcher asked for permission to use passive consent in the survey process specifically in the school setting. The school system was willing to accept the risk associated with this manner of consent but, due to federal policies regarding minor participation in research, this request was refused. While the researcher understands the necessity to protect vulnerable populations and made every effort in this study to do so, this policy created the greatest hindrance to gaining a larger sample size.

Consequently, it is a likely that the small sample size may have limited the detection of significant effects in some variables. For example, there was no difference in sexual health knowledge or self-esteem scores between primary or secondary groups observed. Additionally, among two domains of the attitude assessment, no differences were observed between groups. It is not appropriate to assume that a larger sample size would have led to the rejection of these variables' corresponding hypotheses. However, it is appropriate to assume that because of the small sample size, the observed results may not aptly describe the population. One constructive thought stemming from the sample size quandary is that there is now some data where data did not exist. Future evaluations must uncover a methodology that bypasses the barriers experienced by this researcher and allow for widespread assessment of this rural youth population.

Buchanan (2000) asserted that “modern maladies are primarily social in origin” (p. 47). Therefore, the incidence of many of the problems that public health officials attempt to “solve” often derives from the sociocultural and environmental influences experienced by the individual. While attentiveness to intrapersonal factors is important, moving forward in adolescent pregnancy research requires public health officials to acknowledge the environment as an active influence in health behavior decisions. Moreover, it is important to recognize the interrelationships between intrapersonal and environmental factors.

This study revealed emerging relationships between intrapersonal factors, the environment and pregnancy incidence. The participants confirmed the existence of community-related normative beliefs and attitudes that imply the acceptance of early adolescent sexual intercourse while suggesting that these factors influenced their decisions to have unprotected sex. Additionally, the participants noted the conspicuous lack of sex education in both school and community venues, which likely contributed to their and their peer’s limited sex education knowledge. Accordingly, there is an immediate need to recognize adolescent pregnancy in this rural area as a “socially generated health problem” (Buchanan, 2000, p.50).

In reconciling health problems, public health officials have traditionally relied upon scientific thought and theory to assess and interpret the causal relationships between these problems and their associated factors. While this method is valuable, addressing adolescent pregnancy as a socially generated health problem requires the simultaneous acknowledgement of individual empowerment (self-direction) and behavior change

modalities as mutually significant driving forces in the improvement of health. The adolescent women in this study faced great obstacles that made good health and well-being more difficult to obtain. However, they presented themselves as eager to draw upon what was positive in their lives. They longed for what most people desire—the opportunity to succeed despite great hindrance. Obstacles between them and the empowerment that comes with opportunity included strained economic structures, a struggling educational system, and a community that expected them to fail.

While deficiencies in education or knowledge can be resolved easily, empowerment requires a resolute commitment to participation (Buchanan, 2000). Those serving in public health positions must recognize the value of reciprocal participation between themselves and the communities they serve; understanding that the realization of individual empowerment over one's health is just as important as pinpointing a causal relationship through research. Specifically, the mindset relative to the capabilities of the pregnant adolescent must shift away from impossibility to possibility. The possibilities are limitless when one is empowered, and empowerment is perhaps the most practical catalyst for real social change.

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APPENDIX A:

INFORMED CONSENT (AGED 18 & OVER)

You are invited to take part in a research study of adolescent pregnancy in rural areas. You were chosen for the study because your child a female aged 13 to 19, resides in a rural area, and is either pregnant, parenting, or non pregnant. Please read this form and ask any questions you have before agreeing to be part of the study.

This study is being conducted by a researcher named Kimberly Brodie, who is a doctoral student at Walden University. She is a health education specialist and has extensive experience with teenaged populations.

Background Information:
The purpose of this study is to describe the individual and community related factors that contribute to pregnancy in teenage populations. It is designed to be specific to your community and will provide important information about this health issue to health officials in your area.

Procedures:
If you agree to be in this study, you will be asked to:

- complete a survey; this will take anywhere from 15 to 20 minutes.
- return the survey to a study administrator
- Possibly participate in a series of focus group discussions lasting 20 minutes each (to be scheduled at a later date)

Voluntary Nature of the Study:
Your participation in this study is voluntary. This means that everyone will respect your decision of whether or not you want to be in the study. No one at ___(insert site name here)____ will treat you differently if you decide not to be in the study. If you decide to join the study now, you can still change your mind later. If you feel stressed during the study you may stop at any time. You may skip any questions that you feel are too personal.

Risks and Benefits of Being in the Study:
The risks of participating in this study are extremely minimal. You will be asked to answer questions relating to sexual intercourse in teenaged populations. Some question comment may make you feel embarrassed to read. However, your thoughts and opinions are very valuable. By completing this survey, you will help many in your community receive better health programs.

Confidentiality:
Any information you provide will be kept confidential. The researcher will not use your information for any purposes outside of this research project. Also, the researcher will not include your name or anything else that could identify you in any reports of the study.

OVER

Compensation:
If you choose to participate in the study, there is an opportunity for compensation. If you choose to participate in the survey, you will have to opportunity to receive one of five $20 WalMart gift certificates. Please note that even if you decided to withdraw from the study (as you have the right to at any time) you are still eligible for the compensation.

Contacts and Questions:
The researcher's name is Kimberly Brodie. The researcher's faculty advisor is Dr. John Ehiri. You may ask any questions you have now. Or if you have questions later, you may contact the researcher via phone at (919) 496 1606, (919) 539 0320 or kbrodie1@hotmail.com. The student's advisor may be reached at (205) 540-3194 or john.ehiri@waldenu.edu. If you want to talk privately about your rights as a participant, you can call Dr. Leilani Endicott. She is the Director of the Research Center at Walden University. Her phone number is 1-800-925-3368, extension 1210.

The researcher will give you a copy of this form to keep.

Statement of Consent:

☐ By checking this box, I state that I have read the above information. I have received answers to any questions I have at this time. I am 18 years of age or older, and I consent to participate in the study.

Printed Name of Participant _____

Participant's Written Signature _____

Researcher's Written Signature _____

APPENDIX B:

ASSENT FORM (AGED 13-17)

Hello, my name is Kim Brodie and I am doing a project to learn about teen pregnancy. I am inviting you to join my project. I picked you for this project because you are aged 13 to 19, live in Vance County, and are pregnant, parenting, or not pregnant. An adult will read this form with you. You can ask any questions you have before you decide if you want to participate in this project.

WHO I AM:
I am a student at Walden University. I am working on my doctoral degree. I am a former school teacher that taught students your age for several years. My goal now is to learn as much about the health of students your age so that I can provide the best school health programs for them.

ABOUT THE PROJECT:
If you agree to join this project, you will be asked to:

- complete a survey; this will take anywhere from 15 to 20 minutes.
- return the survey to a study administrator
- Possibly participate in a series of focus group discussions lasting 20 minutes each (to be scheduled at a later date)

IT'S YOUR CHOICE:
You don't have to join this project if you don't want to. You won't get into trouble with ___(insert site name here)___ if you say no. If you decide now that you want to join the project, you can still change your mind later just by telling me. If you want to skip some parts of the project, just let me know.

It's possible that being in this project might make you feel uncomfortable at time because you will be asked questions about sex and pregnancy. But this project might help others by helping me and others interested in keeping you healthy provide better programs for you and others your age.

PRIVACY:

Everything you tell me during this project will be kept private. That means that no one else will know your name or what answers you gave. The only time I have to tell someone is if I learn about something that could hurt you or someone else.

COMPENSATION:
If you are completing the survey at the clinic only, upon completion of the survey, you will receive a ticket entering you in a drawing for one of five $20 WalMart gift certificates. If you are agreeing to participate in the focus group discussions, upon completion of all of the sessions, you will receive a gift.

ASKING QUESTIONS:
You can ask me any questions you want now. If you think of a question later, you or your parents can reach me at (919) 539 0320, (919) 496 1606, or kbrodie1@hotmail.com. My professor, Dr. John Ehiri, can be reached at (205) 540 3194. If you or your parents would like to ask my university a question, you can call Dr. Leilani Endicott. Her phone number is 1-800-925-3368, extension 1210.

I will give you a copy of this form.

Please sign your name below if you want to join this project.

Name of Child	
Signature of Child	
Signature of Site Coordinator	
Signature of Researcher	

APPENDIX C:

PARENTAL CONSENT FORM (MINORS AGED 17 & UNDER)

Dear Parent/Guardian:

My name is Kim Brodie and I am a public health student with Walden University. I am completing my doctoral degree and I am asking your help with my final project. I will be conducting research at several community sites in Vance County and would like to include your student, along with several other students to participate in this research project on teen pregnancy. If your student takes part in this project, they will be asked to complete a one-time survey. Your child will not miss any instructional time in order to participate in this study.

Background Information:
The purpose of this study is to describe the individual and community related factors that contribute to pregnancy in teenage populations. It is designed to be specific to your community and will provide important information about this health issue to health officials in your area.

Procedures:
If you agree to allow your student to participate in this study, they will be asked to:

- complete a survey; this will take about 15-20 minutes
- return the survey to a study administrator

Voluntary Nature of the Study:
Your student's participation in this study is voluntary. This means that everyone will respect your decision of whether or not you want your child to be in the study. No one at ___(insert site name here)___ will treat you differently if you decide not to be in the study. If you decide to join the study now, you can still change your mind later. If your student decides they want to stop their participation in the study, they can do so at any time without penalty.

Risks and Benefits of Being in the Study:
The risks of participating in this study are extremely minimal. Your student will be asked to answer questions relating to sexual intercourse in teenaged populations. Some question content may make them feel embarrassed to read. However, their thoughts and opinions are very valuable. By allowing the student to complete this survey, you will help many in your community receive better health programs.

Confidentiality:
Any information the student provides will be kept confidential and will not become a part of the student's school record. The researcher will not use their information for any purposes outside of this research project. Also, the researcher will not ask for or include their name or anything else that could identify you or them in any reports of the study. Any sharing or publication of the research results will not identify any of the participants by name.

Your student's participation in this project is completely voluntary. In addition to your permission, your child will also be asked if he or she would like to take part in this project. Only those students who have parental permission and who want to participate will do so, and any student may stop taking part at any time. You are free to withdraw your permission for your child's participation at any time and for any reason

without penalty. These decisions will have no affect on your future relationship with Boys & Girls Club or your child's status there.

Compensation:
If you choose to allow your student to participate in the study, there is an opportunity for compensation. If you choose for the student to participate in the survey, they will have to opportunity to receive one of five $20 WalMart gift certificates. Please note that even if your child decided to withdraw from the study (as they have the right to at any time) they are still eligible for the compensation.

Asking Questions:
You can ask me any questions at any time. I can be reached at (919) 539 0320, (919) 496 1606, or kbrodie1@hotmail.com. My professor, Dr. John Ehiri, can be reached at (205) 540 3194. If you would like to ask my university a question, you can call Dr. Leilani Endicott. Her phone number is 1-800-925-3368, extension 1210. Please reference IRB approval # 10-08-08-0340582.

How To Use This Form:
If you **agree** to allow your child to participate, please sign your name in the space provided below and place in the marked envelope.

Your consideration is greatly appreciated. Again, your student's opinions and input in this project is of great value to me!

Sincerely,

Kimberly Brodie, Researcher

By signing below, I GIVE permission for my child to participate in this study.

Printed Name of
Participant (student) _____

Parent's (or Guardian's)
Written Signature _____ Date _____

Researcher's Written
Signature _____ Date _____

APPENDIX D:

SURVEY INSTRUMENT

Thank you for agreeing to participate in this study. We are trying to find out some information about people your age. You can help us by completing this survey. The survey will take only a few minutes to complete. Please read the instructions at the top of each page carefully.

To keep your answers confidential and private, please ***do not*** put your name anywhere on this survey. Please use the pen provided to mark your answers.

Because this study is important, your answers are also important. Please answer each question carefully.

Thank you for your help.

Please Go To Next Page.

Section A Demographics

Read each question carefully. Remember, because this study is important, your answers are also important. Use the pen provided to mark your answer. Please answer each question carefully. *Note: Please do not skip questions.*

For multiple choice questions, please darken the circle representing your answer.

1. How old are you? _____

2. What grade are you in? _____

3. What is your race? If you are more than one race, you may choose more than one.
   - O a) Latino
   - O b) Black/African American
   - O c) White
   - O d) Asian or Pacific Islander
   - O e) American Indian or Native American
   - O f) Other

4. Are you of Hispanic origin?
   - O a) No
   - O b) Yes

5. Do you live with your (Please choose all that apply):
   - O a) Biological Mother
   - O b) Stepmother
   - O c) Foster Mother
   - O d) Grandmother
   - O e) Adoptive Mother

   - O f) None of these (Skip to Question 7)

6. How far did she go in school?
   - O a) Some HS
   - O b) Finished HS
   - O c) Some College
   - O d) Finished College

Section A Demographics - *continued*

7. Do you live with your (Please choose all that apply):
   - ○ a) Biological Father
   - ○ b) Stepfather
   - ○ c) Foster Father
   - ○ d) Grandfather
   - ○ e) Adoptive Father
   - ○ f) None of these (skip to question 9)

8. How far did he go in school?
   - ○ a) Some HS
   - ○ b) Finished HS
   - ○ c) Some College
   - ○ d) Finished College

9. Including yourself, how many people live in your household? _____

10. Are you currently (Please choose all that apply):
    - ○ a) Pregnant
    - ○ b) Parenting
    - ○ c) Not pregnant

11. Have you ever had vaginal intercourse?
    - ○ a) No (Skip to Question 15)
    - ○ b) Yes

12. In the past 12 months, how many times have you had vaginal intercourse? _____

13. In the past 6 months, how many sexual partners have you had? _____

14. How old were you when you first had vaginal intercourse? _____

15. During your last intercourse, did you or your partner use some form of birth control or pregnancy prevention?
    - ○ a) No
    - ○ b) Yes

Section A Demographics - *continued*

16. What is your current Grade Point Average (GPA)? If you are not sure, please provide your best guess.

O a. 1.0 or lower

O b. 1.1- 2.0

O c. 2.1-3.0

O d. 3.1-4.0

O e. 4.1 or higher

Section B -Knowledge

Directions: Read each question carefully and choose the answer you believe is correct. There will only be one correct answer for each question. Darken the circle beside your answer choice for each question. Please answer each question carefully.

1. By the time teenagers graduate from high school in the United States:
   - O a) only a few have had sex (sexual intercourse)
   - O b) about half have had sex
   - O c) about 80% have had sex

2. It is harmful for a woman to have sex (sexual intercourse) when she:
   - O a) is pregnant
   - O b) on her period
   - O c) has a cold
   - O d) has a sexual partner with syphilis
   - O e) none of the above

3. Some contraceptives (birth control methods):
   - O a) can be obtained with a doctor's prescription
   - O b) are available at family planning clinics
   - O c) can be bought over the counter at drug stores
   - O d) can be obtained by people under 18 without their parents' permission
   - O e) all of the above

4. If 10 couples have sexual intercourse regularly without using any kind of birth control, the number of couples who become pregnant by the end of year 1 is about:
   - O a) one
   - O b) three
   - O c) six
   - O d) nine
   - O e) none of the above

Section B- Knowledge - *continued*

5. People having sexual intercourse can best prevent getting a sexually transmitted infection (STI or STD) by using:
   - O a) condoms (rubbers)
   - O b) contraceptive foam
   - O c) the pill
   - O d) withdrawal (pulling out)

6. If a couple has sexual intercourse and uses no birth control, the woman might get pregnant:
   - O a) anytime during the month
   - O b) only 1 week before her period begins
   - O c) only during her period
   - O d) only 1 week after her period begins
   - O e) only 2 weeks after her period begins

7. The method of birth control that is least effective is:
   - O a) a condom
   - O b) a diaphragm
   - O c) withdrawal (pulling out)
   - O d) the pill
   - O e) abstinence (not having sex at all)

8. It is possible for a woman to become pregnant:
   - O a) the first time she has sex
   - O b) if she has sex while on her period
   - O c) if she has sex standing up
   - O d) if sperm get near the opening of the vagina even though the man's penis does not enter her body
   - O e) all of the above

9. It is impossible to cure:
   - O a) syphilis
   - O b) gonorrhea
   - O c) herpes virus 2
   - O d) vaginitis

Section B- Knowledge - *continued*

10. Teenagers who choose to have sexual intercourse may possibly:
    - O a) have to deal with a pregnancy
    - O b) feel guilty
    - O c) become more close to their sexual partner
    - O d) become less close to their sexual partner
    - O e) all of the above

11. As they enter puberty, teenagers become more interested in sexual activity because:
    - O a) their sex hormones are changing
    - O b) the media (TV, movies, magazines, music) push sex for teenagers
    - O c) some of their friends have sex and expect them to have sex also
    - O d) all of the above

12. To use a condom the correct way, a person must:
    - O a) leave some space at the tip for the guy's fluid
    - O b) use a new one every time sexual intercourse occurs
    - O c) hold it on the penis while pulling it out of the vagina
    - O d) all of the above

13. The proportion of American girls who become pregnant before turning 20 is:
    - O a) 1 out of 3
    - O b) 1 out of 11
    - O c) 1 out of 43
    - O d) 1 out of 90

14. Treatment for sexually transmitted infections (STI) is best if:
    - O a) both partners are treated at the same time
    - O b) only the partner with symptoms sees a doctor
    - O c) the person takes the medicine only until the symptom disappears
    - O d) the partners continue having sex

Section B- Knowledge - *continued*

15. Syphilis:
    - O a) is one of the most dangerous of the sexually transmitted infections
    - O b) is known to cause blindness, insanity, and death if untreated
    - O c) is first detected as a sore on the genitals
    - O d) all of the above

16. If people have sexual intercourse, the advantage of using condoms is that they:
    - O a) help prevent getting or giving an STI
    - O b) can be bought in drug stores by either sex
    - O c) do not have dangerous side effects
    - O d) do not require a prescription
    - O e) all of the above

17. The pill:
    - O a) can be used by any woman
    - O b) is a good birth control method for women who smoke
    - O c) usually makes period cramps worse
    - O d) must be taken for 21 or 28 days in order to be effective

18. Gonorrhea:
    - O a) is 10 times more common than syphilis
    - O b) is a disease that can be passed from mothers to their children during birth
    - O c) makes many men and women sterile (unable to have babies)
    - O d) is often difficult to detect in women

19. People choosing a birth control method:
    - O a) should think only about the cost of the method
    - O b) should choose whatever methods their friends are using
    - O c) should learn about all the methods before choosing the one that is best for them
    - O d) should get the method that's easiest to get

Section C- Attitudes

The questions below are not a test of how much you know. We are interested in what you believe about some important issues. Please rate each statement according to how much you agree or disagree with it by checking the appropriate box. Everyone will have different answers. Your answer is correct if it describes you very well.

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1. I'm confused about my personal sexual values and beliefs					
2. Sexual relationships create more problems than they're worth					
3. Two people having sex should use some form of birth control if they aren't ready for a child					
4. Unmarried people should not have sex (sexual intercourse)					
5. I'm confused about what I should and should not do sexually					
6. Sexual relationships make life too difficult					
7. Birth control is not very important					
8. People should not have sex before marriage					
9. I have trouble knowing what my beliefs and values are about my personal sexual behavior					

Section C- Attitudes - *continued*

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
10. A sexual relationship is one of the best things a person can have					
11. More people should be aware of the importance of birth control					
12. It is all right for two people to have sex before marriage if they are in love					
13. I have my own set of rules to guide my sexual behavior (sex life)					
14. Sexual relationships only bring trouble to people					
15. Birth control is not as important as some people say					
16. People should only have sex if they are married					
17. I know for sure what is right and wrong sexually for me					
18. Sexual relationships provide an important and fulfilling part of life					
19. If two people have sex and aren't ready to have a child, it is very important they use some form of birth control					
20. It is all right for two people to have sex before marriage					

Section D- Self Esteem

Directions: Please rate each statement according to how much you agree or disagree with it by checking the appropriate box. Everyone will have different answers. Your answer is correct if it describes you very well.

	Strongly Agree	Agree	Disagree	Strongly Disagree
1. I feel that I'm a person of worth, at least on an equal plane with others"				
2. "I feel that I have a number of good qualities"				
3. "All in all, I tend to feel that I am a failure"				
4. "I am able to do things as well as most other people"				
5. "I feel I do not have much to be proud of"				
6. "I take a positive attitude toward myself"				
7. "On the whole, I am satisfied with myself"				
8. "I wish I could have more respect for myself"				
9. "I certainly feel useless at times"				
10. "At times I think I am no good at all"				

Thank you for completing this survey!

Please return your survey packet to the person who gave it to you.

APPENDIX E:

FOCUS GROUP INTRODUCTORY DIALOGUE

Good afternoon and welcome. Thanks for taking the time to join our discussion about teen pregnancy. My name is Kim and I will serve as the moderator for today's focus group discussion. Assisting me is your coordinator _____. The purpose of today's discussion is to get information from you about your thoughts on teen pregnancy and your community. You were invited because your thoughts and opinions are very important. There are no right or wrong answers to the questions I am about to ask. I expect that you all will have different points of view. Please feel free to share your point of view even if it differs from what others have said. If you want to follow up on something that someone said, you want to agree or disagree or give an example do that.

Don't feel like you have to respond to me all of the time. Feel free to have the conversation with each other about these questions. I am here to ask questions, listen, and make sure that everyone has a chance to share. I am interested in hearing from each of you. So, if one person is talking a lot, you will hear me ask that others be given a chance to share their thoughts.

Remember, this conversation is a chance for you to have your opinions heard. _____ (group administrator) and I will be taking notes to help us remember what was said. We are also tape recording the session because we don't want to miss any of your comments. Remember that none of your names will be included in any reports even if though they may be mentioned while we are talking.

Icebreaker:
Let's begin by having each person say their grade level and age.

Background:
I will be asking you some questions today about your community. When I say community, I mean your school, the area where you live (or your neighborhood) and the places you visit regularly (like a church, community center, or place of work).
You may also hear me say the word self-esteem. When I say self-esteem, I am asking you to think about your value to the world and how you opinion of yourself.

Are there any questions about those terms?

Proceed to Interview Questions

APPENDIX F:

SAMPLE PROBE QUESTIONS: FOCUS GROUP SESSIONS

Would you explain further?

Would you give me an example of what you mean?

Is there anything else?

I don’t understand. Can you restate what you said?

Please tell me more about _____.

You just told me about_____. Does that have any relationship with _____?

Questions taken from Rennekamp & Nall (n.d.).

APPENDIX G:

FOCUS GROUP DISCUSSION QUESTIONS

Construct A - Preparedness for higher education or trade-related job

1. Describe the ways that your high school has prepared you to enter college or start a trade-related job upon graduating.
2. Describe how often and in what ways your school teachers discuss college.
3. In what ways has the community (e.g. church, community groups) encouraged youth to go college or learn more about college?

Construct B - Preparedness for employment

1. Describe the ways your teachers at school discuss preparing to get a job.

2. Describe the ways your high school experience has prepared you to get a job outside of your community.

3. Think about the adults you see or talk to regularly; this might include family members, church members, or other adults you know; describe the types of jobs they have.

Construct C - Community role models for youth

1. Think of someone you desire to be like when you become an adult; someone you might call a role model. Describe your interaction with people like this where you live.

Construct D - Preparedness for life outside of community (isolationism)

1. Describe your plans for after you graduate from high school

2. Think of what your life will be like after high school. Describe what your experience would be like if you moved away from home to another area either for school or a job.

Construct E - Community acceptance of adolescent pregnancy

1. If you are pregnant or parenting, how has your family responded to you being pregnant as a teenager?

2. If you are not pregnant, how do you think your family would respond to you being pregnant as a teenager?

3. How do you think the other adults in your community or neighborhood feel about teen pregnancy?

4. How did your friends react when they found out you were pregnant?

5. In what ways do the adults in your community show how they feel about teen pregnancy?

Construct F - Summative effect of community on self

The preface for the first question is as follows:

Think about your community. Your community includes people (like friends and family) as well as places you go regularly. Now, respond to the following question:

1. How would you describe the impact that your community has had on your future goals?

The second preface is as follows: Think about self esteem, or your belief that you can achieve simple things in life. Now, answer the following questions:

1. Describe how your community has affected your self esteem.
2. Describe how your community affects the decisions you make about sex.

Construct G - Sexual health knowledge and modalities

1. Describe how your school has impacted your knowledge about sex education.
2. Describe ways adults could help teens learn more about pregnancy prevention.
3. Where should sex education programs take place?

APPENDIX H:

CONFIDENCE INTERVALS ON POPULATION MEANS

Response	Nonpregnant or nonparenting	Pregnant or parenting
AD-1	-0.04 to 0.32	-0.04 to 0.32
AD-2	-1.04 to -0.68	-0.91 to -0.43
AD-3	1.63 to 1.99	1.79 to 2.29
AD-4	0.42 to 0.96	-0.28 to 0.34
Knowledge	10.25 to 11.73	10.22 to 12.38
Self-Esteem	15.72 to 17.3	15.66 to 18.26

Note: Given the sample sizes, observed means and standard deviations, there is 95% confidence that the true population means for each primary group lie within these scores.

APPENDIX I:

PERMISSION FOR USE

RE: Permission to Use Published Questionnaires

From: **Doug Kirby** (dougk@etr.org)
Sent: Sat 7/26/08 4:03 PM
To: Kim Patterson (kimp@etr.org); kbrodie1@hotmail.com (kbrodie1@hotmail.com)

Kim,

These (Knowledge Test, Attitude and Value Inventory) are in the public domain, because they were developed with federal dollars. Thus, you do not need my permission. But in case your IRB believes you need it, you do have my permission.

Doug

Douglas Kirby, PhD
Senior Research Scientist
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The Rosenberg Self-Esteem Scale

"The Rosenberg Self-Esteem Scale is perhaps the most widely-used self-esteem measure in social science research. Dr. Rosenberg was professor of Sociology at the University of Maryland from 1975 until his death in 1992. He received his Ph.D. from Columbia University in 1953, and held a variety of positions, including at Cornell University and the National Institute of Mental Health, prior to coming to Maryland. Dr. Rosenberg is the author or editor of numerous books and articles, and his work on the self-concept, particularly the dimension of self-esteem, is world-renowned.

Dr. Florence Rosenberg, Manny's wife, has given permission to use the Self-Esteem Scale for educational and professional research. There is no charge associated with the use of this scale in your professional research. However, please be sure to give credit to Dr. Rosenberg when you use the scale by citing his work in publications, papers and reports. We would also appreciate receiving copies of any published works resulting from your research at the University of Maryland address listed below."

The Rosenberg SES may be used without explicit permission.
The author's family, however, would like to be kept informed of its use.
Send information about how you have used the scale, or send published research resulting from its use, to the address below:

The Morris Rosenberg Foundation
c/o Dept. Of Sociology
University of Maryland
2112 Art/Soc Building
College Park, MD 20742-1315

University of Maryland (2008). The Rosenberg self esteem scale. Retrieved from http://www.bsos.umd.edu/socy/Research

CURRICULUM VITAE

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Ph.D, Walden University, Public Health 2009
Community Health Education and Promotion
Dissertation: *Intrapersonal and Community-Related Influences of Rural Adolescent Pregnancy: A Mixed-Method Approach*

MAT, Health Education Specialization, East Carolina University 2004
Capstone Project: *Health Education Modalities in Middle Grades*

M.S., Exercise and Sport Science, UNC Greensboro 2001
Capstone Project: *Health and Wellness in African American Populations*

B.A, Physical Education, Exercise and Sport Science, UNC Chapel Hill 1998

CERTIFICATIONS:

American College of Sports Medicine Certified Health Fitness Specialist
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PROFESSIONAL/ TEACHING EXPERIENCE:

Health and Physical Education Specialist, Wake County Public Schools 2001-2006

Graduate Assistant to Fitness and Wellness Coordinators, Central YMCA of Greensboro 2000-2001

Activities Instructor, UNC Greensboro Department of Exercise Science	1999-2000

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Graduate Assistant, UNC Greensboro Department of Exercise Science *Assistant in study of Fibromyalgia in Older Adult Females.*	1999-2000
Community Research Advocate, Project CONNECT UNC Chapel Hill Sheps Center for Health Services Research	2005-2007
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