Using psychosocial factors and the theory of reasoned action to predict sexual behavior in adolescent females.

Tamela Joe Turner
University of Alabama at Birmingham

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USING PSYCHOSOCIAL FACTORS AND THE THEORY OF REASONED ACTION TO PREDICT SEXUAL BEHAVIOR IN ADOLESCENT FEMALES

by

TAMELA J. TURNER

A DISSERTATION

Submitted to the graduate faculty of The University of Alabama at Birmingham, in partial fulfillment of the requirements for the degree of Doctor of Philosophy

BIRMINGHAM, ALABAMA

2000
ABSTRACT OF DISSERTATION
GRADUATE SCHOOL, UNIVERSITY OF ALABAMA AT BIRMINGHAM

Degree Ph.D. Program Health Education/Health Promotion

Name of Candidate Tamela J. Turner

Committee Chairs David Macrina and Marsha Sturdevant

Title Using Psychosocial Factors and the Theory of Reasoned Action to Predict Sexual Behavior in Adolescent Females

The dual purpose of this study was to determine whether and to what extent three psychosocial factors predicted intentions to have sexual intercourse and whether and to what extent three variables taken from the theory of reasoned action (TRA) and history of condom use predicted intentions to use condoms in a sample of sexually active adolescent females. Depression, family connectedness, and religiosity-spirituality were the independent variables for the first analysis. Peer norms, partner norms, attitudes toward condom use, and history of condom use were the independent variables for the second analysis.

The sample for this study was drawn from a research subset of female adolescents who participated in the Teenage Access Project (TAP). TAP was conducted at various agencies in Jefferson County, Alabama during the years 1994 to 1997. The 94 participants selected for inclusion in the present study were between the ages of 14 and 19 years and responded to both a baseline questionnaire and a baseline interview. Literature reviews were performed to aid in the identification of a set of psychosocial variables for the first analysis. TRA constructs, along with history of condom use, were identified as variables for the second analysis. Descriptive statistics were used to define the study population, and logistic regression analyses were performed to test the association between the independent and dependent variables.
Logistic regression analyses revealed that family connectedness and religiosity-spirituality were not predictors of respondents' intentions to engage in sexual intercourse; depression was a predictor of respondents' intentions to engage in sexual intercourse. Respondents were more likely to engage in sexual intercourse if they were depressed. Logistic regression analyses revealed that partner norms and history of condom use were not predictors of intentions to use condoms during sexual intercourse; peer norms and attitudes toward condom use were predictors of respondents' intentions to use condoms during sexual intercourse. Respondents were more likely to intend to use condoms during sexual intercourse if they held favorable attitudes toward condoms and if they perceived peers held favorable attitudes toward condoms.
DEDICATION

This dissertation is dedicated to God, who gave me the strength, courage, and guidance to begin and continue this endeavor while working full time. I also dedicate this dissertation to my family and friends; without their patience, support, and love I could not have finished it. Finally, this dissertation is dedicated to my grandfather, Ernest F. Turner. His gentle humor and encouraging spirit have remained with me throughout the years.
ACKNOWLEDGMENTS

I would like to express my appreciation to Dr. Marsha Sturdevant, Co-Chair, for allowing me to use her data set for my research and for sharing her time and expertise.

Thanks go to the remaining members of my dissertation committee, Drs. David Macrina, Co-Chair; Michael Hardin; Myra Crawford; and Lesa Woodby, for expecting excellence and sharing their expertise. Special thanks are extended to my classmates Stephanie Chisolm and Baoyi Zheng for being positive, supportive friends.

Also, I wish to acknowledge Nancy Turner-Shults for her encouragement, Sherri Edwards for her excellent computer skills and support, and Nikki Burst for her help with the data set.
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CHAPTER 1
INTRODUCTION

Adolescence has been described as the developmental stage between childhood and adulthood, which is shaped by numerous factors, including ethnic, social, and economic influences (Graber, Brooks-Gunn, & Galen, 1998). This period of transition is marked by role reorganization and the emergence of self-identity separate from that of parents and other primary caretakers. For adolescents, initiation and participation in sexual intercourse may also be considered a normative element of role transition and part of the emerging self. However, adolescents participating in sexual intercourse may lack the cognitive or emotional capacity to consider or prevent the risks of unprotected sexual activity such as sexually transmitted diseases (STD), human immunodeficiency virus (HIV), and pregnancy (Graber et al.).

Statement of the Problem

Adolescents in the United States are sexually active, with 48% female and 49% male high school students, ages 15 to 19 years, reporting sexual intercourse (Annie E. Casey Foundation, 1998). Accompanying adolescent sexual activity is the risk of acquiring an STD or HIV, a major health concern and a risk that is currently one of the most significant threats to the health of adolescents (Centers for Disease Control and Prevention [CDC], 2000c). According to the CDC, adolescents account for 25% of all new STD infections and 25% of all new HIV infections. STDs and infections such as chlamydia,
gonorrhea, and human papilloma virus are major contributors to adolescent morbidity, with approximately 3 million cases reported annually. African American youth are of particular concern because AIDS and STD surveillance data indicate markedly higher prevalence rates among African American adolescents (CDC, 1998b).

Young people with multiple sex partners and those engaging in unprotected sexual intercourse are at risk for STDs, HIV infection, and pregnancy (CDC, 2000). Unprotected sex is the number one behavior associated with HIV transmission among adolescents (Hein, 1989). Thus, in addition to unintended pregnancy and other STDs, adolescents who engage in unprotected sex are at risk for HIV/AIDS. The use of condoms significantly reduces the risk of transmission of sexually transmitted infections, including HIV.

In order to help protect adolescents from STDs, HIV, and unintended pregnancy, it is crucial to have a better understanding of the attitudes and perceptions of adolescents who engage in sexual activity and of other factors that may affect their use of barrier contraceptives. This increased understanding may aid in addressing a public health priority, the design and implementation of STD/HIV prevention programs for adolescents.

The adolescent decision-making process surrounding sexual behavior is complex and is affected by biological, psychological, social, cultural, religious, and other personal and environmental factors. A comprehensive examination of the adolescents’ decision to become sexually active, to use contraception, to have multiple sex partners, and to make other decisions related to sexual activity should include information regarding biopsychosocial factors (Santelli, DiClemente, Miller, & Kirby, 1999). The current study used three psychosocial factors—depression, religiosity-spirituality, and family connectedness—to examine a group of adolescent females and their intentions to engage in sexual
intercourse. These three specific factors were considered because religiosity-spirituality and family connectedness are deemed protective factors by several authors (Ellis & Wagemann, 1993; Metzler, Noell, Biglan, Ary, & Smolkowski, 1994; Resnick et al., 1997) and because depression is described as a risk factor by several authors (Burns, Perkins, Xiaoming, & Stanton, 2000; Kowaleski-Jones & Mott, 1998). These will be discussed in detail in the literature review. Because these specific factors were of interest, questions regarding these specific psychosocial factors were included in the original questionnaire and interview.

To adolescents, the threat of future disease may seem inconsequential compared with fulfillment of their immediate sexual desires (Baker, Morrison, Carter, & Verdon, 1996). This mode of thinking further compounds the complexities of understanding and suggesting successful measures for preventing disease and pregnancy.

The use of social and behavioral science theory is strongly supported in designing health promotion programs to address such complexities (Baker et al., 1996). Health education and health promotion programs may be more successful when based upon sound and appropriate theories (Salazar, 1995). Ajzen and Fishbein (1980) introduced the theory of reasoned action (TRA) as an intrapersonal theory that could be used to predict a person’s intentions to perform a specific behavior, based upon attitudes and social norms. Numerous research studies examining adolescents’ decision to engage in sexual activity and to use condoms have employed the TRA (Baker et al., 1996; Basen-Engquist & Parcel, 1992; Stevenson, Davis, Weber, Weiman, & Abdul-Kabir, 1995). The TRA has also provided significant prediction regarding a variety of other health-related decisions such as HIV-preventive behavior, condom use behavior, AIDS-related risk behavior,
children's sunscreen use, intentions to use drugs, and contraceptive decision making (Abraham, Sheeran, & Orbell, 1998; Bentler & Speckart, 1979; Buunk, Baaker, Siero, van den Eijnden, & Yzer, 1998; Martin, Jacobsen, Lucas, Branch, & Ferron, 1999; Pagel & Davidson, 1984; Zimmerman & Olson, 1994). In addition to examining psychosocial factors and adolescent sexual behavior, the current exploratory analysis used TRA as the theoretical framework to examine the responses of the same group of adolescent females and their intentions to use condoms.

Research Questions

This study began as a result of the interest in the following questions: Do psychosocial factors, specifically depression, religiosity-spirituality, and family connectedness, affect an adolescent's intentions to have sexual intercourse, and do attitudes, social norms and behavioral history affect an adolescent's intentions to use condoms? Family connectedness, religiosity-spirituality, and depression were included as variables in one prediction equation that examined the respondents' intentions to engage in vaginal intercourse. A second prediction model, which examined the respondents' intentions to use condoms, used constructs from TRA: respondent attitudes toward the behavior, respondent perceptions of the subjective norms of peers (specifically partner), and an extra-attitudinal factor-history of condom use (Baker et al., 1996; Bentler & Speckart, 1979).

Specifically, the two research questions that drove this investigation were the following:
Research Question 1: To what extent do three psychosocial variables—depression, religiosity-spirituality, and family connectedness—predict behavioral intentions to have sexual intercourse?

Research Question 2: To what extent do TRA constructs—attitude, partner, and peer norms—and history of condom use, predict behavioral intentions to use condoms?

Significance of the Study

By examining the behavioral intention tree of adolescents (through the use of TRA) and other forces that shape adolescence sexual behaviors and future intentions, this study offers some insight into the content and focus appropriate for prevention and intervention measures. Recent literature points to the increased explanatory power and need for inclusion of variables external to the TRA model (Baker et al., 1996; Santelli et al., 1999). Psychosocial issues have emerged as significant influences to consider when examining sexual behavior among adolescents (Graber et al., 1998). The impact of adolescent connections on certain psychosocial situations, such as those found within school and family upon adolescent behavior, is not well understood (Resnick et al., 1997). The results of the current study will contribute to understanding the impact of family, religiosity-spirituality, and depression upon adolescent sexual behavior and will add support to the use of social and behavioral science theories such as TRA in the design of health education and health promotion programs.

As previously mentioned, African American youth have markedly higher prevalence rates for STDs and HIV. Among the general heterosexual population, STD rates are higher for females than males; over 6 million women each year acquire STDs (Lewis &
For the last 2 decades, the southern region of the United States has consistently had higher rates of syphilis and gonorrhea than other regions of the country (CDC, 1998c). There is also a high HIV prevalence among childbearing women living in the South (CDC). The proportion of all AIDS cases among adolescent and adult females tripled from years 1985 to 1998 (CDC). The cohort of this study was composed predominantly of African American females located in the southern region of the United States. Thus, in addition, the results of the current study can contribute to understanding the impact of the three psychosocial factors, specifically, upon southern African American females' sexual behavior, and add to the support for use of TRA in the design of health education and health promotion programs for African American female adolescents.

Definitions of Terms

Unsafe sexual activity—condom nonuse during vaginal intercourse (current study). The health risk behavior of interest for this study is unprotected sexual intercourse or condom nonuse during sexual intercourse. Behavior modification, in this case condom use, can greatly reduce the risk of STD and unintended pregnancy among sexually active teens.

Protective factors—moderators or buffers against engaging in risky behavior (Jessor, 1998). The current study included three psychosocial variables: religiosity-spirituality, family connectedness, and depression. Protective factors have emerged in recent reports as worthy of consideration along with risk factors. Previous studies have indicated that religiosity-spirituality and family connectedness are protective factors. Inclusion of these factors adds to the understanding of the complex social and behavioral ecology of adolescents.
Family connectedness—the presence of social and emotional support and adaptability of the family to internal and external impacts (Resnick et al., 1997).

Depression—having general feelings of sadness, having a markedly diminished interest or pleasure in all or almost all daily activities, or both (Diagnostic and Statistical Manual of Mental Disorders [DSM-IV], 1994).

Religiosity—the preference of a particular religion, considering religion to be of importance, and frequency of church attendance (current study). Frequency of church attendance was not measured in this study; religious preference was determined.

Spirituality—a sense of relatedness to a power, force, or presence greater than the self (Miller, 1995).
CHAPTER 2
REVIEW OF RELEVANT LITERATURE

Several behaviors, including early initiation of sexual intercourse, frequency of intercourse, having multiple sex partners, and the use of condoms and other methods of contraception, determine whether adolescents will acquire a STD, HIV, or become pregnant (Santelli et al., 1999). Healthy People 2010 lists several goals to address these sexual behaviors, including delaying the onset of sexual intercourse, increasing abstinence, increasing the use of contraceptives, and increasing the use of condoms (Healthy People, 2010). A number of psychosocial and biological factors influence these sexual behaviors (Santelli et al.). The effects of psychosocial factors upon sexual behavior are not well understood (Resnick et al., 1997; Santelli et al.). The purpose of the current study was to explore the predictive power of three psychosocial factors with regard to sexual intercourse intentions and to use the TRA to explore the predictive power of adolescent attitudes, norms, and history of use with regard to condom use intentions.

A review of major, relevant literature discussing adolescent health follows, covering the psychosocial, psychosexual, cognitive, and moral development of adolescents; psycho-social, risk, and protective factors associated with adolescent sexual activity; the major health effects of unprotected sex; adolescents and STD/AIDS; African American women and STD/AIDS; and TRA and STD/HIV health education interventions. The review includes a brief synopsis of the work of several classical and modern developmental theorists in order to present a more comprehensive view of the complex
psychosocial nature of adolescence and to explore the relationship between their psychosocial characteristics and health with specific attention to sexual health behavior.

Adolescent Health

Adolescent health is affected predominantly by the health-risk behaviors and choices made by adolescents. Three fourths of deaths during the teenage years are caused by social morbidities, including homicide, suicide, and unintentional injuries such as motor vehicle crashes (Resnick et al., 1997). Significant morbidity from unintended pregnancies and STD/HIV also occurs among school-age youths, young adults, and their children (Youth Risk Behavior Surveillance System [YRBSS], 1997). Most of the risk behaviors associated with death from cardiovascular disease and cancer begin during the adolescent years (YRBSS, 1997). A recent national survey (Resnick et al.) assessed various factors associated with four broad areas critical to the general health and well-being of adolescents: violence, substance use, emotional health, and sexuality. The same study examined social forces upon adolescent behavior and specifically noted the poorly understood connections of health-risk behavior and social forces, with much attention given to school and family as the dominant forces.

Psychosocial, Psychosexual, Cognitive, and Moral Development of Adolescents

Human behavior is complex; adolescent behavior is equally, if not more, complex because of the extreme biopsychosocial changes occurring during the adolescent years. To present a more complete view of the variety of scientific explanations and causative factors associated with adolescent behavior, adolescent psychosexual, psychosocial, cognitive,
and moral development in the work of Sigmund Freud, Eric Erikson, Jean Piaget, and Lawrence Kohlberg are briefly summarized in the following sections. An overview of several modern theorists completes the section: Carol Gilligan and her discussions of female moral development, David Elkind and his discussion of two critical adolescent psychological factors, and Richard Jessor with his discussion of adolescent risk taking and health.

Sigmund Freud and Psychosexual Development

Sigmund Freud’s description of psychosexual and personality development includes five stages: oral, anal, phallic, latency, and genital (Berger & Thompson, 1998; Corey, 1986). According to Freud, normal sexual development, known as the genital stage, begins around 11 years of age, following a period of sexual neutrality. The successful consequences of the phallic stage include the child’s adoption of gender-appropriate behavior and the moral code of his or her same-sex parent. Freud supported the idea that if children progress through each stage, developing ego and superego as they mature, they become socially and sexually well-adjusted individuals. Freud’s goal of a healthy life is to love and to work well. Freud’s theory supports the biological premise that adolescent sexual development begins fairly early, at around 11 years of age, and the psychosocial premise that adolescent social and sexual behavior are linked.

Eric Erikson and Psychosocial Development

Like Freud, Eric Erikson had a staged approach to human development but viewed Freud’s stages as limited and inadequate in number (Berger & Thompson, 1998). Erik-
son's eight stages span the entire life span: (a) trust versus mistrust, birth until 1 year of age; (b) autonomy versus shame and doubt, ages 1-3 years; (c) initiative versus guilt, ages 3-6 years; (d) industry versus inferiority, ages 7-11 years; (e) identity versus role confusion, adolescence; (f) intimacy versus isolation, young adulthood; (g) generativity versus stagnation, middle adulthood; and (h) integrity versus despair, older adulthood (Lefrancois, 1989).

Erikson's theory focused on the individual's relationship to his or her social environment (Berger & Thompson, 1998; Erikson, 1968). Each stage is marked by the successful interaction of the person with his or her environment, with total psychosocial success indicated and staged by the markers trust, autonomy, initiative, industry, identity, intimacy, generativity, and integrity. For adolescent development, it is important to note that at the stage of identity versus role confusion, adolescents try to figure "who" they are by establishing sexual, political, and career identities. Thus, according to Erikson, the pursuit and establishment of a sexual identity is inherent in the teen years.

Jean Piaget and Cognitive Development

Piagetian theory, described as the dominant cognitive developmental theory of this century, has had and continues to have a great impact on research and practice (Berger & Thompson, 1998). Jean Piaget is the major pioneer of cognitive theory. Cognitive theory focuses on the structure and development of thought processes in individuals and how those thought processes affect the person's understanding of the world. Piaget described four age-related stages of cognitive development: infants and the sensorimotor stage, pre-
school children and the preoperational stage, school-age children and the concrete operational stage, and adolescents and adults and the formal operational stage.

Piaget’s fourth stage, the formal operational stage, marks the individual’s ability to think hypothetically and abstractly (Berger & Thompson, 1998; Lefrancois, 1989; Piaget, 1973). The adolescent at this stage can think about thinking and speculate about the possible as well as the real. This stage differs dramatically from the concrete operational stage, marked by the child’s ability to think logically in a consistent way, but only with regard to real and concrete features of their world, not abstract situations.

Major cognitive acquisitions at the formal operational stage include the adolescents’ interest and involvement in ethics, politics, and social and moral issues (Berger & Thompson, 1998). The adolescent at this point is able to undertake a broader and more theoretical approach to experience. According to Piaget, the adolescents’ interest and involvement in social issues is a milestone of the adolescent years.

**Lawrence Kohlberg and Moral Development**

Lawrence Kohlberg built his moral reasoning theory upon Piaget’s theories and research (Berger & Thompson, 1998). His theory was based upon the presentation of a set of hypothetical stories that posed ethical dilemmas to children, adolescents, and adults (Kohlberg, 1980; Lefrancois, 1989). The results of his studies brought forth the child’s conceptions and reasoning surrounding the conflict between property rights and human need and the value of human life. Kohlberg found three levels of moral reasoning: (a) pre-conventional, (b) conventional, and (c) postconventional. Each level has two stages: pre-conventional has a punishment and obedience stage and instrumental and relativist orient-
ation; conventional has “good girl” and “nice boy” and “law and order”; and postconven-
tional has social contract and universal ethical principles. Kohlberg placed people in stages
on the basis of the reasoning behind their response compared with their specific moral
conclusions. His research suggested that people progress through the moral stages slowly
as they mature and that moral situations in their social life advance the process. Kohlberg
believed children rarely surpass stage four, even during adolescence, because they lack life
experiences and responsibility. Kohlberg emphasized the link between moral progression
and social life experiences that brings forth an additional justification for attention to the
psychosocial factors surrounding adolescent behavior.

Carol Gilligan and Moral Development

Adolescence is thought to be the time of greatest difficulty in moral behavior and
the most rapid period of growth in moral development. In Carol Gilligan’s (1982) theory
of moral development, the significant differences between male and female views of moral
dilemmas are emphasized. The author supported the concept that females give greater
consideration to the social context of moral choice. Females focus on the human relation-
ships involved; they are reluctant to judge right and wrong in absolute terms because they
are socialized to be nurturing, caring, and nonjudgmental. According to Gilligan, females
develop a morality of compassion and care more than they develop a morality of justice
and judgement. Females exhibit a reluctance to judge and have an overriding concern with
relationships and social responsibilities (Lefrancois, 1989). Gilligan described female
morality in terms of care and concern, a basic part of female psychology. Of note here is
the focus upon female morality and the importance of the social context of moral choice for females.

David Elkind and Cognitive and Social Development

David Elkind (1987) is an expert in children’s cognitive and social development and a strong proponent of Jean Piaget’s work. Much of Elkind’s work is prefaced by a discussion of Piagetian psychology. Elkind described adolescent thinking in Piagetian terms as taking adolescents beyond the here and now into the realm of possibilities. Piaget explored the leap from the here-and-now concrete world of the younger child to the futuristic world of possibilities of the adolescent. Elkind noted that Piaget described the ability of teens to think about thinking; younger children think but do not think about thinking. Elkind elaborated upon this process and developed his theory of the imaginary audience: a cognitive structure with roots in the adolescent’s newly acquired mental capacity. He described the adolescent’s infatuation with thinking and his or her obsession with the idea of other people thinking and with what other people are thinking about. According to Elkind, adolescents think about themselves a great deal, and they believe that everyone else is thinking about them also. The concept of the imaginary audience helps to explain the self-consciousness of adolescents: everyone is observing them. Believing that everyone is observing them has another facet beyond self-consciousness; adolescents want to be observed and thought about. This confirms their sense of specialness. This concept can affect health behavior for the adolescent. Adolescents may be reluctant to seek contraceptives because of the imaginary audience. They are concerned about what the health care provider might be thinking about them, or they may be too self-
conscious to even visit a clinic because of the perception that everyone is watching what he or she is doing.

Another cognitive structure Elkind (1984) derived from Piaget's formal operational thinking is termed the personal fable. Elkind described the personal fable:

If everyone is watching you and thinking about you—thanks to the imaginary audience—then you must be somebody special, somebody unique and different. Other people will grow old and die but not you! Other people will not realize their ambitions, but you will, and so on. (p. 385)

A very important piece of this cognitive structure that affects adolescent risk-taking is the notion that the fable cloaks the teen in a shield of invulnerability, protecting him or her at all times and under all circumstances.

Elkind (1984) described the numerous implications of the personal fable for health, including the fable that tells the adolescent that "other people will get herpes but not me" (p. 385); therefore, there is no need to use condoms. This same concept can be applied to pregnancy, AIDS, safety threats of driving while intoxicated, and beyond. The addition of alcohol and drugs not only enhances the fable but also creates the likelihood of abuse because again the fable tells the adolescent that others become alcoholics and drug addicts but not him or her (Elkind).

Both the imaginary audience and the personal fable play a role in the exacerbation of existing health problems and the creation of new problems. Elkind (1987) devoted a portion of his writings to the discussion of adolescent health and the concepts of the imaginary audience and the personal fable.
Richard Jessor and Psychosocial Risk Factors

Richard Jessor (1993) has a number of studies dealing with the adolescent, psychosocial risk factors, and problem behaviors that draw upon and link most of the work from the theorists and behaviorists previously mentioned.

Jessor (1991) drew upon patterns of human behavior that affect health and safety. Examples of such patterns or interactions include smoking and lung disease, alcohol and driving, and alcohol and unprotected sex. The challenge of examining human behavior and the link to illness has moved epidemiologists to form a strong alliance with social, interpersonal, and developmental psychologists in an effort to understand what drives health behavior and what interventions and preventions can change or deter unhealthy patterns (Jessor).

Jessor (1982) spoke specifically to what is termed risk behavior and the idea that risk behavior for adolescents does not always incur undesirable outcomes. He used marijuana smoking as an example; the negative outcomes of marijuana smoking are an increase in the probability of pulmonary disease, possible legal consequences, loss of interest in school, or parental conflict. At the same time, Jessor gave attention to the positive outcomes associated with marijuana use and adolescent development, such as social acceptance by peers, a sense of autonomy associated with identity development, and a sense of maturity in the ability to make a personal choice similar to the choices of adults.

Jessor (1982) called for a cost-benefit analysis of risk behavior compared with a cost-only approach and emphasized that risk behavior can serve important social and personal functions for the adolescent and is unlikely to be abandoned in the absence of suitable and equally fulfilling alternatives. According to Jessor, risk behaviors during
adolescence are functional, purposeful, instrumental, and goal directed and are often central to adolescent development. He cited smoking, drinking, early sexual activity, and other risk behaviors as instrumental in establishing autonomy from parents; repudiating the norms and values of conventional authority; coping with anxiety, frustration, and the anticipation of failure (especially in the convoluted world of adolescent relationships, competitive sports, and academics); and in affirming maturity or marking a transition out of childhood and toward a more adult status.

Jessor (1993) brought special attention to adolescent behavior as marking a stage of transition or transformation. Developmental transition from a psychosocial perspective places emphasis upon personal and social identity, or how one identifies himself or herself and how he or she is defined by important others. Developmental shifts are found in the realm of behavior-defined statuses such as virgin to nonvirgin, socially defined statuses such as student to employee, and personally defined statuses such as feeling dependent to feeling autonomous and self-sufficient (Jessor, 1982).

Jessor (1991) discussed a risk behavior syndrome, or clustering of risk behaviors, and supported approaches to altering the risk behaviors from a more generalized perspective, which he deemed a proneness toward problem behavior. He directed intervention and prevention efforts to the total adolescent, with attention given to personality, social environment, perceived environment, behavioral view, and biology and genetics.

Jessor (1991) also discussed protective factors such as high intelligence, quality schools, cohesive family, neighborhood resources, interested adults, models for conventional behavior, high controls against deviant behavior, value on achievement, value on health, intolerance of deviance, church attendance, and involvement in schools and vol-
untary clubs. The current study examined family connectedness and religiosity-spirituality as possible protective factors.

Summary of Theorists and Experts

The previous review highlights the complexities surrounding adolescent cognitive, psychosocial, psychosexual, moral, and identity development. The practical outcomes of adolescent behaviors cannot be seen as corrupt or unreasonable or as possessing psychological or social morbidity if simultaneous consideration is given to what is considered appropriate according to the theorists and experts in human development: to love, to work, and to establish normal sexual relationships (Freud); to seek intimacy and establish one’s personal, career, and sexual identity (Erikson); to think abstractly and consider possibilities (Piaget); to be concerned with the welfare of others (Kohlberg); as a female, to be caring, nurturing, and concerned with relationships (Gilligan); to believe that all others are equally concerned with self and that one possesses invincibility (Elkind); and to engage in sexual behaviors as a means of affirming maturity and marking transition to adult status (Jessor).

Adolescent sexual behavior, when viewed from this multidimensional analysis, becomes an expected element of adolescent development; this helps to explain why such behavior is so difficult to change. For females, in particular, it is part of relationship building that is central to female psychosocial and moral development.

Risk behavior takes on an expanded view when discussed in terms of it being any behavior that can compromise the psychosocial aspects of successful adolescent development (Jessor, 1991).
Unprotected sexual intercourse is a health risk behavior and a concern of health educators, but as Jessor (1991) pointed out, few adolescents engage in unprotected sex for the thrill of beating the odds of becoming pregnant or contracting STDs; there is method to their madness, so to speak. Creating an awareness of adolescents' health risk, understanding the complexities surrounding adolescents' choice to engage in such risk behavior, and designing prevention and intervention programs that effectively change the risk behavior are several of the challenges for health educators.

Psychosocial Factors Associated with Adolescent Sexual Activity

Three factors—religiosity-spirituality, family connectedness, and depression—were included in the current study in order to examine the impact of these specific psychosocial factors upon adolescent behavioral intentions to engage in sexual intercourse. The need to include psychosocial factors has been emphasized in the previous sections. As previously mentioned, three specific factors are considered because two of them (religiosity-spirituality and family connectedness) are deemed protective factors and one (depression) may be a risk factor; because these specific factors were of interest, questions regarding these specific psychosocial factors were included in the original questionnaire and interview.

Religiosity

Miller and Moore (1990) discussed the impact of religion on young women and noted an inverse relationship in that the more religious young women, if sexually active, were less likely to use contraception. These authors supported religiosity as a risk factor with regard to the use of contraceptives. Certain religions influence social norms regard-
ing women's sexuality. For example, the Roman Catholic church equates sexual intercourse with procreation, thus affecting contraceptive behavior. An extended literature review, however, uncovered greater support for religiosity as a protective factor rather than a risk factor with regard to engaging in sexual intercourse and using contraceptives.

Poulson, Eppler, Satterwhite, Wuensch, and Bass (1998) found that college women with strong religious beliefs were less likely to engage in unprotected sex than were female participants with weaker religious convictions. A similar study (Dunne, Edwards, Lucke, Donald, & Raphael, 1994) found that those adolescents and young adults 16 to 21 years of age who perceived religion to be important in their lives were less likely to have had intercourse, but among the sexually active, religious youth did not differ from their peers in recent condom use, the age at which they first used condoms, or the rate of partner change.

Another study (Ellis & Wagemann, 1993) examining maternal religiosity (importance of religion and frequency of church attendance) compared with female offspring religiosity found that female offspring were more religious than male offspring and that their religiosity more closely resembled that of their mothers than did the religiosity of male offspring. Examination of the contraceptive behavior of Hispanic females 15 to 19 years of age (Durant, Seymore, Pendergrast, & Beckman, 1990) found that poor contraceptive behavior was associated with lower frequency of church attendance.

In their comparison of Adventist adolescents and American adolescents in general, Weinbender and Rossignol (1996) noted that, in 1989, Adventist adolescent sexual activity averaged 21.6% for males and females from the ninth through twelfth grade compared with 54.2% for American adolescents from 1992 CDC figures. The same study
pointed to other American adolescent behaviors associated with early sexual activity found acceptable to American culture but not to the Adventist religion. Those behaviors included ingesting caffeinated beverages and engaging in certain types of popular entertainment such as going to movies. The Adventist’s beliefs include “healthful living,” the belief that sound thinking depends on good physical health and spirituality depends on sound thinking (p. 267).

Wyatt and Dunn (1991) reported higher levels of sex guilt in African American women than in Caucasian women, with no significant relationship to frequency of church attendance. Caucasian women experienced more sex guilt associated with higher frequency of church attendance; African American women did not, but still maintained higher levels of sex guilt than Caucasians (Wyatt & Dunn).

An earlier study by Durant and Sanders (1989) noted a significant inverse relationship between religious attendance and frequency of sexual intercourse among unmarried sexually active females, which was much stronger among Caucasians than African Americans. This study indicated that frequency of church attendance affects frequency of sexual intercourse to a lesser extent for African Americans than for Caucasians. The study suggested that church attendance has a less protective effect on African American females.

Religious practices and beliefs have been reported as protective factors in the studies previously mentioned and others. More important than identifying with a particular religious group are the strength of religious belief, the frequency of church attendance, and the value of religion (Thornton & Camburn, 1987). According to Thornton and Camburn, those adolescents who attend church frequently and value religion are the least permissive and less sexually involved. In a description of Add Health, a nationwide longitudinal study
on adolescent health, Resnick et al. (1997) also reported an association between delayed sexual debut and higher levels of importance given to religion and prayer.

**Spirituality**

Measuring spirituality is not like measuring religiosity, which uses quantifiers such as frequency of church attendance, value of religion, and strength of religious belief. Spirituality is irrespective of religious or nonreligious backgrounds.

Some discussion of adolescent spirituality is included to examine adolescent spiritual development as another dimension to be included within a comprehensive view of adolescent behavior. James Fowler (1978, as cited in Parrott, 1995) delineated three paired stages of faith development of adolescent spirituality: mythical-literal faith, synthetic-conventional faith, and individual-reflective faith. Fowler’s stages correlate quite closely with Piaget’s stages of cognitive development.

Mythical-literal faith is the first stage at which most adolescents begin their journey (Parrott, 1995). Adolescents respond to religion according to their cognitive capacity, which is the preteen or concrete level, and view religious stories and music in literal concrete ways. God is somewhere in the sky. They are accepting of their religious heritage with no questions asked.

The second stage, synthetic-conventional faith, correlates with the early teen years and with the adolescent’s increased capacity to think abstractly (Parrott, 1995). At this stage, the adolescent task is to relate his or her own views of religion with the incompatible views of others. God is thought of as a personal advisor and guide, but in a less personalized fashion.
The final stage is individual-reflective faith (Parrott, 1995). Adolescents who reach this stage engage in critical self-reflection and an examination of their beliefs and values. This critical examination leads to individual and personal religious beliefs. God is viewed in more abstract ways and as a spirit embodying moral truths and personal presence rather than a personal advisor.

Developmentally, adolescent spirituality follows the same cognitive path previously outlined by Piaget and other cognitive development theorists. Further study is indicated to examine the effects of spirituality upon the adolescents’ concept of self, others, and a higher power and the relationship of these connections to self-efficacy, self-esteem, healthy lifestyle, participation in health risk behaviors, and the practice of safer sex behaviors and other health-enhancing behaviors.

Appropriate survey tools would need to be sensitive to gender, culture, age, and race in regard to spirituality. An examination of spiritual beliefs could include questions used to stage adolescents’ spirituality in Fowler’s approach and the transtheoretical model.

**Family Connectedness**

Metzler et al. (1994) suggested that a protective factor is found among adolescents from a noncoercive, monitoring, and supportive family environment in relation to a number of variables ranging from deviant behavior to managing an STD. They found in their study of 609 adolescents that poor parental monitoring and less parent availability were related to more sexual risk-taking. The same study reported that adolescents who were involved with their family reported less conflict and that more intact families did a better job of supervising their teens.
The National Longitudinal Study on Adolescent Health is a study of 26,666 students in Grades 7 through 12 for a 1-year period (1994-1995; Resnick et al., 1997). All 26,666 students were from U.S. high schools with at least 30 enrollees in the school and an eleventh grade class. The authors described parent-family connectedness as a protective factor against every health risk behavior measure except history of pregnancy. The variables examined in the study included emotional distress; suicidality; violence; substance use, including tobacco, alcohol, and marijuana; and sexual behaviors, including age of sexual debut and pregnancy history. Several factors were associated with delaying sexual debut, including parental disapproval of their adolescent being sexually active, high levels of parent-family connectedness, and parental disapproval of their adolescents using contraception.

Depression

A review of the literature addressing adolescent depression and sexual activity found varying results, from no significant effect to both negative and positive effects, with regard to sexual risk taking. Bardone et al. (1998) examined the young adult physical health outcomes of 459 female adolescents and found the relative risk of depressed girls contracting an STD not significantly different from that of the healthy control group risk.

Another study (Kowaleski-Jones & Mott, 1998) examined data on 959 adolescents born to young mothers and found above-average levels of depression associated with engaging in sexual activity. The same study described a link for adolescent females between depression and each of the following: early intercourse, not using contraceptives,
and having a child. The link between having sex and feeling depressed is emphasized for female respondents versus male respondents.

Another study (Tubman, Windle, & Windle, 1996) examined the link between shy, withdrawn children and adolescent sexual activity, noting that shy, withdrawn behavior as a child may guard the adolescent from externalizing behaviors and may lead to an alienating interpersonal style. According to these authors, an alienating interpersonal style as a child that continues into adolescence may reduce the opportunity for sexual activity.

Among a group of 753 adolescents attending a rural university adolescent clinic, Burns et al. (2000) found significant differences between low depression patients and high depression patients and their degree of adolescent risk-taking behavior including unsafe sexual activity. The authors concluded that depression is associated with higher involvement in unsafe sexual activity, drug abuse, violence, tobacco use, poor family and peer relationships, academic failure, and other health risk behaviors.

Major Health Effects of Unprotected Sex

The primary route of acquiring HIV for adolescents is unprotected sex (Stevenson et al., 1995). In the United States, AIDS is the sixth leading cause of death for individuals 15 to 24 years of age (Morbidity and Mortality Weekly Review, [MMWR], 1998). Another consequence of unprotected sex among adolescents is the contraction of STDs such as syphilis, genital herpes, gonorrhea, chlamydia, and human papilloma virus infection, with the highest rates found among 15- to 19-year-olds. The increased rates of STD have led to higher incidences of pelvic inflammatory disease, infertility, cervical cancer, and ectopic pregnancies among adolescents (Trotto, 1999).
Adolescents, STD, and AIDS

Over the past 2 decades, there has been a steady increase in the number of sexually active teens (CDC, 1996). Studies have shown that by 20 years of age, 75% of females and 86% of males have experienced sexual intercourse, with less than 40% of this particular age group reporting condom use at last intercourse (CDC, 1996). As a result, adolescent pregnancy, STDs, and HIV infections are at epidemic proportions (Trotto, 1999). Chlamydia, gonorrhea, and human papilloma virus infection rates are highest among 15- to 19-year-olds as a result of unprotected sexual behavior (CDC, 1996).

Among heterosexuals, STD rates are higher for females than males, probably because females are more likely to acquire an STD following a single act of unprotected intercourse with an infected partner (Grimley & Lee, 1997). Condoms are widely available, and the general public is aware of the recognized effectiveness as a barrier to infections, yet the acquisition of STDs and AIDS remains disturbingly high among young adults and adolescents.

Women represent the population that has experienced the most rapid growth in the number of AIDS cases. Over 6 million women each year acquire STDs; 15-20 million women are chronically infected with either the herpes virus or the human papilloma virus (Lewis & Bernstein, 1996). The proportion of all AIDS cases among adolescent and adult females tripled from the years 1985 to 1998; 1998 studies show that 23% of AIDS cases were from this group (CDC, 2000b). HIV/AIDS remains among the leading causes of death among women 25 to 44 years of age; among African American women in the same age category, AIDS is the number one cause of death (CDC, 2000b).
African American Women and STD/AIDS

Minority females, especially African American women, are disproportionately affected by STDs and HIV. Approximately 55% of AIDS cases are reported among African American women 20 to 29 years of age, whereas Caucasian women account for 23% and Latino women account for 21% (CDC, 2000a). The AIDS rate for African American women 13 to 65 years of age or older is 2.6 times higher than that of same-aged Caucasian women (CDC). AIDS cases attributable to heterosexual transmission are increasing faster than any other exposure category.

In 1996, gonorrhea rates for all race and ethnic groups were below the Healthy People 2000 target of 100 per 100,000, except for African Americans with 812 per 100,000 (Healthy People 2000, 1996). The highest rates of gonorrhea are found in 15- to 19-year-old women. The rates of syphilis and gonorrhea among African Americans are approximately 60 and 40 times, respectively, the rates found in Caucasians. Gonorrhea rates in African American adolescents 15 to 19 years of age are approximately 25 times greater than in Caucasian adolescents (Healthy People 2000).

Appropriate and consistent condom use prohibits the transmission of viral and bacterial pathogens, thereby reducing the risk of acquiring HIV and STD. STD and HIV risk-reduction intervention requires examining the factors associated with nonuse of condoms during intercourse. The literature suggests that numerous psychosocial, relational, economic, behavioral, power, and gender-related factors may influence the use of condoms by economically disadvantaged African American women.

The AIDS in Multiethnic Neighborhoods (AMEN) study, a community-based household probability sample of single men and women in the San Francisco area, revealed
that 74% of African American women reported nonuse of condoms during sexual intercourse (Catania et al., 1992). In another study, primarily of African American females attending an inner city hospital, Overby and Kegeles (1994) reported nonuse of condoms over 50% of the time during sexual intercourse.

Southern African American Women and STD/AIDS

Because the sample for the present research was predominantly African American, southern, female adolescents, it is important to review STD/HIV information for the specific group. For the last 2 decades, the southern region of the United States has consistently had higher rates of syphilis and gonorrhea than other regions of the country (CDC, 1998c). Also, during 1996-1998, the South had the highest rate of chlamydia. Differences in ethnic and racial distribution of the population, poverty, and availability and quality of health care services are listed as possible reasons (CDC). The highest rates of gonorrhea in 1998 were among 15- to 19-year-old African American females; those rates were over 20 times higher for African American females than for Caucasian females (CDC). There is also a high HIV prevalence among childbearing women living in the South (CDC). It is important to note that STDs facilitate HIV transmission at least two- to fivefold (CDC). These rates emphasize the need for concentrated prevention and intervention efforts designed for populations such as the current one.

TRA and STD and HIV Health Education Interventions

The TRA (Ajzen & Fishbein, 1980) is a cognitive model that suggests an individual's intention to perform a specific behavior is a function of his or her attitude regarding
performing the behavior and his or her perception regarding the social norms about the behavior. Attitudes are predicted by the individual’s beliefs about the consequences of performing the behavior multiplied by that individual’s evaluation of these consequences. The individual’s subjective norm is a function of his or her perception of social support for performance of the specific behavior multiplied by motivation to comply with the wishes of those individuals included in the subjective norm. All other variables are assumed to influence intention and future behavior through attitude and social norm. Past behavior or experience with the attitude object has been found to predict subsequent behavior beyond prediction attributable to attitude and perceived social norms (Baker et al., 1996). Teens who use condoms at first intercourse are 20 times more likely to use condoms in subsequent acts (CDC, 1998a).

TRA has been used by several authors (Baker et al., 1996; Basen-Engquist & Parcel, 1992) to predict condom use. Baker and colleagues (1996) found in their study examining the decision to use condoms by patients in an STD population that attitude and social norm accounted for a large proportion of the variance in intention to use condoms for both men and women. Their findings also suggested that prior experience with condoms influences intention to use condoms in the future, but the authors did not investigate the mechanism for the influence. They suggested self-efficacy as a possible mechanism. In the same study, Baker and colleagues found that the interaction of attitude and norm is an important predictor to use condoms for steady partners but not for casual partners. They also found that the clinic patients had stronger intentions toward using condoms with casual partners than with steady partners.
Basen-Engquist and Parcel (1992) applied the TRA and self-efficacy to adolescents' sexual behavior, specifically the decision to have or abstain from sexual intercourse and the frequency of condom use. Participants' attitudes toward the behaviors, their perceptions of the subjective norm, and their self-efficacy about skills and abilities relevant to the behaviors were used to predict the intention to perform the behaviors.

The findings (Basen-Engquist & Parcel, 1992) supported the relationship among attitudes, norms, self-efficacy, and behavioral intentions regarding the decision to have or abstain from sexual intercourse. Attitudes and self-efficacy were related to condom use intentions. Attitudes, norms, and intentions were related to the number of sexual partners, and self-efficacy and intentions were related to condom use frequency. Social norms were found to be the weakest predictor of intention and behavior when friends were used as the referent. The authors suggested that the use of actual or potential, or both, partners as a potentially stronger referent group. Broad-based educational efforts, including education in the school, increased availability of condoms, patient counseling, and mass media information campaigns, were suggested as intervention measures for adolescents. For future research, the authors suggested a more complete integration of the social learning theory (SLT) and the TRA to examine a more complete picture of cognitive and social factors affecting adolescents' sexual behavior and also to address a large proportion of unexplained variance.

Stevenson et al. (1995) suggested the use of TRA because of the importance of examining social influence on engaging in protected and unprotected intercourse. Social influence affects the protective behavior, as indicated by attitudinal discrepancies described by Stevenson and colleagues. The authors stated that there are adolescents who truly
believe in the concept of engaging in safer sexual activities, but when asked about specific behaviors to do so, the adolescents' responses change in the direction of less protective actions (Stevenson et al.). The socially undesirable items reflected concerns of what others would think if they engaged in some type of protective sexual behavior. These authors also suggested the use of health education programs that are sensitive to gender and culture.

These studies support the importance of (a) examining adolescent behavior, (b) examining psychosocial factors with regard to adolescent sexual behavior, (c) examining adolescent contraceptive behavior, and (d) using the TRA. Findings from the current study can be applied to the development of developmentally appropriate interventions, which include attention to psychosocial and theoretical factors that affect an adolescent's intentions to engage in sexual intercourse and use contraceptives.
CHAPTER 3
METHODOLOGY

The responses from a sample of 94 female adolescents from Jefferson County, Alabama, were examined to determine the following: (a) the ability of three psychosocial variables to predict intentions to have sexual intercourse and (b) the ability of three variables based upon TRA constructs and an extension of the theory to predict condom use.

The dual purpose of this study was to document (a) whether and to what degree religiosity-spirituality, depression, and family connectedness were predictive of intentions to have sexual intercourse and (b) whether and to what degree attitude toward condom use, partner and peer norms, and history of condom use were predictive of intentions to use condoms.

This study was an observational study. The data used for the present study were taken from the original Teenage Access Project (TAP) research data (Sturdevant, Kohler, Williams, & Johnson, 1998). Data collection methods for the current study and the original study were the same. Sampling methodology and sample description are provided in detail in this chapter.

The Teenage Access Project (TAP) Model

The Special Projects of National Significance (SPONS), HIV/AIDS Bureau, Health Resources and Services Administration, provided support for the original TAP. TAP was originated by the Section of Adolescent Medicine, Division of General Pediatrics.
and Adolescent Medicine, Department of Pediatrics, University of Alabama School of Medicine, Birmingham, Alabama. TAP’s primary purpose was to ensure and expand access through several mechanisms to health and support services for disadvantaged, HIV-positive, and at-risk adolescent and young adult females (Sturdevant et al., 1998).

The mechanisms of the three primary goals of TAP were (a) facilitating referrals to medical and psychosocial services through TAP activities, (b) providing HIV counseling and testing to increase screening of young women, and (c) preventing further HIV transmission in females 12 to 21 years of age through empowerment enhancing and risk-reduction activities (Sturdevant et al., 1998).

TAP was originally designed as a behavioral intervention based upon the SLT and the theory of gender and power, which addresses norms governing social sexual relations (Wingood & DiClemente, 1995). Self-efficacy and the process of empowerment were advocated for the young women participating in TAP through My Individual Responsibility Reduces Our Risk (MIRROR) activities. MIRROR was a six-module risk-reduction and empowerment activity using a small group format. MIRROR’s goal was to encourage young women to protect themselves and their loved ones through the risk-reduction and empowerment activities. The MIRROR curriculum also included negotiation strategies and group support for personal safety and protection. TAP provided a gender-specific, developmentally appropriate, and theory-based risk reduction intervention. The risk reduction intervention included strategies for protection and empowerment.

Over 400 young people were served by TAP from the years 1994 to 1997. Potential participants were targeted through outreach efforts directed toward community agencies located in Jefferson County serving high-risk, disadvantaged young women. Agencies
included The Salvation Army Residential Center for Youth, various community centers with girls’ basketball and volleyball teams, The United Methodist Children’s Home, alternative schools in Jefferson County, General Education Diploma (GED) preparation programs, the City Program of Birmingham (a community alternative sentencing program for delinquent youth), and other similar programs in the Jefferson county area. Outreach efforts included presentations to adult staff members of the youth-oriented agencies and presentations to actual agency clients themselves. Preliminary efforts focused on presentations regarding the risk-reduction, HIV-counseling and -testing services offered through TAP, as well as identification of agency needs. Adjustments to accommodate agency needs were made in the risk-reduction and empowerment component (MIRROR), which was the proposed community-based program.

TAP was staffed by (a) an African American social worker, who functioned as the MIRROR coordinator and was primary author of the MIRROR risk-reduction intervention; (b) an African American nurse, who functioned as the HIV-testing coordinator, HIV-testing nurse, and co-facilitator of the MIRROR groups; (c) an African American health educator, who functioned as research interviewer and follow-up coordinator and; (d) an African American office support staff person who was responsible for staff meeting minutes, mailing, copying, purchase of incentives, and general office support of the project (Sturdevant et al., 1998). MIRROR group facilitators and HIV-counseling and -testing staff were all health professionals with experience and special training in working with at-risk, disadvantaged adolescent females.

TAP targeted female clients served by youth-oriented agencies in Jefferson County. Original contact with the youth-oriented agencies was accomplished through a tele-
phone call to staff members of the agencies by a TAP social worker, during which the services of TAP were explained. During a subsequent face-to-face meeting with adult staff members of the various agencies, TAP staff members explained the community-based MIRROR curriculum and the availability of clinic and on-site HIV testing and counseling. Identification of specific needs of the agency clients, estimates of potential participants, and concerns of the agency staff regarding the project were also determined at these original face-to-face encounters. The evaluation component and informed consent process were also explained.

After the face-to-face meetings were completed, an appropriate community agency representative signed a letter of agreement to participate. TAP staff then met with potential participants from each agency to offer enrollment in the MIRROR sessions. Prior to beginning MIRROR, baseline interviews and questionnaires were completed. Enrollment for TAP services was accomplished either by first attendance at MIRROR or through the Adolescent Testing Center (ATC). ATC, located in the Adolescent Health Center of the Children’s Hospital of Alabama, was a clinical center that provided age- and culturally appropriate HIV testing, pretest and posttest counseling, risk assessment, and referrals.

TAP affected 403 participants in a variety of ways: family planning, HIV risk assessment, HIV pretest counseling, HIV posttest counseling, HIV prevention, group counseling, crisis intervention, practical support, and general information and referral. For all youth participating in the various components of TAP, anonymous, identifier-linked evaluation information was collected.

A research subset of the original TAP participants included only sexually active females 12 to 21 years of age. This subset (n = 111) of adolescent girls volunteered to
participate in the service portion and agreed to complete both the paper questionnaire and the face-to-face interview. Each participant consented in writing to be part of the confidential research component for evaluative purposes. To participate in this component, informed consent was necessary with any females over 14 years of age and consent of a parent or guardian for any females under 14 years of age. The final subset of respondents included those adolescents who chose to participate and complete both the questionnaire and interview. The research component of the project included the collection of more complete behavioral and attitudinal information.

As previously stated, the third primary goal of TAP was to prevent further HIV transmission in females 12 to 21 years of age through empowerment and risk-reduction activities. The intervention included participation in MIRROR activities and was designed to fulfill the third primary goal by providing strategies for risk reduction and empowerment for sexually active adolescents. Therefore, only sexually active females were included in the research subset. Follow-up completion of the questionnaire and interview were provided as mechanisms to determine the efficacy of the intervention. Responses were examined for changes in attitudes, knowledge, and behavior. Adolescents who were not sexually active did not participate in the research component because the intervention was designed for sexually active adolescents only.

Participants entered TAP at various dates between July 1994 and February 1997. Both the baseline questionnaire and the baseline interview were completed prior to participation in the intervention; each took approximately 1 hr to complete, and both were administered by the TAP research assistant. The interviewer (research assistant) read the interview as written to participants; the questions and answers were included in the
interview. Participants chose from the written answers. Original data were collected by a health educator from July 1994 to February 1997. All respondents to be included in the secondary analysis completed a 162-item baseline questionnaire and a 133-item base-line interview.

As previously mentioned, there were three primary goals: (a) prevent further HIV transmission in disadvantaged adolescent females 10 to 21 years of age, (b) increase screening of young people by providing HIV testing and counseling, and (c) facilitate referrals to psychological and medical services. Evaluation of the goals found significant improvement in AIDS knowledge scores; 169 young people were tested for HIV, with all test results negative. Over 1,000 referrals were made for various medical, social, and psychological services.

Sampling

The Institutional Review Board of the University of Alabama at Birmingham reviewed and approved the project on December 12, 1999 (Appendix B); the original TAP was approved September 8, 1993. An examination of the responses from a sample of 94 sexually active female adolescents 14 to 19 years of age from several youth-oriented agencies in Jefferson County was conducted to find (a) the predictive ability of three psychosocial factors in an analysis of the respondents’ intentions to have sex and (b) the predictive ability of TRA constructs including history of use in an analysis of condom use. Psychosocial variables included family connectedness, religiosity-spirituality, and depression. The following TRA constructs were used in a second prediction model to examine the respondents’ intentions to use condoms: respondents’ attitude toward the behavior;
respondents’ perception of subjective norm, including partner and peer norms; and an extra-attitudinal factor, history of condom use (Baker et al., 1996; Bentler & Speckart, 1979).

Description of the Sample

The sample selected for the current investigation included all respondents from the original TAP cohort 14 to 19 years of age who completed both a baseline written questionnaire and a baseline face-to-face interview. The current study examined 94 of the 111 females participating in the confidential data collection activities of the project. Seventeen respondents were excluded because of either age (because the current study examined only those females ages 14 to 19 years) or lack of completion of both the interview and the questionnaire. The investigation included 94 adolescent females, 87 African American (93%), 6 Caucasian (6%), and 1 Other (1%). Although the sample size was relatively small, the numbers were adequate to generate a reliable regression equation in the social sciences (Stevens, 1996).

Although the sample group was small, because the sample was composed predominantly of African American, sexually active, at-risk, underprivileged adolescent females from Jefferson County, Alabama, an analysis of certain characteristics of the group could be of benefit to health behaviorists. Such data sets are not readily available, especially data sets containing information regarding adolescent sexual behavior.
Data Collection Instruments

The questionnaire and interview were developed by an evaluator from the School of Public Health, University of Alabama at Birmingham (SPONS Site Visit Report, 1996). The instruments were pilot tested. Practices consistent with proper construction of measurement instruments were followed. Internal consistency and test-retest reliability met generally agreed upon standards for acceptability. The overall standardized item alpha for the instrument was .8004, and the alpha for the HIV knowledge scale was .6216 (SPONS Site Visit Report).

Content validity was verified with emphasis on cultural and adolescent sensitivity. Instructions and content were written at an appropriate literacy level for the target population so that it could be self-administered or read to the subject. The reading level was found to be at Grade 7 as determined by the Simplified Measure of Gobbledegook (SMOG) readability assessment (SPONS Site Visit Report, 1996).

The evaluator observed the administration of the instruments for consistency of administration and continued to do so periodically throughout the project period. Administration was found to be consistent across subjects, whether self-administered or read to them.

Measurement of Predictor Variables

The following subsections describe each of the theoretical and psychosocial variables included in the prediction equation and specific measurement using questions from the baseline questionnaire and interview. Table 1 outlines the location of specific questions for each variable.
Table 1

**Variables and Their Matching Questionnaire or Interview Item**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Questionnaire</th>
<th>Interview</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Race</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Year of school completed</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>Household income</td>
<td>11</td>
<td></td>
</tr>
<tr>
<td>Marital status</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>Intentions to engage in sexual intercourse</td>
<td>130</td>
<td></td>
</tr>
<tr>
<td>Intentions to use condoms</td>
<td>131</td>
<td></td>
</tr>
<tr>
<td>Family connectedness</td>
<td>7-18</td>
<td></td>
</tr>
<tr>
<td>Depression</td>
<td>143-162</td>
<td>16-17</td>
</tr>
<tr>
<td>Religiosity-spirituality</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Attitude toward condom use</td>
<td>93-115</td>
<td></td>
</tr>
<tr>
<td>Peer norms</td>
<td>21, 22, 26</td>
<td></td>
</tr>
<tr>
<td>Partner norms</td>
<td>28, 29, 31-39</td>
<td></td>
</tr>
<tr>
<td>Condom use history</td>
<td>32</td>
<td></td>
</tr>
</tbody>
</table>

**Intentions to Engage in Sexual Intercourse**

Intentions to engage in sexual intercourse was measured using one question (Interview question 130: "Do you intend to have vaginal sex in the next 3 months?") Possible responses included yes, no, and don't know. If the respondents answered yes, then they proceeded to the question regarding condom use.

**Family Connectedness**

Family connectedness was measured by participant responses to 13 questions (Questions 7-19; see Appendix A) from the questionnaire (SPONS Site Visit Report, 1996). The questions were formulated by a health behaviorist, a program evaluator, and an
adolescent-care physician from the University of Alabama at Birmingham. In order to establish the existence of internal consistency for the family connectedness questions, a Cronbach's alpha was performed. Cronbach’s alpha is based on the average interitem correlation. Cronbach’s alpha for the family connectedness questions was found to be acceptable and reliable (alpha = .74). Any responses indicative of family connectedness were assigned a positive numerical score, indicating the presence of family adaptability, cohesion, and social support. A composite score was obtained for each respondent for use in the statistical analysis.

Depression

Depression was measured by participant responses to the Center for Epidemiologic Studies-Depression Scale (CES-D; Radloff, 1991); the CES-D was included in the questionnaire (Questions 143 to 162; see Appendix A). Participants were to check either none/few or many times when answering questions regarding their affect, attitudes, and sleeping and eating habits. Those participants checking many times received a +3 for each question. A total score of 16 or higher is considered an indicator of an adolescent at risk for depression. Those respondents in the present study scoring 16 or higher were considered positive for depression. The categorical responses used for the statistical analysis for depression were yes or no.

The CES-D scale is a self-report scale that includes 20 items that are symptoms associated with depression chosen from previously validated scales (Radloff, 1991). The scale has been found to be quick and easy to use. Validity has been established through several mechanisms, including correlations with other self-report measures of depression.
and correlations with clinical ratings of depression. The CES-D scale has a very high internal consistency and adequate test-retest reliability. Internal consistency measures of reliability for the CES-D from three school groups were found to be acceptable and reliable in all three groups studied (group 1 alpha = 0.85, group 2 alpha = 0.86, group 3 alpha = 0.87; Radloff).

Religiosity-Spirituality

Religiosity-spirituality was measured by participant responses to one question (Question 17) from the interview (see Appendix A). The question asked participants how important their religious beliefs and spiritual feelings were to them. Possible answers included the following: not at all important, somewhat important, and very important. Participant responses of not at all important were assigned a value of 0, somewhat important responses were assigned a value of 1, and very important responses were assigned a value of 2. The score was used in the statistical analysis.

Theory of Reasoned Action (TRA) and History of Use

The TRA includes the following constructs: attitude, subjective norm, and behavioral intention. The construct of attitude toward condom use was measured by the Condom Attitude Scale (CAS; Sacco, Levine, Reed, & Thompson, 1991), which included 23 items (Questions 93 to 115) from the baseline questionnaire (see Appendix A; Sacco et al.). Participants were questioned about their attitudes regarding condom use, their perceptions of the general public's attitude toward condom use, and their perceptions of their partner's attitudes toward condom use. Answers were yes or no to questions with
answers reflecting a positive attitude toward condom use scoring one point; higher scores, therefore, indicated a positive attitude. Coefficient alpha and test-retest correlations for the CAS and CAS subscales were generally high (Sacco et al.). Internal consistency reliability for the CAS was computed for the total scale and found to be acceptable for two different groups of college students (study 1 alpha = 0.92, study 2 alpha = 0.91; Sacco et al.). A composite score was obtained for each respondent to be used in the statistical analysis.

The construct of subjective norm regarding condom use was measured by a 14-item scale (Questions 21, 22, 26, 28, 29, 31, 32, 33, 34, 35, 36, 37, 38, and 39) from the baseline questionnaire (see Appendix A). One perceived peer norm question regarding condom use was answered by participants with possible answers none, some, or all (Question 22). The responses to the peer norm question, “How many of your friends use condoms during sexual intercourse?” were considered categorical responses for purposes of statistical analysis. The responses some or all were indicative of peer support of condom use. Eleven questions (Questions 28, 29, 31, 32, 33, 34, 35, 36, 37, 38, and 39) addressed perceived main partner norms regarding condom use, with possible answers either yes or no; a higher total of positive responses indicates social support by main partners for condom use (alpha = .67; SPONS Site Visit Report, 1996). A composite score was obtained for peer norms and partner norms to be used in the statistical analysis.

Behavioral intention was measured by participant responses to one question (Question 131) on the interview. The question asked the participant how often she plans to use a condom when she has vaginal sex in the next 3 months, with possible answers always, sometimes, and never (see Appendix A).
History of use of condoms was addressed using one question (Question 32) from the interview, “What type of contraceptives have you used in the past?” with condoms as one of the answers (see Appendix A).

Demographic Information

Demographic information included questions regarding age, race, year of school completed, household income, and marital status from the interview (Questions 1, 3, 7, 11 and 20, respectively; see Appendix A).

Statistical Analysis

The first research topic, the possibility that three psychosocial factors affect intentions to engage in sex, was tested using logistic regression. Logistic regression was chosen as the test for the question regarding intentions to engage in sexual activity because of the nature of the dependent variable; logistic regression uses binary situations. Possible answers for the intentions to engage question included yes, no, and don’t know, a multinomial situation. The yes and don’t know response categories were collapsed and combined to yes/don’t know with no as the second category. These two categories were used because response rate for the third category don’t know was low; it was felt that collapsing the cell would yield a clearer interpretation of the results of the analysis; and don’t know respondents may be at risk for acquiring STDs and HIV because their intentions may be to engage in sexual intercourse as opposed to definitely no intentions to engage in sexual intercourse. One approach that was considered was the combination of no and don’t know; within this context, don’t know was viewed as not yes (Scott Snyder, per-
sonal communication, Fall 1999). Clinically speaking, however, among sexually active adolescents don’t know was considered possibly yes for engaging in sexual intercourse, which is considered a risk behavior (Marsha Sturdevant, MD, personal communication, Fall 1999). Because the present study examined sexual risk behavior and the respondents’ risk of acquiring STDs and HIV, the latter categorical delineation was chosen.

To examine the degree of relationship of attitude, peer, and partner norm and prior use history to condom use intentions, a logistic regression analysis was conducted. A multinomial situation initially existed because the possible responses to the intentions to use condom question included always, sometimes, and never. Because of the low response rate for the never category, the sometimes and never response categories were collapsed into a single category. Always and sometimes/never were the response categories. Always with regards to condom use indicates a consistent HIV/STD protective behavior. Sometimes indicates the possibility of HIV/STD risk behavior and was, therefore, grouped with never. Again, because the present study examined sexual risk behavior with regard to the respondents’ risk of acquiring STDs and HIV, this specific categorical delineation was chosen. The choice of statistical tests was driven by the research questions as well as by the dependent variables. Data were analyzed using the Statistical Package for Social Sciences Version 10.0 software (SPSS, 1999).

Limitations

Limitations of consideration for this study include the following:

1. The sample was composed of a relatively small and homogeneous sample (n = 94) of potentially at-risk adolescents.
2. All responses were self-report and not verified through other methods.

3. All participants were self-selected and participated with full knowledge of the program involved.

4. The data were collected through completion of a paper-and-pencil questionnaire and an interview, both of which are susceptible to limitations caused by imperfect memory, the respondents’ desires to give socially acceptable answers, and the respondents giving untruthful disclosures.

5. This was a cross-sectional study with data collected at one point in time for the questionnaire and another point in time for the interview (both instruments were completed on the same day), making it difficult to establish causal relationships from data collected in a cross-sectional time frame.

6. As a secondary analysis, the validity of the methodology of the original study is assumed.

7. The data were gathered between the years 1994 to 1997, with the first respondents completing the baseline questionnaire and face-to-face interview in July 1994 and the last respondents completing the same instruments in February 1997.
CHAPTER 4

RESULTS

The purpose of this study was to identify predictors of intentions to engage in sexual intercourse and predictors of intentions to use condoms during intercourse by testing two prediction models. One regression model was based upon intentions to have sex as determined by responses to a baseline interview and questionnaire. The second regression model was based upon intentions to use condoms during the next intercourse as determined by responses to a baseline interview and questionnaire. Data were obtained from the original TAP study.

For a sample of 94 sexually active female adolescents 14 to 19 years of age from several youth-oriented agencies in Jefferson County, Alabama, an examination was made of (a) the predictive ability of three psychosocial factors in an analysis of the respondents' intentions to have vaginal intercourse in the next 3 months and (b) the predictive ability of TRA constructs and history of use in an analysis of condom use. Psychosocial variables included family connectedness, religiosity-spirituality, and depression. TRA constructs included respondents' attitude toward the behavior, respondents' perception of subjective norm including partner and peer norms, and an extra-attitudinal factor, history of use (Bentler & Speckart, 1979).
Descriptive Statistics

The subjects in this study included all respondents from the original TAP cohort 14 to 19 years of age who completed both a baseline written questionnaire and a baseline face-to-face interview. For the current study, 94 of the 111 females participating in the confidential data collection activities of the project were included. The 17 respondents who were excluded did not fit the age criteria (14 to 19 years old) or did not complete both the interview and the questionnaire. The investigation included 94 adolescent females: 87 African American (93%), 6 Caucasian (6%), and 1 Other (1%). The sample ranged in age from 14 to 19 years, with a mean of 16.6 years and a standard deviation of 1.6 years. Education completed by the sample ranged from sixth grade to twelfth grade, with the ninth grade as mean grade completed and a standard deviation of 1.3 grades (see Table 2). All respondents were single. Forty-one point five percent had household incomes of $20,000 or less, 4.3% had household incomes of >$20,000, and 54.3% did not know their household income. As a consequence of rounding to the nearest .10, the percentages may sometimes add up to slightly more or less than 100%.

The total sample for the first research question was composed of 94 respondents. The total sample for the second research question was composed of 49 of the original 94 respondents; 51 of the 95 respondents answered the intentions to use condoms question; 49 of those 51 respondents answered the peer norms, partner norms, and condom attitude questions. Cross-tabulation data follow for all variables. A logistic regression analysis for the first research question follows the cross-tabulation data. A logistic regression analysis for the second research question is then presented.
Table 2  

Distribution of Sample Across Demographic Variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>n</th>
<th>%</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Race</td>
<td></td>
<td></td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>African American</td>
<td>87</td>
<td>92.6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Caucasian</td>
<td>6</td>
<td>6.4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>1</td>
<td>1.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age (years)</td>
<td></td>
<td></td>
<td>16.6</td>
<td>1.6</td>
</tr>
<tr>
<td>14</td>
<td>13</td>
<td>13.7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>14</td>
<td>14.7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>19</td>
<td>20.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>16</td>
<td>16.8</td>
<td></td>
<td></td>
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<td>18</td>
<td>21</td>
<td>22.1</td>
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<td></td>
</tr>
<tr>
<td>19</td>
<td>12</td>
<td>12.6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Education</td>
<td></td>
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<td>9.3</td>
<td>1.3</td>
</tr>
<tr>
<td>6th grade</td>
<td>2</td>
<td>2.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7th grade</td>
<td>6</td>
<td>6.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8th grade</td>
<td>19</td>
<td>20.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9th grade</td>
<td>24</td>
<td>25.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10th grade</td>
<td>28</td>
<td>29.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11th grade</td>
<td>14</td>
<td>14.7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12th grade</td>
<td>2</td>
<td>2.1</td>
<td></td>
<td></td>
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<tr>
<td>Marital Status</td>
<td></td>
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<td>94</td>
<td>100.0</td>
</tr>
<tr>
<td>Single</td>
<td>94</td>
<td>100.0</td>
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<td></td>
</tr>
<tr>
<td>Household income</td>
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<td>39</td>
<td>41.5</td>
</tr>
<tr>
<td>$20,000 or less</td>
<td></td>
<td></td>
<td>4</td>
<td>4.3</td>
</tr>
<tr>
<td>More than $20,000</td>
<td></td>
<td></td>
<td>51</td>
<td>54.3</td>
</tr>
</tbody>
</table>

Note. As a consequence of rounding to the nearest .10, the percentages may sometimes add up to slightly more or less than 100%.

Cross-Tabulation Data

Cross-tabulation procedures were used to obtain additional descriptive information for the dependent variable versus the independent variables included in the first research question. Responses to the intentions to engage in sexual intercourse question are...
categorical and include yes/don’t know and no. These two categories were used because
the response rate for the third category, don’t know, was low; it was felt that collapsing
the cell would yield a clearer interpretation of the results of the analysis; and don’t know
respondents may be at risk for acquiring STDs and HIV because their intentions may be to
engage in sexual intercourse as compared with definitely no intentions to engage in sexual
intercourse.

Of the responses to the intentions to have vaginal intercourse in the next 3 months,
51% of the respondents (n = 94) intended to have vaginal intercourse in the next 3 mon­
th, 30% did not, and 19% didn’t know.

Fifty-seven percent of the total group had positive responses indicating depression,
and 43% did not. Cross-tabulations for depressed versus not depressed revealed that
48.1% of those with depression intended to engage in sexual intercourse during the next 3
months, 36.5% said no, and 15.4% said don’t know; of those respondents who were not
depressed, 53.8% intended to engage in sexual intercourse in the next 3 months, 20.5%
said no, and 25.6% said don’t know.

Cross-tabulation tables for the family connectedness scale revealed that 50.0%
intended to engage in sexual intercourse during the next 3 months, 30.4% said no, and
19.6% said don’t know. Of those respondents with family connectedness scores ranging
from 6 to 12 (79.3% of the total sample), 53.4% intended to engage in sexual intercourse
during the next 3 months, 27.4% said no, and 19.1% said don’t know. Of those respon­
dents with scores less than 6 (20.7% of the total sample), 46.7% intended to engage in
sexual intercourse during the next 3 months, 40.0% responded no, and 13.3% responded
don’t know (see Table 3).
Table 3

Intentions to Engage in Sexual Intercourse by Yes Versus No Versus Don’t Know

<table>
<thead>
<tr>
<th>Group</th>
<th>Yes</th>
<th>%</th>
<th>No</th>
<th>%</th>
<th>Don’t know</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Independent variables</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depression</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>25</td>
<td>27.5</td>
<td>19</td>
<td>20.9</td>
<td>8</td>
<td>8.8</td>
</tr>
<tr>
<td>No</td>
<td>21</td>
<td>23.1</td>
<td>8</td>
<td>8.8</td>
<td>10</td>
<td>11.0</td>
</tr>
<tr>
<td>Family connectedness (Lower scores and higher scores)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>2-5 (lower)</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>7</td>
<td>4.3</td>
<td>8</td>
<td>2.2</td>
<td>4</td>
<td>0.0</td>
</tr>
<tr>
<td>3</td>
<td></td>
<td>2.2</td>
<td>8</td>
<td>2.2</td>
<td>0.0</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td>1.1</td>
<td>8</td>
<td>2.2</td>
<td>1.1</td>
<td>2.2</td>
</tr>
<tr>
<td>5</td>
<td></td>
<td>0.0</td>
<td>8</td>
<td>2.2</td>
<td>0.0</td>
<td>2.2</td>
</tr>
<tr>
<td>6-12 (higher)</td>
<td>39</td>
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<td>20</td>
<td>3.3</td>
<td>14</td>
<td>1.1</td>
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<tr>
<td>6</td>
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<td>8.7</td>
<td>20</td>
<td>2.2</td>
<td>3.3</td>
<td>4.3</td>
</tr>
<tr>
<td>7</td>
<td></td>
<td>6.5</td>
<td>18</td>
<td>3.3</td>
<td>10.9</td>
<td>2.2</td>
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<tr>
<td>8</td>
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<td>8.7</td>
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<td>6.5</td>
<td>10.9</td>
<td>2.2</td>
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<tr>
<td>9</td>
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<td>2.2</td>
<td>8</td>
<td>1.1</td>
<td>2.2</td>
<td>1.1</td>
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<td>2.2</td>
<td>1.1</td>
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<td>1.1</td>
<td>2.2</td>
<td>1.1</td>
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<td></td>
<td>2.2</td>
<td>8</td>
<td>1.1</td>
<td>2.2</td>
<td>1.1</td>
</tr>
<tr>
<td><strong>Religiosity-spirituality</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>2</td>
<td>2.2</td>
<td>1</td>
<td>1.1</td>
<td>2</td>
<td>2.2</td>
</tr>
<tr>
<td>1</td>
<td>13</td>
<td>15.1</td>
<td>8</td>
<td>8.6</td>
<td>6</td>
<td>6.5</td>
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<tr>
<td>2</td>
<td>32</td>
<td>34.4</td>
<td>18</td>
<td>19.4</td>
<td>10</td>
<td>10.8</td>
</tr>
</tbody>
</table>

**Note.** As a consequence of rounding to the nearest .10, the percentages may sometimes add up to slightly more or less than 100%.

Of those respondents scoring 2 (the highest) on the religiosity-spirituality scale, 53.3% said yes regarding their intentions to engage in sexual intercourse, 30% said no, and 16.7% said don’t know. Of those with scores of 1, 50.0% said yes, 28.6% said no, and 21.4% said don’t know. Of those with scores of 0, 40% said yes, 20% said no, and 40% said don’t know.
Cross-tabulations for the dependent variable and the independent variables included in the second research question analysis are presented in Table 4. Responses to the intentions to use condoms question are categorical and include always or sometimes/never. Once again, these two categories were used because the response rate for the third category (never) was low and the cell needed to be collapsed to yield a clearer interpretation of the results. Also, consistent condom use is a critical behavior with regard to HIV/STD risk-taking behavior, and sometimes indicates inconsistent use or ambiguity with regard to intentions to use condoms. Fifty-nine percent of respondents (n = 49) said they would always use condoms during vaginal intercourse over the next 3 months, 27% said sometimes, and 14% said never.

Eighty-nine percent of the respondents had a history of condom use; 11% did not. Of those respondents with a history of condom use, 59.6% responded always to intentions to use condoms during intercourse in the next 3 months, 40.4% said either never or sometimes. Of those without a history of condom use, 50% responded always to intentions to use condoms during intercourse in the next 3 months, and 50% responded sometimes or never.

The peer norms question was “In general, how many young women your age do you think use condoms during sexual intercourse?” The categorical responses were none, some, and all. Of those respondents whose answer was none, 16.7% intended to use condoms during intercourse in the next 3 months, and 83.3% responded sometimes or never. Of those respondents whose answer was some, 60% intended to use condoms during intercourse in the next 3 months, and 40% responded sometimes or never. Of those
respondents whose answer was all, 87.5% intended to use condoms during intercourse in the next 3 months, and 12.5% responded sometimes or never.

Partner norm scores ranged from 4 to 11 and were interpreted as higher numbers meaning more favorable attitudes by partners toward condom use as perceived by the respondents. Scores for the condom attitude scale ranged from 10 to 23. The higher the score, the more favorable the respondents’ attitudes toward condom use.

Table 4

<table>
<thead>
<tr>
<th>Intentions to Use Condoms by Always Versus Sometimes/Never</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group</td>
</tr>
<tr>
<td>-------</td>
</tr>
<tr>
<td>Independent variables</td>
</tr>
<tr>
<td>Yes</td>
</tr>
<tr>
<td>No</td>
</tr>
<tr>
<td>Peer norms score (none, some, all use condoms)</td>
</tr>
<tr>
<td>None</td>
</tr>
<tr>
<td>Some</td>
</tr>
<tr>
<td>All</td>
</tr>
<tr>
<td>Partner norms score (higher scores indicate a more positive attitude)</td>
</tr>
<tr>
<td>4-11</td>
</tr>
<tr>
<td>4</td>
</tr>
<tr>
<td>6</td>
</tr>
<tr>
<td>8</td>
</tr>
<tr>
<td>9</td>
</tr>
<tr>
<td>10</td>
</tr>
<tr>
<td>11</td>
</tr>
</tbody>
</table>
Table 4 (Continued)

<table>
<thead>
<tr>
<th>Group</th>
<th>Always</th>
<th>Sometimes/Never</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N  %</td>
<td>N  %</td>
</tr>
<tr>
<td>Condom attitude scale score (higher scores indicate a more positive attitude)</td>
<td>29</td>
<td>20</td>
</tr>
<tr>
<td>10-23</td>
<td>10 0.0</td>
<td>20 2.0</td>
</tr>
<tr>
<td></td>
<td>12 0.0</td>
<td>12 4.1</td>
</tr>
<tr>
<td></td>
<td>13 0.0</td>
<td>15 4.1</td>
</tr>
<tr>
<td></td>
<td>15 4.1</td>
<td>16 2.0</td>
</tr>
<tr>
<td></td>
<td>16 2.0</td>
<td>17 0.0</td>
</tr>
<tr>
<td></td>
<td>17 0.0</td>
<td>18 2.0</td>
</tr>
<tr>
<td></td>
<td>18 2.0</td>
<td>19 6.1</td>
</tr>
<tr>
<td></td>
<td>19 6.1</td>
<td>20 14.3</td>
</tr>
<tr>
<td></td>
<td>20 14.3</td>
<td>21 16.3</td>
</tr>
<tr>
<td></td>
<td>21 16.3</td>
<td>22 8.2</td>
</tr>
<tr>
<td></td>
<td>22 8.2</td>
<td>23 6.1</td>
</tr>
<tr>
<td></td>
<td>23 6.1</td>
<td></td>
</tr>
</tbody>
</table>

Research Question 1

A single logistic regression analysis was completed to answer the first research question: “To what extent do three psychosocial variables—depression, religiosity-spirituality, and family connectedness—predict behavioral intentions to have sexual intercourse?” The logistic regression model was completed using depression, family connectedness, and religiosity-spirituality as separate independent variables and intentions to engage in vaginal intercourse in the next 3 months as the dependent variable. The logistic regression model used yes/don’t know and no as categories for the dependent variable. The Wald chi square statistic was used as the indicator for significance. A multinomial logistic approach was initially attempted but rejected because of the low number of re-
responses in the don't know category (yes: 48, no: 28, don't know: 18), and for other reasons, as cited in chapter 3.

Fifty-seven percent of the sample were depressed as indicated by a score of 16 or higher on the CES-D; 43% were not. Family connectedness responses ranged from 2 to 12, with 28% reporting 6 or less, 64% reporting 7 to 10, and 8% reporting 10 to 12; overall mean and standard deviation and percentages for each numerical response are shown in Table 5.

Table 5

<table>
<thead>
<tr>
<th>Scores</th>
<th>%</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>6.5</td>
<td>7.5</td>
<td>2.6</td>
</tr>
<tr>
<td>3</td>
<td>4.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>5.4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>4.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>7.6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>15.2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>14.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>18.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>16.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>4.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>3.3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Religiosity-spirituality responses ranged from 0 to 2 with 5.4% reporting 0, 30.1% reporting 1, and 64.5% reporting 2. In response to the question “Do you intend to have vaginal intercourse in the next 3 months,” 51% said yes and 49% said no or don't know. Overall mean and standard deviation and percentages for each numerical response are shown in Table 6.
Table 6

Religiosity-Spirituality Score Mean, Standard Deviation, and Percentage of Respondents

<table>
<thead>
<tr>
<th>M</th>
<th>SD</th>
<th>Scores</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.59</td>
<td>.59</td>
<td>0</td>
<td>5.4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1</td>
<td>30.1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2</td>
<td>64.5</td>
</tr>
</tbody>
</table>

Note. N = 94.

Results from the logistic regression model using yes/don’t know and no as categories for the dependent variable are found in Table 7. The regression model was not significant (p = .234).

Table 7

Estimates of Intentions to Engage in Sexual Intercourse from Logistic Regression

<table>
<thead>
<tr>
<th>Variable examined</th>
<th>B</th>
<th>SE</th>
<th>Wald</th>
<th>Sig</th>
<th>Exp(B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Religiosity-Spirituality</td>
<td>.25</td>
<td>.41</td>
<td>.37</td>
<td>.544</td>
<td>1.28</td>
</tr>
<tr>
<td>Family Connectedness</td>
<td>-.06</td>
<td>.09</td>
<td>.35</td>
<td>.504</td>
<td>.95</td>
</tr>
<tr>
<td>Depression</td>
<td>.90</td>
<td>.52</td>
<td>3.04</td>
<td>.081</td>
<td>2.47</td>
</tr>
</tbody>
</table>

Family connectedness and religiosity-spirituality did not predict the respondents’ intentions to have vaginal intercourse in the next 3 months. Depression approached significance (p = .081). An alpha coefficient of .10 is a liberal level of significance sometimes selected in social and behavioral sciences to avoid Type I error (Michael Hardin, Ph.D., personal communication, Fall 1999). Type I errors occur when it is concluded that an association exist in the data when in fact it does not (Isaac & Michael, 1997). Type II
errors occur when it is concluded that an association does not exist in the data when in fact it does. To avoid the probability of a Type I or Type II error, the sample size can be increased. In the present study, this was not a possibility. Gage (1978) proposed that an effect, even though statistically insignificant by strict standards of significance, be considered significant or worthy of consideration if the preponderance of literature supports such an association and as long as design weaknesses among the studies vary. Considering that the preponderance of literature supported depression as a risk factor and that the present study had its own unique limitations, it was concluded that depression was associated with the respondents’ intentions to have sexual intercourse in the next 3 months. In other words, those with depression were more likely to intend to engage in sexual intercourse in the next 3 months. All independent variables were relatively independent of one another, with the exception of two variables, depression and family connectedness, which were moderately related ($p < 0.01, r = -0.335$).

Research Question 2

Logistic regression analyses were completed to answer the second research question: “To what extent do TRA constructs—attitude, partner and peer norms—and history of condom use, predict behavioral intentions to use condoms during sexual intercourse in the next 3 months?” A series of logistic regressions were completed using condom attitude, peer norms, partner norms, and condom use history as the independent variables and intentions to use condoms during vaginal intercourse in the next 3 months as the dependent variable. The Wald chi square statistic was used as an indicator for significance. A multinominal logistic approach was initially attempted but was rejected because of the low
number of responses in the never category (always = 30, sometimes = 14, and never = 7); it was felt that collapsing the cell would yield a clearer interpretation of the results of the analysis and that sometimes indicates the possibility of noncondom use during vaginal inter-course, which is an HIV/STD risk behavior.

Percentages, overall mean, standard deviation, and percentages for each numerical response for the condom attitude scale are shown in Table 8.

Table 8

Condom Attitude Scale (CAS) Score, Mean, Standard Deviation, and Percentage of Respondents

<table>
<thead>
<tr>
<th>CAS</th>
<th>%</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>1.1</td>
<td>18.4</td>
<td>3.5</td>
</tr>
<tr>
<td>10</td>
<td>1.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>2.2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>5.4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>3.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>2.2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>5.4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>5.4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>5.4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>12.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>7.6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>17.4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>14.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>22</td>
<td>10.9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>23</td>
<td>6.5</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Eighty-nine percent of the sample had used condoms in the past; 11% had not. Of those without a history of condom use, 50% responded always to intentions to use condoms during intercourse in the next 3 months, and 50% responded sometimes or never.
The peer norms question was “In general, how many young women your age do you think use condoms during sexual intercourse?” The categorical responses were none, some, and all. Of those respondents whose answer was none, 16.7% intended to use condoms during intercourse in the next 3 months, and 83.3% responded sometimes or never. Of those respondents whose answer was some, 60% intended to use condoms during intercourse in the next 3 months, and 40% responded sometimes or never. Of those respondents whose answer was all, 87.5% intended to use condoms during intercourse in the next 3 months, and 12.5% responded sometimes or never. Partner norms, scores, means, standard deviations, and percentages are shown in Table 9.

Table 9

<table>
<thead>
<tr>
<th>Scores</th>
<th>%</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>1.1</td>
<td>8.5</td>
<td>1.7</td>
</tr>
<tr>
<td>4</td>
<td>4.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>5.4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>12.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>16.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>32.6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>17.4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>10.9</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Fifty-nine percent responded always to intentions to use condoms during vaginal intercourse in the next 3 months; 41% responded sometimes or never.

Originally, all four independent variables were included in a logistic regression; partner norms, condom use history, and peer norms (for the response some) did not show
significance within the regression model. Condom attitudes did show significance ($p = .009$). The overall model was significant ($p = .003$). The regression model correctly predicted 90.9% of the always category, 63.1% of the sometimes/never category, and 78.1% overall. Results from the first logistic regression for the second research question, which included an examination of peer norms (for the response some), partner norms, attitudes toward condom use, and history of condom use and their ability to predict intentions to use condoms during vaginal intercourse in the next 3 months, are shown in Table 10.

Table 10

<table>
<thead>
<tr>
<th>Variable examined</th>
<th>B</th>
<th>SE</th>
<th>Wald</th>
<th>Sig</th>
<th>Exp(B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peer norms (some)</td>
<td>1.19</td>
<td>1.32</td>
<td>.80</td>
<td>.369</td>
<td>.30</td>
</tr>
<tr>
<td>Condom attitudes</td>
<td>.50</td>
<td>.19</td>
<td>6.72</td>
<td>.009</td>
<td>.61</td>
</tr>
<tr>
<td>Condom history</td>
<td>.83</td>
<td>1.39</td>
<td>.35</td>
<td>.551</td>
<td>.43</td>
</tr>
<tr>
<td>Partner norm</td>
<td>-.27</td>
<td>.28</td>
<td>.95</td>
<td>.330</td>
<td>1.31</td>
</tr>
</tbody>
</table>

Attitudes toward condom use and peer use were significantly associated with intentions to use condoms during vaginal intercourse in the next 3 months. Peer norms for response some, condom use history, and partner norms were not associated with intentions to use condoms. An additional logistic regression analysis was performed in order to include the remaining response category for peer norms, some/all. The peer norm response category all had an inadequate number of cases ($n = 14$) for inclusion in a logistic regression. The second analysis included all four independent variables partner norms, condom
use history, and peer norms (for the response some/all). Partner norms, condom use
history, and peer norms (for the response some/all) did not show significance within the
regression model. Attitudes toward condom use did show significance ($p = .003$). The
overall model was significant ($p < .005$). The regression model correctly predicted 89.7%
of the always category, 65.0% of the sometimes/never category, and 79.6% overall.

Results from the third logistic regression for the second research question, which included
an examination of peer norms (for the response some/all), partner norms, attitudes toward
condom use, and history of condom use and their ability to predict intentions to use
condoms during vaginal intercourse in the next 3 months, are shown in Table 11.

Table 11

<table>
<thead>
<tr>
<th>Variable examined</th>
<th>B</th>
<th>SE</th>
<th>Wald</th>
<th>Sig</th>
<th>Exp(B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peer norms (some/all)</td>
<td>1.55</td>
<td>1.30</td>
<td>1.42</td>
<td>.234</td>
<td>.21</td>
</tr>
<tr>
<td>Condom attitudes</td>
<td>.47</td>
<td>.16</td>
<td>8.72</td>
<td>.003</td>
<td>.62</td>
</tr>
<tr>
<td>Condom history</td>
<td>1.12</td>
<td>1.38</td>
<td>.66</td>
<td>.415</td>
<td>.32</td>
</tr>
<tr>
<td>Partner norm</td>
<td>-.24</td>
<td>.25</td>
<td>.90</td>
<td>.343</td>
<td>1.27</td>
</tr>
</tbody>
</table>

Peer norms for the response of some/all, condom use history, and partner norms
were not associated with intentions to use condoms. Attitudes toward condom use did
show significance ($p < .005$).

To examine the independent variables without the limitation of the small sample
size, individual logistic regression models were constructed for each of the independent
variables. Partner norms ($p = .954$) and condom use history ($p = .711$) were not significant (Table 12). The overall models for peer norms with the response of *some* ($p = .022$) and peer norms with the response of *some/all* ($p = .043$) were significant (Table 12). Peer norms with the response of *some* within the model ($p = .079$) and peer norms with the response of *some/all* within the model ($p = .050$) were considered significant for the reason cited earlier in this chapter regarding more liberal levels of significance for social and behavioral research. As sample size increased from 35 for peer norms with the response of *some* to 43 for peer norms with the response of *some/all*, the logistic regression neared a more strict level of significance. A model was not constructed for the peer norms with the response of *all* because of the inadequate number of cases ($n = 8$). The model using attitudes toward condoms ($p < .001$) was significant (Table 12).

Table 12

*Estimates of Condom Use Intentions from Logistic Regression for Individual Independent Variables*

<table>
<thead>
<tr>
<th>Variable examined</th>
<th>B</th>
<th>SE</th>
<th>Wald</th>
<th>Sig</th>
<th>Exp(B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Partner norms</td>
<td>-.01</td>
<td>.20</td>
<td>.00</td>
<td>.954</td>
<td>.98</td>
</tr>
<tr>
<td>Condom use history</td>
<td>.39</td>
<td>1.04</td>
<td>.14</td>
<td>.710</td>
<td>1.47</td>
</tr>
<tr>
<td>Peer norms (some)</td>
<td>2.02</td>
<td>1.15</td>
<td>3.08</td>
<td>.079</td>
<td>7.49</td>
</tr>
<tr>
<td>Peer norms (some/all)</td>
<td>2.23</td>
<td>1.14</td>
<td>3.83</td>
<td>.050</td>
<td>9.33</td>
</tr>
<tr>
<td>Condom attitude</td>
<td>.44</td>
<td>.14</td>
<td>10.61</td>
<td>.001</td>
<td>1.56</td>
</tr>
</tbody>
</table>

Using only peer norms with the response of *some*, the regression model correctly predicted 95.4% of the *always* category, 26.3% of the *sometimes/never* category, and 63.4% overall. Results from the significant logistic regression model for the second
research question, which included peer norms with the response of *some* \((p = .043)\) and the ability of peer norms with the response of *some* to predict intentions to use condoms during vaginal intercourse in the next 3 months, are shown in Table 12.

Using only the peer norms with the response of *some/all*, the regression model correctly predicted 96.6% of the *always* category, 25.0% of the *sometimes/never* category, and 67.35% overall. Results from the significant logistic regression model for the second research question, which included peer norms with the response of *some/all* \((p = .022)\) and the ability of peer norms with the response of *some/all* to predict intentions to use condoms during vaginal intercourse in the next 3 months, are shown in Table 12.

Using only the condom attitude scale, the regression model correctly predicted 89.7% of the *always* category, 60.0% of the *sometimes/never* category, and 77.6% overall. Results from the significant logistic regression model for the second research question, which included attitudes toward condom use \((p = .005)\) and the ability of attitudes towards condom use to predict intentions to use condoms during vaginal intercourse in the next 3 months, are shown in Table 12.

Within the individual prediction models, attitudes toward condom use, peer norms with response *some*, and peer norms with the response of *some/all* were predictors of stronger intentions to use condoms.

A final logistic regression model was constructed using peer norms for the response of *some/all* and the condom attitude scale. Peer norms for the response of *some/all* was used because the individual regression approached the stricter level of significance \((p = .050)\) and the sample size \((n = 49)\) was large enough to accommodate two independent variables in the analysis. The overall model was significant \((p < .001)\).
The regression model correctly predicted 89.7% of the always category, 70.0% of the sometimes/never category, and 81.6% overall. Results from the last logistic regression for the second research question, which included an examination of peer norms for response some/all and attitudes toward condoms and their ability to predict intentions to use condoms during vaginal intercourse in the next 3 months, are shown in Table 13.

Table 13

<table>
<thead>
<tr>
<th>Variable examined</th>
<th>B</th>
<th>SE</th>
<th>Wald</th>
<th>Sig</th>
<th>Exp(B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peer norms (some/all)</td>
<td>1.64</td>
<td>1.25</td>
<td>1.71</td>
<td>.191</td>
<td>.19</td>
</tr>
<tr>
<td>Condom attitudes</td>
<td>.40</td>
<td>.13</td>
<td>9.00</td>
<td>.002</td>
<td>.67</td>
</tr>
</tbody>
</table>

A weak association was found between predictor variables, partner norms, and condom attitudes (p < 0.05, r = .239); no other significant associations were found between the predictor variables. TRA constructs—attitude and peer norms—were associated with the respondents' behavioral intentions to use condoms during vaginal intercourse in the next 3 months and were significant predictors of intentions to use condoms, whereas condom use history and partner norms were not. Because of the preponderance of literature supporting peer norms as a predictor of condom use intentions and because of an alpha coefficient greater than .05 for social and behavioral science studies, we concluded that peer norms were related to condom use intentions in the present study.
CHAPTER 5
DISCUSSION, CONCLUSIONS, AND RECOMMENDATIONS

Research Question 1

The purpose of this study was to explore the intentions of adolescent females regarding two specific sexual behaviors. The first research question focused on intentions to engage in sexual intercourse and the relationship of three psychosocial factors. The results of the present study did not support an association among depression, family connectedness, and religiosity-spirituality and intentions to engage in sexual intercourse but did support an association between depression and intentions to engage in sexual intercourse. Findings from the present study are at odds with the literature on psychosocial factors of family connectedness and religiosity-spirituality and intentions to engage in sexual intercourse (Metzler et al., 1994; Resnick et al., 1997). The results of the present study supported an association between depression and intentions to engage in sexual intercourse, which is supported by the literature (Burns et al., 2000; Kowaleski-Jones & Mott, 1998).

Previous studies have supported depression as a risk factor for engaging in sexual activity (Burns et al., 2000; Kowaleski-Jones & Mott, 1998). Kowaleski-Jones and Mott described a link between those adolescents with above average levels of depression and early initiation of intercourse. Burns et al. concluded that depression is associated with higher involvement in unsafe sexual activity. Similar associations were found for depression in the present study as were found in the Burns et al. study.
Family connectedness and religiosity-spirituality have been viewed as protective factors with regard to sexual activities by most authors (Dunne et al., 1994; Ellis & Wageman, 1993; Poulson et al., 1998; Metzler et al., 1994; Resnick et al., 1997). Similar associations were not found in the present study. It is important to note when considering the lack of association between the two psychosexual factors and sexual activity that the present study sample was composed of sexually active female adolescents. Resnick and colleagues included both sexually active and not sexually active adolescents in their 1997 study, which was an overview of 12,118 high school and middle school adolescents; 17% of the middle school respondents and 49.3% of the high school respondents had engaged in sexual intercourse. Metzler and colleagues included adolescents that were both sexually active and not sexually active in their 1994 study, which was an overview of 609 adolescents ranging in age from 14 to 17 years; 60% of the respondents were sexually active. It is possible that a significant association between family connectedness and religiosity-spirituality and sexual intercourse supported by previous studies was not found in the present study because of the prior positive history of sexual intercourse among respondents. A history of being sexually active indicates a significant difference between previous study samples and the present study sample.

The overall sample size (n = 94), which was relatively small, may have inhibited the detection of relationships between psychosocial variables family connectedness and religiosity-spirituality and intentions to engage in sexual intercourse. A larger sample size may have shed light on such relationships. The sample also was composed of a relatively homogeneous group of adolescent females. The respondents were sexually active; self-selected; from community centers and other centers in Jefferson County, Alabama; had
prior knowledge of the program; and 93% were African American. A more diverse group may have responded differently.

Considering the limitations of the present study, it is felt that the results present a detailed view of the study sample but are not generalizable to other groups of female adolescents. Inclusion of the three specific psychosocial factors found in the present study was supported by the literature, but the lack of association in the present study for two of those factors is felt to be a result of the previously mentioned limitations, including a positive history of engaging in sexual intercourse. A second possible explanation, which is highly unlikely, is that there is truly no relationship between family connectedness, religiosity-spirituality, and intentions to have sexual intercourse. This view would oppose the predominance of literature regarding family connectedness, religiosity, and the effect of those factors upon adolescents' intentions to have sexual intercourse.

Based upon the results of this study, it was concluded that family connectedness and religiosity-spirituality did not significantly affect these adolescents' intentions to engage in sexual intercourse during the 3 months following completion of the interview. Even though psychosocial issues have emerged as significant influences to consider when examining sexual behavior among adolescents (Graber et al., 1998), the results of the present study did not support such an influence between intentions to engage in sexual intercourse and family connectedness and religiosity-spirituality. Therefore, the results indicate that stronger family connections did not affect the respondents' intentions to engage in sexual intercourse; and strength of religiosity-spirituality did not affect the respondents' intentions to engage in sexual intercourse. The present study did not contribute to
understanding the influence of these two specific psychosocial factors upon sexual intercourse except to say there were no influences upon this particular group.

Although the present study did not support family connectedness and religiosity-spirituality as having significant effects upon adolescent intentions regarding sexual intercourse, keeping in mind the limitations present in the study as well as the body of literature supporting inclusion of such factors, it is felt that consideration of family, religion, and other social and psychological factors should be encouraged by health educators, providers of medical services, social service providers, and others when designing and developing prevention and intervention programs.

The present study did support an association between depression and intentions to engage in sexual intercourse. The depressed respondents had stronger intentions to engage in sexual intercourse than the respondents who were not depressed. Fifty-seven percent of the current study group were found to have depression. When compared to national averages, this is a high percentage of depression within this particular sample; nationally about 20% of adolescents have had episodes of depression (Lewinsohn, Rohde, & Seeley, 1998). This supports the importance of considering inclusion of signs, symptoms, and options for care for depression in educational efforts addressing risk behaviors. Health educators, social service workers, and health care providers should be aware of the possibility of adolescent depression and the risk behaviors associated with depression, such as unsafe sexual activity, drug abuse, violence, tobacco use, poor family or peer relationships, academic failure, and other health risk behaviors (Burns et al., 2000).

Even though religiosity-spirituality was not supported as a predictor of stronger intentions to engage in sexual intercourse, a majority of the respondents (64%) of the
present study indicated a religious preference and agreed that religious beliefs and spiritual feelings were very important to them. Considering this finding, church-based programs might provide an excellent venue for preventive and interventive efforts. Coyne-Beaseley and Schoenbach (2000) found that 76% of 45 surveyed clergy leaders in the southeastern United States had discussed one or more adolescent health topics in church, including alcohol use, drugs, violence, HIV/AIDS, and pregnancy. All respondents wanted health seminars and would allow contraceptive education in their churches.

Research Question 2

The second research question focused on intentions of the adolescent females to use condoms during sexual intercourse over the next 3 months, with attitudes toward condom use, peer norms, partner norms, and condom use history as possible predictors. The results of the present study did support the findings that peer norms and attitudes toward condoms have a direct bearing upon condom use intentions. The results did not support partner norms and condom use history as predictors of condom use intentions.

Supportive peer norms and positive attitudes toward condom use have been found to predict condom use in other studies (Baker et al., 1996; Basen-Engquist & Parcel, 1992; Stevenson et al., 1995). The present study supported both associations.

Supportive partner norms and a positive history of condom use were not associated with condom use intentions. Supportive partner norms have been found to predict condom use in other studies (Baker et al., 1996; Basen-Engquist & Parcel, 1992; Stevenson et al., 1995). A history of condom use is associated with a 20 times greater likelihood
of using condoms in subsequent sexual intercourse (CDC, 1998a). The present study did not support either association.

It is important to note the small sample size for Research Question 2 (n = 49) and the homogeneity of the respondents when considering the relationships between partner norms, history of condom use, and intentions to use condoms during intercourse. Even though the sample size was small, the associations between peer norms and intentions to use condoms and attitudes toward condom use and intentions to use condoms were significant and indicated a relationship between the independent variables and the dependent variable. These conclusions are in line with the literature and support the use of TRA in examining adolescents' intentions to engage in sexual activity and to use condoms (Baker et al., 1996; Basen-Engquist & Parcel, 1992; Stevenson et al., 1995).

Results from this study suggest relationships among attitudes, peer norms, and behavioral intentions; but the limitations, including the small sample size, self-report without other methods of verification, the homogeneity of the sample, and self-selection of participants, suggest caution regarding the replicability of these findings. Also, the current analysis was cross-sectional, and it is difficult to establish causal relationships from data collected in a cross-sectional time frame.

In addition, because some of the data for the current study were collected from as early as 1994, it is possible that some of the attitudes, beliefs, and behaviors have changed among adolescent females in general. Some risk behaviors have improved, as CDC (1999) reports in its biennial risk survey. A greater than 25% increase in condom use has occurred among high school students since 1991, more students have had education regarding
HIV/AIDS, and decreases in the number of students with multiple sexual partners have been found.

No relationships between partner norms, condom use history, and intentions to use condoms were observed. It may be that there was not enough variation within the sample to detect differences in partner norms or condom use history and intentions to use condoms. The same caution holds true for the relationships between psychosocial variables and intentions to engage in sexual intercourse.

It was concluded that partner norms and condom use history did not significantly affect these adolescents’ intentions to use condoms during intercourse during the 3 months following completion of the interview but that peer norms and attitudes toward condom use did significantly affect their intentions. Considering the significant associations between peer norms and condom use and attitudes toward condom use and intentions to use condoms, it is felt that these conclusions were meaningful and support the use of TRA constructs in future studies. The results of Research Question 2 also support the use of social and behavioral theories such as TRA in the design of health education and health promotion programs. The results also support the use of TRA in the design of health education and health promotion programs for African American female adolescents.

Participants in the present study were southern, predominantly African American female adolescents; it is important to consider the implications of being southern, African American, and female for future interventions and research. As stated in chapter 1, the southern region of the United States has consistently had higher rates of syphilis and gonorrhea than other regions of the country for the last 2 decades (CDC, 1998c). Also, from 1996 to 1998, the South had the highest rate of chlamydia in the United States. Differ-
ences in ethnic and racial distribution of the population, poverty, and availability and quality of health care services were listed as possible reasons (CDC). Fifteen- to 19-year-old women had the highest rates of gonorrhea in 1998, and gonorrhea rates for African American females aged 15 to 19 years were on average over 20 times higher than those of 15- to 19-year-old Caucasian adolescent females (CDC). There is also a high HIV prevalence among childbearing women living in the South (CDC). It is important to note that STDs facilitate HIV transmission at least two- to fivefold (CDC). These observations emphasize the need for concentrated prevention and intervention efforts designed for populations such as the current one. The southern, African American adolescent females in the present study represent the southern, African American, young adult females today because some of the study respondents are now in their early 20s. Southern African American adult females have the highest rates of syphilis, gonorrhea, chlamydia, and HIV; HIV is currently the number one cause of death for African American females (CDC, 2000b). Specific findings from the present study group, such as intentions to use condoms (89% of the group had a history of condom use, but only 59% intended to always use condoms during sexual intercourse in the next 3 months), the impact of peer attitudes (positive peer norms were associated with stronger intentions to use condoms), and attitudes regarding condoms (positive attitudes toward condoms were associated with stronger intentions to use condoms), should be taken into consideration and addressed in health education programs. Health educators should include strong efforts to reach this high risk population. Increases in knowledge pertaining to STD/HIV transmission and the implications of such should be sought for this group. Empowering and risk reduction activities such as those found in the MIRROR curriculum should be encouraged.
The results of the current study emphasize the importance of targeting peer norms for inclusion in interventions because more positive peer norms were associated with intentions to use condoms. DiClemente (1991) found, in his study of incarcerated adolescents, that those adolescents who perceived peer norms as supporting condom use were more likely to use condoms consistently. In their recent review of school-, community-, and clinic-based interventions designed to reduce sexual risk behaviors, Santelli and associates (2000) noted that effective curricula should include activities addressing social pressures and should use select peers who believe in the specific program.

Even though the current study did not support condom use history and partner norms associations with intentions to use condoms, previous studies have supported such associations (Baker et al., 1996; CDC, 1998a). History of condom use has been a proven predictor of intentions to use condoms in the future (CDC). Programs should include mechanisms to encourage partner support of condoms, which, in turn, may influence both members involved in the sexual relationship.

Further research is needed on the accuracy of self-reports of sexual behavior and behavioral intentions. The current study also emphasizes the need for further research that explores the complex interrelationships between psychosocial factors, theoretical associations, and adolescent sexual behaviors for African American adolescent females.
LIST OF REFERENCES


APPENDIX A

TEENAGE ACCESS PROJECT INTERVIEW AND QUESTIONNAIRE
The questions below are extracted from the larger TAPS interview. The question numbers below reflect the original question number.

1. How old are you?

3. What is your race?
   Black/African American
   Hispanic
   White
   Other__________(please specify)

16. What is your religious preference? (check one)
   Baptist
   Muslim
   Catholic
   Pentecostal
   Lutheran
   None
   Methodist
   Other__________(specify)

17. How important are your religious beliefs and spiritual feelings to you?
   Not at all important
   Somewhat important
   Very important

32. What type(s) of contraceptive(s) have you used in the past?
   None
   Foam
   Norplant
   Condoms
   Rhythm
   Spermicidal jelly
   Depoprovera
   IUD
   Diaphragm
   Withdrawal
   Pill
   Other______ (specify)

130. Do you intend to have vaginal sex in the next three months? (check one)
   Yes
   No
   Don’t know

131. How often do you intend to use a condom when you have vaginal sex in the next 3 months?
   Always
   Sometimes
   Never
The questions below are extracted from the larger TAPS questionnaire. The question numbers below reflect the original question number.

QUESTIONNAIRE

7. Planning family activities is difficult because we misunderstand each other
   Yes
   No

8. In times of crisis we can turn to each other for support
   Yes
   No

9. We cannot talk to each other about the sadness we feel
   Yes
   No

10. Individuals are accepted for what they are
    Yes
    No

11. We avoid discussing our fears and concerns
    Yes
    No

12. We can express feelings to each other
    Yes
    No

13. There are lots of bad feelings in the family
    Yes
    No

14. We feel accepted for what we are
    Yes
    No

15. Making decisions is a problem for our family
    Yes
    No

16. We are able to make decisions about how to solve problems
    Yes
    No

17. We don’t get along well together
    Yes
    No

18. We confide in each other
    Yes
    No

22. In general, how many young women your age do you think use condoms during sexual intercourse
    None
    Some
    All

28. Does your main partner think that sex does not feel good when you use a condom
    Yes
    No

29. Does your main partner think that he has control over whether or not he uses a condom
    Yes
    No

31. Does your main partner think that condoms are an effective way to protect people from getting AIDS
    Yes
    No

32. Does your main partner think that if you ask him to use a condom you are being unfaithful
    Yes
    No

33. Does your main partner think that he can talk you out of wanting him to use a condom
    Yes
    No

34. Does your main partner think that it is too much trouble to carry condoms around
    Yes
    No

35. Does your main partner think that you do not want him to wear a condom
    Yes
    No

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36. Does your main partner think that sex is more fun when a condom is used  
   Yes  No

37. Does your main partner think that if you ask him to use a condom you’re implying that he is unfaithful  
   Yes  No

38. Does your main partner think that you argue too much over using condoms  
   Yes  No

39. Does your main partner think that putting on a condom is a hassle  
   Yes  No

40. It would really bother me to stop foreplay to put on a condom  
   Yes  No

41. If a condom is not handy I would have sex anyway  
   Yes  No

42. I’m concerned about getting AIDS or an STD, so I’d be careful and always use a condom  
   Yes  No

43. I’d be embarrassed to buy condoms  
   Yes  No

44. Condoms are a hassle to use  
   Yes  No

45. People who use condoms are understanding of their partners concerns  
   Yes  No

46. People who carry condoms would have sex with anyone  
   Yes  No

47. People who use condoms sleep around a lot  
   Yes  No

48. If my partner suggested using a condom, I would appreciate his concern  
   Yes  No

49. Condoms take away the pleasure of sex  
   Yes  No

50. If my partner suggested using a condom, I would respect him  
   Yes  No

51. I’m worried about getting AIDS but if I was hot and ready for sex, I would have sex even if I didn’t have a condom  
   Yes  No

52. Using condoms interrupts the pleasure of sex  
   Yes  No

53. If my partner suggested using a condom, I would feel relieved  
   Yes  No

54. People who use condoms are just looking for sex  
   Yes  No

55. If my partner suggested using a condom, I would feel good towards him  
   Yes  No
109. Condoms are unreliable | Yes | No
110. Condoms are the best way to prevent getting an STD/AIDS | Yes | No
111. Condoms break easily | Yes | No
112. Condoms slip off easily | Yes | No
113. A condom is not necessary if you and your partner agree not to have sex with anyone else | Yes | No
114. Condoms create a sense of safety | Yes | No
115. If my partner suggested using a condom, I would think he was only being cautious | Yes | No

For questions 143-162:

During the past week: None/A few time (0-2 days) Many times (3-7 days)

143. I was bothered by things that usually don’t bother me
144. I did not feel like eating; my appetite was poor
145. I felt that I could not shake off the blues even with help from my family and friends
146. I felt that I was just as good as other people
147. I had trouble keeping my mind on what I was doing
148. I felt depressed
149. I felt that everything I did was an effort
150. I felt hopeful about the future
151. I thought my life had been a failure
152. I felt fearful
153. My sleep was restless
154. I was happy
155. I talked less than usual
156. I felt lonely

157. People were unfriendly

158. I enjoyed life

159. I had crying spells

160. I felt sad

161. I felt that people dislike me

162. I could not get “going”
APPENDIX B

INSTITUTIONAL REVIEW BOARD APPROVAL
The Institutional Review Board for Human Use (IRB) has an approved Multiple Project Assurance with the Department of Health and Human Services. The Assurance became effective on February 1, 1994 and the approval period is for five years. The Assurance number is M-1149.

Principal Investigator: Tamala J. Turner, MEd, Med
Protocol Number: E991123005
Protocol Title: Predictors of Unsafe Sexual Activity Among Female Adolescents

The IRB reviewed and approved the above named project on December 1999. The review was conducted in accordance with UAB's Assurance of Compliance approved by the Department of Health and Human Services.

This project received EXEMPTION review.

Date: 12/13/99

Ferdinand Urthaler, M.D.
Chairman of the Institutional Review Board for Human Use (IRB)

Investigators please note:

The IRB approved consent form used in the study must contain the IRB approval date and expiration date.

IRB approval is given for one year unless otherwise noted. For projects subject to annual review research activities may not continue past the one year anniversary of the IRB approval date.

Any modifications in the study methodology, protocol and/or consent form must be submitted for review and approval to the IRB prior to implementation.

Adverse Events and/or unanticipated risks to subjects or others at UAB or other participating institutions must be reported promptly to the IRB.
Name of Candidate: Tamela J. Turner

Graduate Program: Health Education/Health Promotion

Title of Dissertation: Using Psychosocial Factors and the Theory of Reasoned Action to Predict Sexual Behavior Intentions in Adolescent Females

I certify that I have read this document and examined the student regarding its content. In my opinion, this dissertation conforms to acceptable standards of scholarly presentation and is adequate in scope and quality, and the attainments of this student are such that she may be recommended for the degree of Doctor of Philosophy.

Dissertation Committee:

Name

David M. Macrina, Co-Chair
Marsha S. Sturdevant, Co-Chair
J. Michael Hardin
Myra A. Crawford
Lesa L. Woodby

Signature

David M. Macrina
Marsha S. Sturdevant
J. Michael Hardin
Myra A. Crawford
Lesa L. Woodby

Director of Graduate Program: David M. Macrina
Dean, UAB Graduate School: Joan J. Kodra
Date: 12/3/10