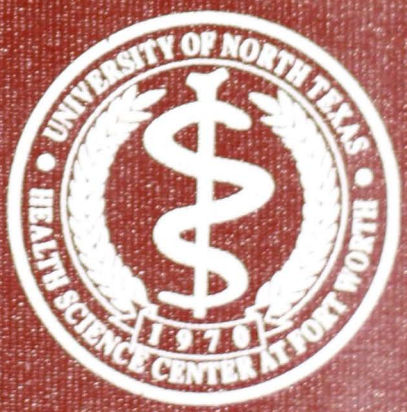
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Adolescence is a time of self-discovery and growth, both emotionally and physically, particularly for adolescent females. The literature lacks specific research pertaining to female adolescent's body image and other concerns and their association with risky sexual behaviors. Using secondary data from the 2003 Dallas Youth Risk Behavior Survey (YRBS; 9^{th}-12^{th} grade), this study explored the relationship between body image, having a depressed mood, and weight control behaviors and how these may translate into risky sexual behaviors among Dallas Independent School District (DISD) adolescent females. Most respondents were African American and Hispanic. The main hypotheses were: a) African American and Hispanic adolescent females will be more likely to have a depressed mood, an unrealistic body image, or weight control behaviors compared to Caucasian adolescent females; and b) Adolescents with unrealistic body image, depressed mood, and weight control behaviors will be more likely to engage in risky sexual behaviors, regardless of race or ethnicity.

As hypothesized, more African American and Hispanic adolescents had a depressed mood, and more Hispanics had an unrealistic body image compared to Caucasians. The hypothesis that depressed mood and unrealistic body image would be significant predictors of engaging in risky sexual behaviors was corroborated only for depressed mood. Engaging in weight control, although hypothesized as not a significant

predictor, was a significant predictor for using alcohol/drugs before last sexual intercourse. School-based sexual education programs that target adolescent females in DISD should focus on abstinence or consistent condom use if sexually active, weight control behaviors, and depressed mood and its implications.

APPROVED:

Major Professor

Committee Member

Committee Member

Committee Member

Department Chair

Dean, School of Public Health

BODY IMAGE, DEPRESSED MOOD, WEIGHT CONCERNS,

AND RISKY SEXUAL BEHAVIORS AMONG FEMALE ADOLESCENTS

Khiya J. Marshall, MPH

DISSERTATION

APPROVED:

Presented to the School of Public Health

University of North Texas

Health Science Center at Fort Worth

In Partial Fulfillment of the Requirements

For the Degree of

Doctor of Public Health

By

Khiya J. Marshall, MPH

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Throughout the completion of my dissertation, there have been a number of people who have helped and guided me along the way. I would first like to thank my Lord and Savior Jesus Christ, because without Him nothing is possible.

I would like to thank my mentor, major advisor, and one of my strongest supporters, Dr. Ximena Uriarte-Rojas. Without Dr. Rojas' dedication, advice, and encouragement, I would not have survived and made it thus far. I would also like to thank my entire committee for their time and commitment, Dr. Susie Ramisetty-Mikler, Dr. Swati Biswas, and Dr. Shawn Jeffries. A special thank you to Dr. Vanessa Miller for her invaluable statistical guidance.

Lastly, I would like to thank my parents who have believed in me and have guided my education from the start. Their continued support and encouragement in everything I do is priceless. They were able to see the light at the end of the tunnel when I could not, and for that I will be eternally grateful.

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CHAPTER 1

INTRODUCTION

Adolescence is a time of self-discovery and growth, both emotionally and physically, and this can be a particularly challenging time for adolescent females. While maturing and ultimately becoming women, adolescent females may feel the pressure to attain a certain aesthetic appearance or engage in health-risk behaviors (alcohol/drugs and risky sexual behaviors). While trying to reach these goals, the adolescent may place herself in health-compromising situations that potentially may result in eating disorders, from having unhealthy weight control behaviors, sexually transmitted diseases (STDs), or pregnancy. Furthermore, having a depressed mood may be the cause or effect of these behaviors.

The study reported here explored the relationship between self-perceived body image, having a depressed mood, and weight control behaviors (exercising; eating less foods, fewer calories, or foods low in fat; fasting for 24 hours or more; taking diet pills, powders, or liquids; vomiting or taking laxatives) and how this association may translate into risky sexual behaviors (having multiple sex partners in one's lifetime, having sex with one or more persons during the past three months, using alcohol and/or drugs before sexual intercourse, and not using protection for the prevention of a sexually transmitted disease or pregnancy) among female high school students (9^{th}-12^{th} grade) in a large metropolitan city (Dallas, Texas). It was important for this study to be conducted

because (1) there is evidence that adolescent females have unrealistic body images and weight control behaviors (Croll, Neumark-Sztainer, Story, & Ireland, 2002; Miller & Pumariega, 2001; Padgett & Biro, 2003) and (2) there is substantial evidence that adolescents do engage in sex and sometimes in risky sexual behaviors, such as not using condoms, using alcohol/drugs before sex, and having multiple sex partners (Biddlecom, 2004; Brener et al., 2002; Grunbaum, 2004; Lowry et al., 1994).

Many of the aforementioned behaviors may result in mental health problems. It is estimated that between 7.7 and 12.8 million of children and adolescents have diagnosed disorders and 20% of this population may be affected by mental health problems (National Mental Health Association [NMHA], 2006; Satcher, 1999). African Americans have higher rates of mental disorders and are not as likely to seek help compared to Caucasians or Hispanics (Satcher, 1999). There are several risk factors for mental disorders, which may include eating disorders (anorexia and bulimia nervosa), depression, risky sexual behaviors, and alcohol/drugs (Center for Adolescent and Family Studies [CAFS], 2003; DiClemente et al., 2001; Hall, Holmqvist, & Sherry, 2004; NMHA, 2006). Therefore, it is imperative to explore the association between body image, depressed mood, and weight control behaviors and if these predict risky sexual behaviors. As a risk factor for mental disorders, depression and having a depressed mood needs further investigation because there is inconclusive research on how depression affects various racial/ethnic groups (Franko & Striegel-Moore, 2002; Garrison, Schluchter, Schoenbach, & Kaplan, 1989; Schraedley, Gotlib, & Hayward, 1999; Sen, 2004; Siegel, Yancey, Aneshensel, & Schuler, 1999).

This study focused not only on exploring the link between body image, depressed mood, weight control behaviors, and risky sexual behaviors; but, it also examined how these factors interplay among diverse ethnic groups (African Americans, Hispanics, and Caucasians). Comprehensive research of this magnitude must include all racial/ethnic groups, so that community-based and school-based public health interventions and programs that are culturally sensitive and effective for all ethnic groups can be developed.

This study used secondary data from the 2003 Dallas Youth Risk Behavior Survey (YRBS). Responses from adolescent females (N=952) 9^{th}-12^{th} grade were used for the analysis, and the data was analyzed using STATA. This study assessed the proposed link between adolescent's perceived body image, depressed mood, and weight control behaviors, and risky sexual behaviors under the hypothesis that adolescents who do not have a depressed mood, those who have a realistic body image, and/or no weight control behaviors would be less likely to engage in risky sexual behaviors than adolescents who have a depressed mood, an unrealistic body image, and weight control behaviors.

Statement of Purpose

The purpose of this dissertation was to explore the relationship among self-perceived body image, depressed mood, and weight control behaviors and how these may be associated with risky sexual behaviors among adolescent females in Dallas, Texas. Dallas, Texas is a city that exhibits high rates of the aforementioned behaviors compared to other cities such as Boston and New York City (Grunbaum et al., 2004). The results of

this study may aid in creating local programs and interventions for adolescent females to reduce the spread of HIV/AIDS, other sexually transmitted diseases (STDs), as well as, unintended pregnancies.

Research Questions

This dissertation sought to further explore perceived body image, depressed mood, and weight control behaviors among Caucasian, African American, and Hispanic adolescent females in Dallas, Texas, and how these variables are interrelated as well as associated with risky sexual behaviors with the aim of answering the following research questions:

1. Is there an ethnic difference in the prevalence rates of a) unrealistic body image, b) depressed mood, c) weight control behaviors, and d) risky sexual behaviors among Caucasian, African American, and Hispanic female adolescents?
2. Is there a bivariate association between body image, depressed mood, and weight control behaviors in this adolescent female population?
3. Do body image, depressed mood, and weight control behaviors predict engaging in risky sexual behaviors in this group of adolescent females?

Research Hypotheses

1. a. African American and Hispanic adolescent females will be more likely to have a depressed mood, an unrealistic body image, or weight control behaviors compared to Caucasian adolescent females.

   b. African American and Hispanic adolescent females will engage in more risky sexual behaviors than Caucasian adolescent females.

2. There is a bivariate association between depressed mood, body image, and weight control behaviors among adolescent females in this sample.

3. a. Adolescents with unrealistic body image, depressed mood, and weight control behaviors will be more likely to engage in risky sexual behaviors regardless of race or ethnicity.

   b. Body image and depressed mood together will be significant predictors of engaging in any one of the five risky sexual behaviors among adolescent females.

   c. Weight control behavior will not be a significant predictor of engaging in risky sexual behaviors.

Delimitations

In this study, the researcher examined adolescent females 14 years and older, who currently attended one of the 23 public high schools in the Dallas Independent School District (DISD) in 2003. This population was based on the criteria from the Centers for Disease Control and Prevention (CDC) and the YRBS which collects data on adolescents (male and female) regarding health-risk behaviors that may result in social issues,

disability, or possibly death. These health-risk behaviors reflect the changes that occur during adolescence. Adolescent females' experiences, beliefs, and attitudes that may lead to health-compromising behaviors may differ from their male counterparts. The results of this study will help determine if body image, depressed mood, and weight control behaviors predict engaging risky sexual behaviors among Caucasian, African American, and Hispanic adolescent females. Since the literature does not adequately address all racial/ethnic groups, understanding the prevalence and connection among these measures will help the city of Dallas better address health-risk behaviors among their students. This is extremely important considering the fact that the majority (91.0%) of the total high school female population in Dallas is either Hispanic or African American (Texas Education Agency [TEA], 2004). For this reason, further exploration was needed.

Limitations

In this study, there were several limitations. The major limitation of the study was that time order or causality could not be determined, since the study used a cross-sectional design (Brooks et al., 2002; Kaltiala-Heino, Kosunen, & Rimpela, 2003; Hutton, Lyketsos, Zenilman, Thompson, & Erbelding, 2004; Rector, Johnson, & Noyes, 2003; Schutt, 2004; Tubman, Windle, & Windle, 1996). The findings could not surmise if engaging in risky sexual behaviors caused a depressed mood or a depressed mood caused risky sexual behaviors (Brooks et al., 2002). Adolescents who are depressed may engage in risky sexual behaviors as a way to self medicate (Kaltiala-Heino et al., 2003). Moreover, the 2003 YRBS questionnaire only included individuals who were attending school at the time of the study and did not include students who were not currently

enrolled, dropped out, attended a private or alternative school, or were home schooled. These individuals may exhibit some behaviors that were different from those that were currently in school. Additionally, the data were self-reported (weight and height information for calculated BMI) and overweight and risk of being labeled as overweight may have been underestimated (Grunbaum et al., 2004). Since depression and body image are complex measurements, the items used to assess these variables (depressed mood and realistic and unrealistic body image, respectively) are not intended to represent clinical conditions, but they help to explain how the students felt about themselves and how they affect the student's behavioral actions. The selection and wording of questions included in the 2003 Dallas YRBS could be modified. In the future, it would be important to make the necessary changes to create questions that are not loaded or misleading. The 2003 Dallas YRBS questionnaire was representative of adolescent females in the Dallas Independent School District, thus the study results cannot be generalized to other adolescent females.

Assumptions

This research study assumed that the participants answered the questionnaire honestly and truthfully. Although the questionnaire was anonymous, sexual behavior may have been a difficult subject matter and some of the participants may not have wanted to answer these questions. Additionally, it was assumed that the participants were able to read and understand English proficiently to complete the questionnaire. The participants were not linked in anyway by their names or other identifying markers to the questionnaires.

Definition of Terms

ABSTAINERS-individuals who have never had sexual intercourse

BODY IMAGE-body image is a multidimensional construct that includes two components, perceptual and attitudinal (Wingood, DiClemente, Harrington, & Davies, 2002). For this study, the perceptual component was used because the survey was able to determine if the respondent was correctly able to judge her body weight (Wingood et al., 2002). Thus, to determined the perceptual component of body image, respondents self-perception of body weight (underweight, about the right weight, overweight) was compared to the calculated (current body weight) BMI. A realistic body image exists when the self-perceived and current body weights are accurate, and an unrealistic body image exits when they are not accurate.

BODY MASS INDEX (BMI)-calculated using self-reported height (meters) and weight (kilograms) ($BMI=kg/m^2$; Kuczmarski et al., 2000).

PSYCHOLOGICAL STATE-determined by depressed mood, feeling sad or hopeless

RISKY SEXUAL BEHAVIORS- the number of sexual partners (having multiple sex partners in one's lifetime and having sex with one or more persons during the past three months), using alcohol and/or drugs before last sexual intercourse, and not using condoms for the prevention of a sexually transmitted disease (STD) or protection for the prevention of pregnancy (Grunbaum et al., 2004; Hall et al., 2004; Snyder & McLaughlin, 2005).

WEIGHT CONTROL BEHAVIOR-behavior that was used to control weight during the past 30 days (exercising; eating less foods, fewer calories, or foods low in fat; fasting for 24 hours or more; taking diet pills, powders, or liquids; vomiting or taking laxatives).

Importance of the Study

The field addressing body image, depressed mood, and weight control behaviors and its association to risky sexual behavior is lacking adequate research and evaluation. The limited data that investigates the interlocking dynamics of the aforementioned fails to include a representative sample of various racial and ethnic groups (Rafiroiu, Sargent, Parra-Medina, Drane, & Valois, 2003), or have combined Caucasian and Hispanic adolescents into one group (Strauss, 1999). Data from the 2003 Dallas YRBS presented the opportunity to explore these relationships further.

This study not only enhanced pertinent information relating to body image, depressed mood, and weight control behaviors; but, it also studied their association to risky sexual behavior among adolescent females. The results of this study may aid in developing culturally appropriate intervention programs that address sensitive issues concerning body image, depressed mood, weight control behaviors and risky sexual behaviors. The results may also assist in reducing female adolescent's risky sexual behaviors.

CHAPTER II

LITERATURE REVIEW

Body image, depressed mood, and weight concerns jointly can have an overwhelming effect on an adolescent female's self-perception. It is important to understand the association between these factors in order to help decrease risky sexual behaviors, particularly among female adolescents. Additionally, it is important to understand if these variables help predict risky sexual behaviors. Several studies (French, Story, Downes, Resnick, & Blum, 1995; Kaltiala-Heino et al., 2003; Lowry et al., 1994; Wingood et al., 2002) have shown that risky sexual behaviors can be influenced by each of these variables.

Body Image

Three factors of body image: personal and psychosocial risk factors, mass media influences, and cultural perceptions influence an adolescent's self-perception of her body. These constructs help form the overall perception of body image and can translate into preventive or dangerous behaviors.

The concept of body image has a profound effect on females, regardless of age and race/ethnicity. The history of body image and the issues that result are somewhat new, despite the fact that a woman's body has always been viewed and placed on display (History of American Women and Body Image, 2004). Over time, the ideal standard of

beauty changes from voluptuous to thin and repeats over again (Anspaugh, 2001). During the Victorian era, it was considered ideal to be full-figured and voluptuous (U.S. Department of Health and Human Services [USDHHS], 2004). Then, in the early 20th century, women who sought to be thinner would often wear a corset to contour the waist (Beauty Marks: Coping with Body Image, 2004; Fox, 1997; History of American Women and Body Image, 2004). It was not until the 1920's that women began to internalize their beauty, and the flapper, which included small breasts, and thin hips and waist, became fashionable (Anspaugh, 2001; History of American Women and Body Image, 2004; USDHHS, 2004). Additionally, during the industrial age, women started to know their exact size (petite or plus) because clothing began to be mass produced with clothing sizes (History of American Women and Body Image, 2004). In the 1950's, a new image of a narrow waist and a large bust was introduced (USDHHS, 2004).

This ideal of thinness progressed in the 1960's and 70's with the model industry, which included Twiggy, showing the waif look as the ideal standard of beauty (History of American Women and Body Image, 2004; USDHHS, 2004). From the 1970's to the 90's, heavier models were being replaced by thinner models on photo shots and in the magazines, and in the 80's, the idea of exercise and being toned became the new body image (Anspaugh, 2001; USDHHS, 2004). The current standard, from the 1990's to the present, has once again offered the image of a narrow waist with a large chest, which reflects the negative images of the past and will continue until society changes its view (History of American Women and Body Image, 2004; USDHHS, 2004).

Personal and Psychosocial Risk Factors

There are several personal and psychosocial risk factors that may alter how a female sees herself in the mirror. Being a woman, in and of itself, is a risk factor, because more women than men feel dissatisfied with their bodies, which may result from the idea that a woman's being is predicated on her outward appearance, unlike men (Fox, 1997). Additionally, age is also a risk factor, females first obtain a sense of their body as small children, and this only intensifies during adolescents with weight gain (around the hips and thighs) and continues through adulthood (Beauty Marks: Coping with Body Image, 2004; Fox, 1997). Risk factors may also include being in a bad mood, being single (for all ages), not being involved in sports, and one of the most obvious, being overweight or obese (Fox, 1997). Female gender, having low self-esteem, depression, a history of substance, physical, or sexual abuse, body dissatisfaction, and high need for social support can result in eating disorders (French et al., 1995).

Mass Media Influences

There are many influences, both positive and negative, that can shape a woman's perception of her body. These influences may include parents, media, peers, role models, and even doctors (Body Image, 2004; Body Image and Your Health, 2004; Wellesley College, n.d.). The media, including television, magazines, and billboards all influence a woman's perception of herself, and more often than not, the average American woman cannot obtain this standard (Beauty Marks: Coping with Body Image, 2004; Body Image, 2004; Fox, 1997; Irwin, Igra, Eyre, Millstein, n.d; USDHHS, 2004; Wellesley College, n.d.), as it is estimated that less than 5% of women can reach the ideal standard of beauty

(Fox, 1997). Positive or negative influences can directly affect one's body image. Having a positive body image means having a realistic self-perception, while a negative body image means experiencing an unrealistic self-perception (Body Image and Your Health, 2004).

Cultural Perceptions

The idea of body image needs to be explored through racial/ethnic groups, because in order to fully understand body image, the entire population must be studied. There are growing investigations of body image across various racial/ethnic groups. In the past, many believed (based on the few studies that were conducted) that women of color did not face the same body image concerns as Caucasian women, but research has shown that this may not actually be the case and many variables may influence their body image perceptions (Fox, 1997). Research has shown that for some groups, African Americans, Asian Americans, and Hispanic women, the more they interact with the dominant culture, the more they will have a negative body image (Ethnicity and Body Image, 2004; Wellesley College, n.d.).

African American women may have different beliefs regarding their ideals of beauty compared to Caucasian women because they have a strong connection with their racial identity, which may protect them from the mainstream idea of beauty (Ethnicity and Body Image, 2004). However, African American as well as Caucasian women place their ideas of body image in the hands of men of their race. African American women believe that African American men prefer women who are not thin; therefore, their body

image may be more positive than Caucasian women who believe that Caucasian men prefer ultra-thin women (Padgett & Biro, 2003).

There is conflicting evidence between body satisfaction and race/ethnicity. While investigating adolescent females, Kelly, Wall, Eisenberg, Story, and Neumark-Sztainer (2005) reported that regardless of race/ethnicity, 27% of middle school and high school adolescent females had high body satisfaction. Contrary, some studies report that Caucasians are more dissatisfied with their weight and body type than African Americans females (Rucker & Cash, 1992; Schreiber et al., 1996), while others report that Hispanic females were least likely to report high body satisfaction when compared to Caucasian and African American adolescents (Kelly et al., 2005). As age increases so does body dissatisfaction, adolescent females in middle school had higher body satisfaction than females in high school (Kelly et al., 2005).

The results of negative body image can lead to emotional problems, unhealthy weight concerns, eating disorders, low self-esteem, anxiety, and depression (Body Image, 2004; Body Image and Your Health, 2004; Irwin et al., n.d.; Wellesley College, n.d.). Having an unrealistic body image may also result in engaging in risky sexual behaviors among adolescent females. It is important to conclude if there is an association between unrealistic body image, psychological state (depressed mood), and weight concerns for female students in Dallas, since some of these behaviors are higher than other metropolitan areas (Boston and New York City; Grunbaum et al., 2004), and to decrease the growing rates of non-condom use, STDs, and HIV/AIDS. Adolescents who have an unrealistic body image may engage in risky sexual behaviors because they feel a sense of

importance because they are shown attention from the opposite sex. This attention may also equate to a sense of validation and meaning because their self-worth may be directly related to the opinions from the opposite sex. Body dissatisfaction may also result in lack of condom negotiation for fear rejection from their partners (Wingood et al., 2002).

Psychological State-Depressed Mood

Experiencing a depressed mood may be a factor that contributes to adolescent females engaging in risky sexual behaviors. It has been shown that adolescent girls experience a depressed mood more than boys (Brooks, Harris, Thrall, & Woods, 2002; Hallfors et al., 2004; Hallfors, Waller, Bauer, Ford, & Halpern, 2005; Kaltiala-Heino et al., 2003; Rector et al., 2003; Shrier, Harris, & Beardslee, 2002; Sen, 2004). This was also seen in the 2003 YRBS, where more females than males felt sad or hopeless during the 12 months almost everyday for two or more weeks (Grunbaum et al., 2004). Hispanics (44.9%) were the most likely to feel sad or hopeless compared to Caucasian (33.3%) or African Americans (30.8%), and in Texas, 40.9% of all female adolescents felt sad or hopeless (Grunbaum et al., 2004). One caveat to the Texas data is that it did not include Houston, which is one of the largest school districts in Texas (Grunbaum et al., 2004).

From a cultural perspective, there is inconsistent evidence regarding depression. A thorough review of the literature based on representative samples suggests that depression among Caucasian and African American adolescent females is not different (Franko & Striegel-Moore, 2002) but other studies have shown differences. Among four racial/ethnic groups, African American and Caucasian adolescents had lower depressive

symptoms when compared to Asian or Hispanic adolescents, using the Children's Depression Inventory (Schraedley et al., 1999), but another study showed that minorities had higher depressive symptoms than Caucasians (Garrison et al., 1989; Sen, 2004; Siegel et al., 1999). Among a predominately Caucasian sample of adolescents, a connection was shown between being depressed and body dissatisfaction (Siegel et al., 1999), but it is important to explore this relationship between other racial/ethnic groups.

Weight Concerns

Weight concerns among adolescent females are very important in understanding if there is a connection with engaging in risky sexual behaviors. The idea of eating disorders can result from a cultural perspective, both through beliefs and attitudes, which has been seen in some cultures for thousands of years (Miller & Pumariega, 2001). In previous studies, compared to Caucasian females, females of other racial/ethnic groups did not show the same weight concerns and body issues. Caucasian adolescents were more likely to have weight concerns and perceived themselves as being overweight compared to African American adolescents (Brener, Eaton, Lowry, & McManus, 2004a; Desmond, Price, Hallinan, & Smith, 1989; Franko & Striegel-Moore, 2002; Kelly et al., 2005; Neff, Sargent, McKeown, Jackson, & Valois, 1997; Neumark-Sztainer et al., 2002; Story, French, Resnick, & Blum, 1995; Strauss, 1999) and African Americans were more likely to perceive their weight as normal (Brener et al., 2004a).

Among all female adolescents, regardless of race/ethnicity, over half reported disordered eating (unhealthy weight loss behaviors including fasting, smoking cigarettes, diet pills, laxatives, vomiting, or binge-eating; Croll et al., 2002). In addition, Caucasian

adolescents were more likely to use diet pills or vomit to lose weight and were almost four times more likely to engage in diet and exercising to maintain their weight (Neff et al., 1997).

Eating disorders, once not observed in minority groups, are now being seen among minorities. Minority groups may have once been protected through their culture from eating disorders, but as they become acclimated in mainstream society they may lose their cultural beliefs (Miller & Pumariega, 2001). It has also been demonstrated that among African American and Caucasian preadolescent girls, African American girls were more concerned with being thin. This concern or drive for thinness was related to the amount of adipose tissue, disapproval and physical appearance dissatisfaction experienced among African American adolescent females (Striegel-Moore, Schreiber, Pike, Wilfley, & Rodin, 1995). Among adolescent females, Hispanic, Asian American, and Native American adolescents had similar weight concerns and behaviors as Caucasians (Neumark-Sztainer et al., 2002). Moreover, Hispanic and African American girls were just as likely or more likely to have distorted eating attitudes and behaviors compared to Caucasian and Asian American girls (Robinson, Chang, Haydel, & Killen, 2001). Among Caucasian, African American, Hispanic, Asian, and American Indian adolescents, Hispanic and American Indian adolescents had the highest prevalence, while African Americans had the least prevalence of disordered eating (Croll et al., 2002). Additionally, trying to lose weight (fasting, diet pills, vomiting, and laxatives) was shown to be the highest among Hispanics and American Indians, although the majority of all racial and ethnic groups were trying to lose weight (Croll et al., 2002; French et al., 1997;

Neumark-Sztainer, Story, Falkner, Beuhring, & Resnick, 1999). Weight control has also been seen more among other racial/ethnic groups, compared to Caucasians when socioeconomic status and body mass index were considered. Other races and ethnicities used diuretics (Hispanics), binged (Asian Americans), and vomited (African Americans) more than Caucasian adolescent females (Story et al., 1995).

A difference has been shown between self-reported BMI (based on height and weight calculations) and adolescent's perceptions. Caucasian and Hispanic adolescents were more likely to perceive themselves as overweight, when they were actually less than the 85th percentile and they were more likely to lose weight, although they were normal weight compared to African Americans (Strauss, 1999). Also, more African American females wanted to gain weight compared to Caucasian or Hispanic females (Strauss, 1999). Interestingly, among Caucasian and African American females, 26% perceived themselves to be underweight when they were actually overweight, regardless of self-reported or measured BMI (Brener et al., 2004a).

Factors such as body image, depressed mood, and weight concerns may affect whether a female engages in risky behaviors that may lead to serious consequences.

Risky Sexual Behaviors

The 1980s showed an increase in the number of sexually active adolescents, but through the 1990s this number decreased, however only for adolescent males (Biddlecom, 2004). For adolescent females, research has shown that the number of those sexually active was unchanged while some research has shown that the number of sexually active females was on the decline by 2001 (Biddlecom, 2004). Consistently over

time (1991-1997 YRBS) more proportions of African American adolescent females, aged 15-17 years old, have had sexual intercourse compared to Caucasians and Hispanics (Blum et al., 2000), but more proportions of Caucasian adolescent females were currently sexually active (within the past three months; Santelli, Lindberg, Abma, McNeely, & Resnick, 2000). Adolescents who engage in risky sexual behaviors (not using condoms and having multiple sex partners) are at an increased risk of becoming pregnant or acquiring a sexually transmitted disease. Sexually transmitted diseases are increasing as many adolescents believe they are indestructible (Schonbeck, n.d.). A quarter of the 15.3 million STDs in the Untied States each year occur among adolescents, and the majority of the cases occur among females (National Center for Chronic Disease Prevention and Health Promotion [NCCDPHD], 2005; Schonbeck, n.d.).

As age increases so does the number of sexual partners in one's lifetime. For adolescent females aged 14 to 21, having 6 or more sexual partner's increases from 8% to 21% respectively (Santelli, Brener, Lowry, Bhatt, & Zabin, 1998). Also, as age increases the number of adolescent females with only one lifetime partner decreases, among 21 year olds, 20% had only one sexual partner (Santelli et al., 1998). Taking race/ethnicity into consideration, African American adolescent females were almost twice as likely to have had 6 or more sexual partners in their lifetime compared to Hispanic and Caucasian females, but compared to Caucasians, Hispanic females were less likely to have had 6 or more sexual partners in their lifetime (Santelli et al., 1998).

Although the number of multiple sex partners has not changed significantly, condom use at last sexual intercourse among adolescent females has increased from

1991-2003 (38% and 75% respectively; Brener et al., 2004b; Grunbaum et al., 2004). Data from the 1992 YRBS also indicated that there was no relationship between the number of sexual partners and condom use at last intercourse (Santelli et al., 1998). However, there was a slight difference using the 1992 YRBS household supplement which oversampled those that were not currently enrolled in school (Santelli, Robin, Brener, & Lowry, 2001). A negative association was found between the number of sexual partners, from one partner (43%), two partners (33%), or three or more partners (36%) and condom use at last sexual intercourse (Santelli et al., 2001). Additionally, when age was taken into consideration, as age increased condom use at last intercourse decreased, with 52% of adolescent females age 14-15 years old using a condom and only 32% of those 20-22 years old using a condom (Santelli et al., 2001). One explanation for a decrease in condom use as age increases could be related to the commitment level of the relationship. As females age, they may be more likely to have a committed relationship and thus believe that their sexual partner is not dating outside the relationship. Conversely, adolescents may not feel they are in committed relationships, and therefore, it is important to use a condom. African Americans (52%) were more likely to use condoms than Caucasian (39%) or Hispanic adolescent females (35%; Santelli et al., 1997; Santelli et al., 2001).

For the prevention of pregnancy, the majority of adolescent females aged 14-22 used either condoms (37%) or birth control pills (31%) while 16% did not use any method (Santelli et al., 1997). Birth control pills combined with the use of condoms was used by 20% of all adolescent females (Santelli et al., 1997). Moreover, African

American adolescent females were more likely and Hispanics were less likely to use condoms and birth control pills together as methods of pregnancy prevention compared to Caucasian adolescent females (Santelli et al., 1997).

The CDC (1999 and 2002) analyzed sexual risk behaviors using data from the YRBS. The 1999 report examined YRBS from 1991-1997 and included eight cities: Boston, Chicago, Dallas, Fort Lauderdale, Jersey City, Miami, Philadelphia, and San Diego. Dallas comprised a sample that was 51.4% African American, 33.1% Hispanic, 11.4% Caucasian, and 4.1% "Other" (9^{th}-12^{th} grade; CDC, 1999). In Dallas, from 1991-1997, the number of students who had ever had sex decreased by 7%, the number of currently sexually activity students decreased by 8%, while condom use increased by 25% (CDC, 1999). The 2002 report (1991-2001), which included all fifty states and the District of Columbia, showed that the number of students that were sexually experienced decreased by 16% and multiple sex partners decreased by 24% (Brener et al., 2002). On the other hand, the number of currently sexually active students remained relatively unchanged and the number of students who used alcohol and/or drugs prior to their last sexual intercourse increased by 18% (Brener et al., 2002).

The 2003 YRBS showed that nationally, among female adolescents, more African American than Hispanic or Caucasians had ever had sex, were currently sexually active (past three months), or had four or more sexual partners in their lifetime (Grunbaum et al., 2004). In Texas, among all females, 45.8% had sex in their lifetime and 11.6% had four or more sexual partners in their lifetime (excluding Houston, which is one of the largest school districts in Texas; Grunbaum et al., 2004). Although African American

adolescent females were more likely to have had sex, they were more likely to have used a condom during last sexual intercourse compared to Caucasian or Hispanic adolescents (Grunbaum et al., 2004). Among all females in Texas, over one-third (36.3%) were currently sexually active, while over half (57.2%) used a condom during last sexual intercourse (Grunbaum et al., 2004). These reports indicate that more interventions are needed to address some of the remaining issues involving currently sexually active students and alcohol and drug usage.

It is important to understand how body image, depressed mood, weight concerns, and alcohol and drug use may influence an adolescent females' decision to engage in risky sexual behaviors. Several studies (French et al., 1995; Kaltiala-Heino et al., 2003; Lowry et al., 1994; Wingood et al., 2002) have shown how these variables have been used to predict risky sexual behaviors among adolescents.

Body Image

A negative body image has been shown to be associated with poor sexual health, although this has not been extensively researched among African American women and adolescents (Wingood et al., 2002). If an adolescent is dissatisfied with her body, she is more likely to engage in riskier sexual attitudes, beliefs, and behaviors (Wingood et al., 2002). Body dissatisfaction has been shown to result in a decrease of condom use during last sexual intercourse and future investigations should include an analysis of the interlocking dynamic of body image and how this impacts sexual attitudes, beliefs, and behaviors, especially among African American adolescents (Wingood et al., 2002).

Psychological State-Depressed Mood

Research on risky sexual behaviors and depression has not been fully examined (Kaltiala-Heino et al., 2003; Rector et al., 2003), and most of the studies that have been conducted included a population that was predominately Caucasian (68-91%; Brooks et al., 2002; Cotton, Larkin, Hoopes, Cromer, & Rosenthal, 2005; Hallfors et al., 2004; Hallfors et al., 2005; Shrier et al., 2002; Tubman et al., 1996). Some research has shown that there is no association between race/ethnicity (Caucasian, African American, Hispanic, Asian, and other), depression, and sex (Brooks et al., 2002). Sexually active females who never used birth control were almost two times more likely to have depressive symptoms compared to females that were not sexually active (Brooks et al., 2002). Other studies have found that sexually active Caucasian (98%) adolescents exhibited depressive symptoms (Tubman et al., 1996), and there is an association between heavy petting (fondling under clothes or naked) and self-reported depression among adolescents (Kaltiala-Heino et al., 2003). Additionally, as the type of sexual experience increases (kissing, light/heavy petting, and sexual intercourse) so does depression (Kaltiala-Heino et al., 2003). Rector and colleagues (2003) found that sexually active females were more likely to be depressed during the past week compared to those who were not sexually active (25.3% and 7.7% respectively). Also, compared to sexually active females, sexually inactive females were more likely to never or rarely feel depressed (36.8% and 60.2% respectively; Rector et al., 2003).

Engaging in high-risk behaviors is more common among boys, but girls who engage in this type of behavior are more vulnerable to depression and suicide (ideation

and attempt; Hallfors et al., 2004). It is difficult to determine if depression leads to risky sexual behavior or if risky sexual behaviors lead to depression. Risky sexual behavior has been shown to develop before adolescents experience depressive symptoms, and experimenting with drugs may also increase the likelihood of becoming depressed (Hallfors et al., 2005). Among adolescent females there was an association between high or very high depression symptoms and STD diagnosis within a year (Hall et al., 2004; Shrier et al., 2002). A connection between body weight, depression, and self-esteem has also been reported. Girls who are dissatisfied with their weight had a higher level of depression and lower self-esteem compared to those that were satisfied with their weight (Tomori & Rus-Makovec, 2000).

Weight Concerns

Several studies conducted by Neumark-Sztainer, Story, and French (1996) and Neumark-Sztainer, Story, Dixon, and Murray (1998) have shown that in adolescents unhealthy weight loss behaviors, which include vomiting, using laxatives, and diet pills can lead to health-compromising behaviors such as tobacco, alcohol, marijuana use and risky sexual behaviors (not using condoms and having multiple sex partners). Frequent dieting has also been shown to result in negative health behaviors such as substance use along with early sexual intercourse (French et al., 1995). The degree of extreme dieting (vomiting and diet pills) and moderate dieting (exercise or eating fewer calories) correlate to unhealthy risk behaviors, with the extreme dieters more likely to engage in alcohol use, tobacco, marijuana, suicide attempts, and exercise (Rafiroiu et al., 2003).

Additionally, it has been found that adolescents who are insecure about their weight increase their risk of smoking and drinking (Neufeld, 2002).

Alcohol/Drug Use

Data from the 1990 YRBS showed that substance use (alcohol, cigarettes, marijuana, cocaine, and other illicit drugs) was related to engaging in risky sexual behaviors. Sexual intercourse, having multiple sex partners, and not using a condom at last sexual intercourse were associated with substance use (Lowry et al., 1994). Those who did not engage in substance use were less likely to engage in these activities. When substance use was further examined (adjusting for race/ethnicity, sex, and age) using marijuana, cocaine, and other illicit drugs presented a greater risk of sexual behaviors (have four or more sexual partners) compared to those who used alcohol or cigarettes (Lowry et al., 1994).

Evidence found in the 1992 YRBS (age 14-22) was in contrast to the evidence found in the 1990 YRBS. Among adolescent females, alcohol use rather than illicit drug use had a greater affect of having multiple sexual partners (Santelli et al., 1998). As the number of sexual partners increased so did recent (past 30 days) and lifetime substance use (Santelli et al., 2001). Additionally, there was not a relationship between substance use (alcohol/drugs) at last intercourse and using a condom (Santelli et al., 2001). However, there was a difference between substance use (alcohol/drugs) at last intercourse and having two or more sexual partners. Females who used alcohol/drugs were more likely to have two or more sexual partners compared to those who did not use these substances (44% and 14% respectively, Santelli et al., 2001).

Santelli and colleagues (2001) also reported that with respect to lifetime and recent use (past 30 days) of alcohol and other drug use, Caucasians had the highest score, followed by Hispanics, and then African Americans (male and female). According to Santelli et al., (2001) there was not a significant interaction between race/ethnicity, substance use, and multiple sex partners using the 1992 YRBS household supplement (Santelli et al., 2001). On the contrary, Valois, Oeltmann, Waller, and Hussey (1999) using the 1993 YRBS found that for Caucasian and African American adolescents, the presence of four or more sexual partners in one's lifetime contributed to substance use (cigarette, alcohol, and marijuana). Additionally, using the 1999 YRBS, adolescent females (Caucasians, African Americans, Hispanics, and others) who had multiple sex partners were twice as likely to have used alcohol/drugs before sexual intercourse compared to those who had one sexual partner within the past three months (Howard & Wang, 2004). The 2003 YRBS illustrated that Caucasian female adolescents used alcohol and/or drugs before last sexual intercourse more than Hispanic or African Americans, and in Texas, 17.3% of all females used alcohol and/or drugs before last sexual intercourse (Grunbaum et al., 2004).

In summary, the literature has shown the need for further investigation among adolescent females. Several studies have shown that adolescents of color may not have an unrealistic body image and weight concerns compared to Caucasian adolescents (Akan & Grillo, 1995; Desmond et al., 1989; Neff et al., 1997; Neumark-Sztainer et al., 2002; Strauss, 1999). African Americans may be less likely to consider themselves overweight compared to Caucasian adolescents (Desmond et al., 1989; Neff et al., 1997).

Among female adolescents, Caucasians were twice as likely as African Americans to believe they were overweight, with Caucasians wanting to lose weight and African Americans wanting to gain weight (Neff et al., 1997). Additionally, with regards to weight management practices, it appears that Caucasian adolescents used unhealthy dieting practices (diet pills and vomiting), reduced caloric intake, and exercised more than African American adolescents (Neff et al., 1997). There is also evidence that risky sexual behaviors among adolescents may be linked to body image and weight concerns. Risky sexual behaviors and unhealthy eating are intertwined. Adolescents who have unhealthy eating practices may engage in health-compromising behaviors such as substance and alcohol use and risky sexual behaviors (not using contraception and multiple sex partners; Neumark-Sztainer et al., 1996; Neumark-Sztainer et al., 1998). Those adolescents who have health-compromising behaviors may also be at risk for unhealthy eating (Neumark-Sztainer et al., 1997). Moreover, body image and risky sexual behaviors have shown to be connected. Across various racial/ethnic groups, having a negative body image has been associated with risky sexual behaviors (Wingood et al., 2002). This dissatisfaction leads to condom nonuse and not being able to discuss condom usage with a partner (Wingood et al., 2002).

Unlike their male counterparts from 1988-2001, adolescent females did not experience considerable changes in the number of sexual partners (Brener et al., 2002; Santelli et al., 2000). It is important to understand risky sexual behaviors among adolescent females because with the exception of a few studies, the literature is scarce as it applies to the risk of adolescent girls who have multiple sex partners (Howard & Wang,

2004). Howard and Wang (2004) found that 13.1% of adolescent females had two or more sexual partners within the past three months, while almost two thirds had one sexual partner during this same time period. African American compared to Caucasian, Hispanic, and other adolescent females had the highest prevalence of multiple sex partners within the past three months (Howard & Wang, 2004). Additionally, substance use has been shown to be related to such risky behaviors as having multiple sex partners and not using protection, but more research is needed among various racial and ethnic groups. Although there is evidence that feeling sad or hopeless is related to having multiple sex partners, more research is needed to explore race/ethnicity and depressed mood (feeling sad or hopeless).

There is conflicting evidence about relationships between body image, depressed mood (feeling sad and hopeless), weight concerns, and risky sexual behaviors across racial/ethnic groups. Therefore, it is necessary to examine these variables when exploring the concern of adolescent females engaging in unhealthy sexual practices in Dallas, Texas. This study investigated the extent to which these variables predict risky sexual behavior among adolescents living in the Dallas area. Dallas is a city that exhibits high rates of these behaviors compared to other cities across the country (Grunbaum et al., 2004). Locally, the results of this study may aid in the creation of programs and interventions for adolescent females.

CHAPTER III

METHODOLOGY

In order to investigate the relationship between various health-risk behaviors, it was important to study a comprehensive and diverse sample of adolescent females. To truly understand a population, a representative sample of the population needs to be studied. This study explored these relationships using a diverse study body, comprising Caucasian, African American, and Hispanic adolescents who responded to the YRBS in the city of Dallas, Texas.

Study and Sample

There were a total of 1,797 students (952 female and 839 male) who completed the 2003 Dallas YRBS. This study included only female participants. Fifty-two students were excluded because race/ethnicity was missing, the small sample size of the "other" racial group, or they selected more than one race/ethnicity, resulting in 900 female respondents, aged 14 years and older included in the analyses. All of the participants were currently enrolled in one of the 23 Dallas public high schools.

Protection of Human Subjects

To protect participants' rights, the Institutional Review Board (IRB) at the University of North Texas Health Science Center reviewed the research protocol and approved the research study. De-identified secondary data were used in this study.

The YRBS took precautions, making sure that each student understood that their responses were anonymous and voluntary (Grunbaum et al., 2004).

Data Collection

This study used secondary data from the 2003 Dallas Youth Risk Behavior Survey conducted by the Centers for Disease Control and Prevention under the Youth Risk Behavior Surveillance System (YRBSS; NCCDPHD, 2005). The YRBSS was designed to study health-risk behaviors among high school students to observe over time the changes that may occur, and if various health-risk behaviors are related (Brener et al., 2004b). Health-risk behaviors that are examined in the YRBS include: unhealthy dieting behaviors; inadequate physical activity; tobacco use; alcohol and other drug use; sexual behaviors; unintended pregnancies; mental health and unintentional injuries, all of which could result in profound physical, social, and emotional problems well into adulthood (NCCDPHD, 2005).

In 1989, the CDC created a panel (from each of the health-risk behaviors) to formulate questions that would be used in the YRBS (Brener et al., 2004b). This panel was diverse and included scientists (federal and nonfederal); researchers from the National Center for Health Statistics and the National Center for Chronic Disease Prevention and Health Promotion (Division of Adolescent and School Health); and the Society of State Directors of Health, Physical Education, and Recreation (Brener et al., 2004b). Before a new survey is administered, the previous version is reviewed for updated priorities that measure adolescent's health-risk behaviors.

The last extensive review was conducted in 1997, and the 2003 survey was created with minimal changes from the 1999 version (Brener et al., 2004b).

The YRBS is conducted biennially at the national, state, and local levels (Brener et al., 2004b), and the CDC consolidates these data. Before the YRBS was administered, parental permission had to be obtained (Brener et al., 2004b). The state and local surveys use a two-stage cluster sample design. The first stage of sampling includes a sampling of schools with probability proportional to school enrollment size, while the second stage includes a random sample of eligible participating students in a mandatory class or class period (English or second period; Brener et al., 2004b). Everyone in the selected class is eligible to participate (Brener et al., 2004b). The sample size for state and local questionnaires ranged from 968 to over 9,000 students (Grunbaum et al., 2004).

Since the YRBS is a survey that is not based on simple random sampling, the data had to be analyzed by taking weights, primary sampling units (PSU's), and stratification (strata) into consideration (The University of California at Los Angeles [UCLA], n.d.). Survey data analysis software (STATA) accounted for differences in the two-stage cluster sample design that was used for this study (UCLA, n.d.). With survey data analysis, the standard errors of the estimate will be accurate and not underestimated using STATA.

The 2003 Dallas YRBS was self-administered to each student using a computer-scannable booklet (Brener et al., 2004b). In 2003, Dallas had a school response rate of 100%, a student response rate of 77%, and an overall response rate of 77% (Grunbaum et al., 2004). The Dallas YRBS did not oversample African American and Hispanic students

because they have a high enough number of students within these groups to obtain a good estimate without oversampling (Brener et al., 2004b). The data for the 2003 Dallas YRBS was provided by the CDC and was adjusted for gender, grade, race/ethnicity, and non-responses (Brener et al., 2004b); therefore, each survey was representative of all 9^{th}-12^{th} graders (14 years and older) in Dallas, Texas.

The 2003 Dallas sample was based solely on the 23 public school students in the Dallas Independent School District (DISD). Eight alternative and 10 private schools were not surveyed. During the 2004-2005 academic school year, DISD had a total student body population of 158,027 students (K-12^{th}) with one-fourth of the population in grades 9^{th}-12^{th} (TEA, 2004). Among females (9^{th}-12^{th} grade), over one half were Hispanic (54.3%), one-third were African American (37.0%), and 7.6% were Caucasian (TEA, 2004).

For this study, demographic variables (race/ethnicity, age, grade level, and grades in school), body image, depressed mood, weight control behaviors (exercising; eating less food, fewer calories, or foods low in fat; went without eating for 24 hours or more; took diet pills, powders, or liquids without a doctor's advice; or vomited or took laxatives within the last 30 days to loss weight or keep form gaining weight), and risky sexual behaviors (having multiple sex partners in one's lifetime, having sex with one or more persons during the past three months, using alcohol/drugs before last sexual intercourse, and not using protection (birth control pills, condoms, Depo-Provera, withdrawal, or some other method) for the prevention of a STD or pregnancy) were examined.

Instrumentation

The 2003 Dallas Youth Risk Behavior Survey consisted of 99 multiple-choice questions. These questions include demographics, personal safety; sad feelings and attempted suicide; tobacco, alcohol, drug use; sexual behaviors; body weight; eating habits; physical activity; and general questions. The variables used in this study were demographics, body image, depressed mood, weight control behaviors, and risky sexual behaviors.

Depressed mood. To provide a basic determinant of depressed mood, the question "During the past 12 months, did you ever feel sad or hopeless almost every day for two weeks or more in a row that you stopped doing some usual activities?" was used. The response categories were "yes" and "no."

Self-perception of body weight. Self-perception of body weight was determined by the response to the question "How do you describe your weight?" with the following choices: very underweight, slightly underweight, about the right weight, slightly overweight, or very overweight. In this study, perceived body size was categorized into underweight, normal weight, and overweight. The participants' self-reported height (in meters) and weight (in kilograms) without shoes was used to calculate their body mass index (BMI) or current body weight. BMI was classified based on the data from the National Health and Nutrition Examination Survey for females who were at risk for becoming overweight and who were overweight. To classify at risk for becoming overweight, a BMI of $\geq 85^{th}$ percentile was used and overweight was classified a BMI $\geq 95^{th}$ percentile by age and sex, which is similar to a BMI ≥ 30 for adults (Kuczmarski et

al., 2000). In the final analysis, at risk for becoming overweight and overweight were used together to represent overweight.

Since self-reported height and weight were collected in the YRBS, the calculated BMI probably underestimated adolescent females who were at risk of becoming overweight or who were overweight (Brener, McManus, Galuska, Lowry, & Wechsler, 2003). Reliability and validity using the 1999 YRBS showed that Caucasian adolescents were more likely to over-report height and females were more likely to underreport weight (based on both self-reported and actual measurements; Brener et al., 2003). In 2000, the validity of self-reported height and weight was conducted. It was concluded that participants height and weight, when compared with the calculated BMI was reliable, but individually, height was over-reported (2.7 inches) and weight was under-reported (3.5 pounds), hence overweight was probably underestimated (Brener et al., 2004b).

Body weight/Weight concerns/Weight control behaviors. Weight concern was assessed by asking the participants "Which of the following are you trying to do about your weight?", lose weight, gain weight, stay the same, and not trying to do anything about my weight. Weight control behaviors among the participants was ascertained by the participants' response to six items: exercising; eating less food, fewer calories, or foods low in fat; went without eating for 24 hours or more; took diet pills, powders, or liquids without a doctor's advice; or vomited or took laxatives within the last 30 days to loss weight or keep form gaining weight. The response categories for each question were "yes" and "no." If the respondents answered "yes" to any of the aforementioned weight control behaviors they were coded positive for engaging in weight control behaviors.

Conversely, if they respondents answered "no" to all of the weight control behaviors they were coded as not engaging in weight control behaviors. The final variable was a dichotomous variable (yes/no) that incorporated any positive response to at least one.

Risky sexual behavior (outcome/dependent variable). To assess risky sexual behaviors, the following questions were used, "During your life, with how many people have you had sexual intercourse?", "During the past 3 months, with how many people did you have sexual intercourse?", "Did you drink alcohol or use drugs before you had sexual intercourse the last time?", "The last time you had sexual intercourse, did you or your partner use a condom?", and "The last time you had sexual intercourse, what one method did you or your partner use to prevent pregnancy?"

Number of multiple partners (lifetime), was a three level variable- those who never engaged in sexual behavior, those who had 1-3 partners, and those who had four or more partners. Multinomial regression was used for this outcome variables with never had sex group serving as the reference group.

Number of partners during the past three months was dichotomized into those who never engaged in sexual behavior lifetime or past three months and those who had one or more partners. Logistic regression was used for this outcome variable with never had sex or not in the past three months serving as the reference group. For the remaining three outcome variables that refer to sexual activity the last time (alcohol/drugs before last sexual intercourse; condom nonuse; and no method to prevent pregnancy), those who did not ever engage in sex lifetime or during the past three months were excluded from

the analyses. Hence, these variables are dichotomous and were used in the logistic regression.

Demographic. The demographic variables of the participants included age, grade level, race/ethnicity, and grades in school.

Data Analysis

To carry out data analysis, STATA was used because the data were obtained using cluster sampling. Descriptive statistics were computed for demographic variables (age, grade level, race/ethnicity, and grades in school), depressed mood, self-perception of body weight, weight control behaviors, and risky sexual behaviors to describe the sample population. Additionally, the prevalence of depressed mood, self-perception of body weight, weight control behaviors, and risky sexual behaviors (having multiple sex partners in one's lifetime, having sex with one or more persons during the past three months, using alcohol/drugs before last sexual intercourse, and not using protection for the prevention of a STD or pregnancy) were assessed for the three racial/ethnic groups.

Bivariate Association

To determine if there is a significant association between the three behaviors (depressed mood, body image, and weight control behaviors), chi-square tests were used since all of the variables were categorical.

Multinomial and Binary Logistic Regression

To determine which of these variables predicted risky sexual behaviors, multinomial logistic regression (for outcome variable-multiple partners) and binary logistic regression were utilized after associations were tested between the three

behaviors. Abstainers were included in the logistic regression models of having multiple sex partners in one's lifetime and having sex within the past three months. Abstainers were excluded from logistic regression models pertaining to using alcohol/drugs before last sex, not using a condom, and not using protection to prevent pregnancy.

The multinomial logistic regression model was as follows:

1. Having multiple sex partners (1-3 and 4 or more) in one's lifetime=body image + depressed mood + weight control + race/ethnicity + grade

The four binary logistic regression models were as follows:

1. Having sex with one or more persons during the past three months= body image + depressed mood + weight control + race/ethnicity + grade
2. Using alcohol/drugs before sexual intercourse= body image + depressed mood + weight control + race/ethnicity + grade
3. Not using a condom= body image + depressed mood + weight control + race/ethnicity + grade
4. Not using protection for the prevention of pregnancy= body image + depressed mood + weight control + race/ethnicity + grade

The dependent variable was one of the risky sexual behaviors and the independent variables included depressed mood, body image, and weight control behaviors, controlling for race/ethnicity and grade level. Odds ratio (OR) and the 95% confidence interval (CI) was calculated and the significance level used was 0.05.

For predictor variables: body image, depressed mood, and weight control behaviors, the reference groups were having a realistic body image, not feeling sad or

hopeless, and not engaging in any of the weight control behaviors, respectively. For the outcome variable risky sexual behaviors: having multiple sex partners in one's lifetime, having sex with one or more persons during the past three months, using alcohol/drugs before last sexual intercourse, using condoms, and using protection for the prevention of pregnancy, the reference groups were never had sex, not engaging in sex (lifetime or during the past three months), not using alcohol/drugs, not using condoms, and not using protection for the prevention of pregnancy, respectively.

CHAPTER IV

RESULTS

This dissertation sought to further explore depressed mood, weight control behaviors, and body image among Caucasian, African American, and Hispanic adolescent females in Dallas, Texas and determine how these variables may be interrelated as well as associated with risky sexual behaviors. The sample included 900 Caucasian, African American, and Hispanic high school females attending a local public school in Dallas, Texas during the spring of 2003. The sociodemographic characteristics of the sample are provided in Table 1. Among all females, the majority were Hispanic (46.9%) or African American (42.8%). The age of the student population ranged from 14-18 years old and older, with a mean age of 16.24 years. The sample is equally distributed across grade levels (9^{th}-12^{th}) and almost 60% of the total population received mostly B grades during the past 12 months. Age, grade level, and grades in school were similar for all racial/ethnic groups (data not shown). Tables 2 to 7 show the study variables of interest; depressed mood, body image, weight control, sexual behaviors and their distribution in the study population.

Overall, more than one-third of the population (39.1%) had a depressed mood (Table 2). Among racial/ethnic groups, Hispanic and African American students were more likely to have experienced a depressed mood in the past 12 months than Caucasians. However, this difference is not statistically significant.

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Table 1 Sociodemographic Characteristics of Adolescent Females

	Total Population *N* (%)
	N=900
Race/Ethnicity	
Caucasian	93 (10.3)
African American	385 (42.8)
Hispanic	422 (46.9)
Age	
14 years old	75 (8.3)
15 years old	199 (22.1)
16 years old	227 (25.2)
17 years old	229 (25.4)
18 years old and older	170 (18.9)
Grade	
9th	218 (24.3)
10th	224 (24.9)
11th	205 (22.8)
12th	252 (28.0)
Grades in School	
Mostly A's	182 (21.0)
Mostly B's	508 (58.7)
Mostly C's	160 (18.5)
Mostly D's	12 (1.4)
Mostly F's	3 (0.4)

Table 2 Depressed Mood by Race/Ethnicity

	Total Population *N* (%)	Caucasian *N* (%)	African American *N* (%)	Hispanic *N* (%)	χ^2 (*df*)
	N=900	*N*=93	*N*=385	*N*=422	
Depressed Mood					
Yes	352 (39.1)	32 (34.4)	146 (37.9)	174 (41.2)	1.9 (2)
No	548 (60.9)	61 (65.6)	239 (62.1)	248 (50.8)	

Weight and Body Mass Index

The participant's self-reported weight (lbs.) ranged from 92.8 to 279.4 lbs., with a mean weight of 140 lbs (Table 3). The mean weight for African American females was at least 10 lbs. higher than Hispanic and Caucasian females. The student's mean BMI was 24.0, with a range from 14.2 to 43.9. African Americans had a higher BMI compared to Hispanic and Caucasian adolescent females. Pairwise two-sample t-tests were performed for weight and BMI, comparing the three racial/ethnic groups. The results showed that for weight, African Americans were significantly different from Caucasians and Hispanics ($p \leq .001$). Additionally, African Americans were also significantly different from Caucasians ($p \leq .001$) and Hispanics ($p \leq .05$) when compared with BMI, and for BMI, Hispanics were significantly different from Caucasians ($p \leq .001$).

Table 3 Weight (lbs.) and Body Mass Index (BMI) by Race/Ethnicity

	M [a]	SD [b]	Min	Max
Weight (lbs.)				
Total Population	139.5	29.9	92.8	279.4
Caucasian	132.1	21.8	97.8	204.6
African American	145.5	31.4	97.8	279.4
Hispanic	135.5	28.9	92.8	244.5
Body Mass Index (BMI)				
Total Population	24.0	5.0	14.2	43.9
Caucasian	22.3	3.7	15.7	37.8
African American	24.6	5.1	15.4	43.9
Hispanic	23.8	5.0	14.2	43.4

[a] Mean [b] Standard Deviation

Current Body Weight, Perceived Body Weight, and Body Image

For current body weight, based on self-reported height and weight, nearly three-quarters of respondents (71.3%) were of normal weight; however, only 51.6% perceived their weight as normal (Table 4). There were significant associations between race/ethnicity and both current and perceived body weight. More Caucasian females (84.1%) were of normal weight than either African American or Hispanic females (69.3% and 70.3% respectively; Table 4), and fewer African Americans were underweight compared to Caucasian or Hispanic females (χ^2=16.6 df=4, $p\leq$.01). Slightly over one half of all respondents (51.3%) perceived their body weight as normal, and more Caucasians perceived their body weight as normal compared to African American or Hispanic adolescents. Additionally, more Hispanics perceived their body weight as underweight or overweight, compared to other females. Although more Hispanics perceived themselves as overweight, fewer were actually overweight compared to African Americans (based on self-reported height and weight). Fewer Caucasians perceived their weight as underweight, but more Caucasians were actually underweight compared to African American or Hispanic females.

Body image was assessed by comparing respondent's current body weight with their perceived body weight. Overall, almost two-thirds (65.2%) had a realistic body image (Table 4). Among those with a realistic body image, six percent of those who were underweight perceived themselves as underweight, while the majority (86.4%) who were normal weight perceived themselves as normal weight, and 53.0% who were overweight perceived themselves as overweight (Table 5). The overwhelming majority of Caucasians

(92.5%), Hispanics (87.1%), and African Americans (84.3%) who were normal weight perceived their weight as normal (data not shown).

Table 4 Current Body Weight, Perceived Body Weight and Body Image by Race/Ethnicity

	Total Population *N* (%)	Caucasian *N* (%)	African American *N* (%)	Hispanic *N* (%)	χ^2 (*df*)
	N=839	*N*=88	*N*=371	*N*=380	
Current Body Weight					
Underweight	15 (1.8)	3 (3.4)	2 (0.5)	10 (2.6)	16.6 (4)**
Normal	598 (71.3)	74 (84.1)	257 (69.3)	267 (70.3)	
Overweight	226 (26.9)	11 (12.5)	112 (30.2)	103 (27.1)	
Perceived Body Weight					
Underweight	89 (10.6)	5 (5.7)	40 (10.8)	44 (11.6)	15.3 (4)**
Normal	433 (51.6)	53 (60.2)	210 (56.6)	170 (44.7)	
Overweight	317 (37.8)	30 (34.1)	121 (32.6)	166 (43.7)	
Body Image					
Realistic	547 (65.2)	58 (65.9)	255 (68.7)	234 (61.6)	4.3 (2)
Unrealistic	292 (34.8)	30 (34.1)	116 (31.3)	146 (38.4)	

**$p \leq .01$

Table 5 Perceived and Current Body Weight of Adolescent Females

	Perceived Body Weight		
Current Body Weight	**Underweight** %	**Normal** %	**Overweight** %
	N=89	*N*=433	*N*=317
Underweight	5.6	2.1	0.3
Normal	85.4	86.4	46.7
Overweight	9.0	11.5	53.0

Weight Strategies and Weight Control Behaviors

Examination of weight strategies revealed that over one half of all participants (58.0%) were trying to lose weight, while only 10.3% were trying to gain weight (Table 6). Weight strategies (χ^2=22.3 *df*=6, $p \leq .001$) differed significantly among the three racial/ethnic groups. Almost two-thirds of Hispanics and Caucasians (63.4% and 64.8% respectively) were trying to lose weight compared to 50.4% of African Americans. Higher proportions of African Americans wanted to stay at the same weight or gain weight compared to Caucasian or Hispanic adolescents.

With regards to weight control behaviors, most adolescents exercised (62.4%) or ate less, took in fewer calories, or ate foods low in fat (46.0%), and less than 15% of all participants, regardless of race or ethnicity, went without eating (24 hours); used diet pills/powders/liquids; or vomited/laxatives to lose weight (Table 6). Significant associations were found between weight control behaviors and race/ethnicity: eating less; fewer calories, foods low in fat (χ^2=13.6 *df*=2, $p \leq .001$), diet pills; powders; liquids (χ^2=6.5 *df*=2, $p \leq .05$), and vomit/laxatives (χ^2=9.0 *df*=2, $p \leq .01$). In general, more African Americans engaged in all weight control behaviors compared Caucasian and Hispanic females (Table 6). Caucasian and Hispanic females reported similar weight control behaviors that they used to lose weight or keep from gaining weight during the preceding 30 days. Seventy-two percent of respondents engaged in any type of weight control. More Caucasian and Hispanic females than African Americans engaged in any type of weight control (χ^2=6.9 *df*=2, $p \leq .05$; Table 6).

Table 6 Weight Strategies and Weight Control by Race/Ethnicity

	Total Population *N* (%)	Caucasian *N* (%)	African American *N* (%)	Hispanic *N* (%)	χ^2 (*df*)
	N=896	*N*=93	*N*=383	*N*=420	
Weight Strategies					
Lose weight	520 (58.0)	59 (63.4)	193 (50.4)	268 (63.8)	22.3 (6)***
Gain weight	92 (10.3)	4 (4.3)	50 (13.1)	38 (9.1)	
Stay the same weight	145 (16.2)	12 (12.9)	78 (20.4)	55 (13.1)	
Do nothing about Weight	139 (15.5)	18 (19.4)	62 (16.2)	59 (14.1)	
Weight Control Behaviors					
Exercise	557 (62.4)	62 (67.4)	226 (59.3)	269 (64.1)	3.0 (2)
Ate less, fewer calories, Foods low in fat	410 (46.0)	48 (52.2)	148 (38.9)	214 (51.1)	13.6 (2)***
Fasting (24 hours)	130 (14.6)	12 (13.0)	53 (13.9)	65 (15.5)	0.6 (2)
Diet pills, powders, liquids	90 (10.1)	12 (12.9)	27 (7.1)	51 (12.1)	6.5 (2)*
Vomit or laxatives	57 (6.4)	10 (10.8)	14 (3.7)	33 (7.9)	9.0 (2)**
Weight Control	*N*=889	*N*=91	*N*=379	*N*=419	
Yes	639 (71.9)	69 (75.8)	255 (67.3)	315 (75.2)	6.9 (2)*
No	250 (28.1)	22 (24.2)	124 (32.7)	104 (24.8)	

$^{*}p \leq .05$ $^{**}p \leq .01$ $^{***}p \leq .001$

Sexual Behavior and Risky Sexual Behaviors

The analysis regarding the number of sexual partners and being currently sexually active included all participants (822), while use of alcohol/drugs, condom use, and protection from pregnancy during the last sexual activity excluded abstainers (*N*=338 participants). Over one half of respondents (55.7%) had ever had sexual intercourse and less than half (42.6%) were currently sexually active (had sex during the past three months) (Table 7). More African American and fewer Hispanic females were currently sexually active compared to their Caucasian counterparts (χ^2=17.5 *df*=2, $p \leq .001$). The results showed significant associations between ethnicity and sexual behaviors (Table 7).

More African Americans reported ever having sex (χ^2=21.7 *df*=2, $p \leq .001$), having sex with 1-3 or four or more people in their lifetime (χ^2=38.8 *df*=4, $p \leq .001$) compared to the other groups. When abstainers were excluded, approximately 11.2% of the total population used alcohol/drugs before last sexual intercourse, 57.4% did not use a condom the last time they had sex, and 90.5% did not use any method (birth control pills, condoms, Depo-Provera, withdrawal, or some other method) to prevent pregnancy.

Condom use was low among all racial/ethnic groups. Almost two-thirds of Hispanics (65.1%) and Caucasians (62.9%) and half of African Americans (50.6%) did not use condoms the last time they had sexual intercourse (χ^2=6.9 *df*=4, $p \leq .05$; Table 7). Significantly higher proportions of Hispanic respondents did not use any method to prevent pregnancy (χ^2=30.0 *df*=2, $p \leq .001$) compared to African Americans and Caucasians.

Table 7 Risky Sexual Behaviors by Race/Ethnicity

	Total Population *N* (%)	Caucasian *N* (%)	African American *N* (%)	Hispanic *N* (%)	χ^2 (*df*)
Ever Had Sex	*N*=822	*N*=87	*N*=349	*N*=386	
Yes	458 (55.7)	45 (51.7)	227 (65.0)	186 (48.2)	21.7 (2)**
No	364 (44.3)	42 (48.3)	122 (35.0)	200 (51.8)	
Risky Sexual Behaviors					
Never Had Sex	364 (44.3)	42 (48.3)	122 (35.0)	200 (51.8)	
1-3 Sex Partners in Lifetime	338 (41.1)	34 (39.1)	148 (42.4)	156 (40.4)	38.8 (4)**
Four or more Sex Partners in Lifetime	119 (14.5)	11 (12.6)	78 (22.3)	30 (7.8)	
Currently Sexually Active	350 (42.6)	35 (40.2)	178 (51.0)	137 (35.5)	17.5 (2)**
	N=338	*N*=35	*N*=174	*N*=129	
Alcohol/drug use before sex	38 (11.2)	5 (14.3)	14 (8.0)	19 (14.7)	3.7 (2)
No condom use	194 (57.4)	22 (62.9)	88 (50.6)	84 (65.1)	6.9 (2)*
No protection from pregnancy	306 (90.5)	23 (65.7)	159 (91.4)	124 (96.1)	30.0 (2)**

*$p \leq .05$ **$p \leq .001$

Association of Risky Sexual Behaviors with Body Image, Depressed Mood, and Weight Control

Body Image

Bivariate associations were examined between unrealistic body image, depressed mood, and weight control behaviors. The analysis showed that none of the associations of engaging in risky sexual behaviors were statistically significant (Table 8).

Table 8 Associations between Risky Sexual Behaviors and Body Image

	Realistic Body Image	Unrealistic Body Image	$\chi^2(df)$
	N (%)	N (%)	
Multiple Sex Partners	*N* =502	*N* =263	
Never Had Sex	216 (43.0)	118 (45.2)	0.99 (2)
1-3 Sex Partners in Lifetime	213 (42.4)	102 (38.8)	
Four or more Sex Partners in Lifetime	73 (14.5)	42 (16.0)	
Currently Sexually Active	*N* =502	*N* =263	0.06 (1)
No	287 (57.2)	148 (56.3)	
Yes	215 (42.8)	115 (43.7)	
Alcohol/drugs before sex	*N* =286	*N* =144	0.16 (1)
No	254 (88.8)	126 (87.5)	
Yes	32 (11.2)	18 (12.5)	
Condom Use	*N* =279	*N* =143	0.06 (1)
Yes	131 (47.0)	68 (48.3)	
No	148 (53.0)	74 (51.7)	
Protection from Pregnancy	*N* =206	*N* =114	0.02 (1)
Yes	19 (9.2)	11 (9.6)	
No	187 (90.8)	103 (90.4)	

Depressed Mood

With regards to risky sexual behaviors and depressed mood, adolescents who reported a depressed mood had multiple lifetime sexual partners or were currently sexually active compared to those who did not have a depressed mood ($p \leq .001$; Table 9). Risky sexual behaviors of using alcohol/drugs, condom use, and using protection against pregnancy did not significantly vary based on the presence or absence of a depressed mood.

Table 9 Associations between Risky Sexual Behaviors and Depressed Mood

	Depressed Mood		
	Yes	No	χ^2 (*df*)
	N (%)	N (%)	
Multiple Sex Partners	*N* =319	*N* =502	20.5 (2)***
Never Had Sex	110 (34.5)	254 (50.6)	
1-3 Sex Partners in Lifetime	155 (48.6)	183 (36.5)	
Four or more Sex Partners in Lifetime	54 (16.9)	65 (12.9)	
Currently Sexually Active	*N* =319	*N* =502	12.1 (1)***
No	159 (49.8)	312 (62.2)	
Yes	160 (50.2)	190 (37.8)	
Alcohol/drugs before sex	*N* =208	*N* =249	1.7 (1)
No	179 (86.1)	224 (90.0)	
Yes	29 (13.9)	25 (10.0)	
Condom Use	*N* =204	*N* =242	2.6 (1)
Yes	88 (43.1)	123 (50.8)	
No	116 (56.9)	119 (49.2)	
Protection from Pregnancy	*N* =157	*N* =181	0.00 (1)
Yes	15 (9.6)	17 (9.4)	
No	142 (90.4)	164 (90.6)	

*** $p \leq .001$

Weight Control

With regards to risky sexual behaviors and weight control behaviors, more adolescents who engaged in weight control behaviors used alcohol/drugs before last sexual intercourse compared to adolescents who did not engage in weight control behaviors ($p \leq .001$; Table 10). Risky sexual behaviors of having multiple sexual partners, being currently sexually active, condom use, and using protection against pregnancy did not significantly vary based on engaging in weight control behaviors.

Table 10 Associations between Risky Sexual Behaviors and Weight Control

	Weight Control		
	Yes	No	χ^2 (*df*)
	N (%)	N (%)	
Multiple Sex Partners	*N* =578	*N* =233	1.4 (2)
Never Had Sex	261 (45.2)	97 (41.6)	
1-3 Sex Partners in Lifetime	237 (41.0)	97 (41.6)	
Four or more Sex Partners in Lifetime	80 (13.8)	39 (16.7)	
Currently Sexually Active	*N* =578	*N* =233	0.81 (1)
No	335 (58.0)	127 (54.5)	
Yes	243 (42.0)	106 (45.5)	
Alcohol/drugs before sex	*N* =318	*N* =135	9.8 (1)**
No	271 (85.2)	129 (95.6)	
Yes	47 (14.8)	6 (4.4)	
Condom Use	*N* =311	*N* =132	0.55 (1)
Yes	151 (48.6)	59 (44.7)	
No	160 (51.4)	73 (55.3)	
Protection from Pregnancy	*N* =235	*N* =102	0.08 (1)
Yes	23 (9.8)	9 (8.8)	
No	212 (90.2)	93 (91.2)	

** $p \leq .01$

Associations of Depressed Mood, Body Image, and Weight Control

The chi-square test of independence showed an association between depressed mood and weight control (χ^2=15.6 *df*=1, $p \leq .001$) and between depressed mood and body image (χ^2=3.6 *df*=1, $p \leq .05$; Table 11). The data also revealed that body image and weight control were not associated.

When the chi-square tests of independence were conducted for race/ethnicity separately, for Caucasians, only depressed mood and body image were significantly associated (χ^2=4.4 *df*=1, $p \leq .05$; Table 11). For African Americans, depressed mood and weight control (χ^2=7.1 *df*=1, $p \leq .01$) and depressed mood and body image (χ^2=4.2 *df*=1, $p \leq .05$) were significantly associated. Among Hispanics, depressed mood and weight control (χ^2=7.5 *df*=1, $p \leq .01$) were associated.

Table 11 Bivariate Associations between Covariates

	χ^2 (*df*)
Depressed Mood, Body Image, and Weight Control Behavior	
Depressed mood and weight control	15.6*** (1)
Depressed mood and body image	3.6* (1)
Body image and weight control	0.21 (1)
Depressed Mood, Body Image, and Weight Control Behavior by Race/Ethnicity	
Caucasian	
Depressed mood and weight control	0.79 (1)
Depressed mood and body image	4.4* (1)
Body image and weight control	0.56 (1)
African American	
Depressed mood and weight control	7.1** (1)
Depressed mood and body image	4.2* (1)
Body image and weight control	1.1 (1)
Hispanic	
Depressed mood and weight control	7.5** (1)
Depressed mood and body image	0.04 (1)
Body image and weight control	0.11 (1)

*$p \leq .05$ **$p \leq .01$ ***$p \leq .001$

Predictors of Risky Sexual Behaviors

To determine which variables (body image, depressed mood, and/or weight control) predicted engaging in risky sexual behaviors, binary logistic regression and multinomial models were run. For predicting the odds of having 1-3 or four or more sexual partners, multinomial logistic regression model was applied with all of the respondents (*N*=822) who responded (yes/no) to ever having sexual intercourse. Binary logistic models were used for being currently sexually active, alcohol/drug use before sex, condom nonuse, and no protection from pregnancy. For being currently sexually

active, abstainers were included, while for alcohol/drug use before sex, condom nonuse, and no protection from pregnancy, lifetime abstainers were not included.

Model Building Strategies

Each regression model was run first with all of the predictor variables of interest (body image, depressed mood, weight control, race/ethnicity, and grade level) and then the variable that was least statistically significant (p-value >.05) was excluded from the model. This procedure was repeated with all of the variables until the final model was achieved. For each regression model, Caucasian (for race/ethnicity) and 9th grade (for grade level) were used as reference groups. The p-value from the Wald test was used to determine significance. Each of the models shown in the following tables represents the final model with only the statistically significant variables.

Multinomial Logistic Regression Model

Multiple Sexual Partners

Adolescents with multiple sexual partners (1-3 and four or more lifetime sexual partners) were compared to those who had never had sexual intercourse. The final models for having 1-3 and four or more lifetime sexual partners showed that depressed mood, race/ethnicity, and grade level are jointly significant predictors (Table 12). Adolescents with a depressed mood were two times more likely to have 1-3 lifetime sexual partners (OR=2.2, $p\leq.001$). As grade level increased so did having 1-3 lifetime sexual partners. Adolescents in 12th grade were four times more likely to have 1-3 lifetime sexual partners compared to 9th graders (OR=3.9, $p\leq.001$).

Those who had a depressed mood were almost three times more likely to have four or more lifetime sexual partners (OR=2.6, $p \leq .001$). African Americans were three times more likely to have four or more lifetime sexual partners compared to Caucasians (OR=3.0, $p < .01$). Additionally, adolescents in the 12th (OR=8.4, $p \leq .001$) and 11th grade (OR=5.7, $p \leq .001$) were more likely than 9th graders to have four or more lifetime sexual partners.

Table 12 Regression Model Predicting Multiple Lifetime Sexual Partners

Variables	β	SE	*df*	*p*	OR	95% C.I.
1-3 People						
Depressed Mood	0.767	0.183	1	<0.001	2.2	1.5-3.1
African American	0.522	0.292	1	0.074	1.7	1.0-3.0
Hispanic	0.140	0.288	1	0.626	1.2	0.7-2.0
10th Grade	0.444	0.240	1	0.064	1.6	1.0-2.5
11th Grade	0.914	0.248	1	<0.001	2.5	1.5-4.0
12th Grade	1.356	0.241	1	<0.001	3.9	2.4-6.2
Constant	-1.259	0.326	1	<0.001		
4 or more People						
Depressed Mood	0.936	0.249	1	<0.001	2.6	1.6-4.2
African American	1.083	0.372	1	0.004	3.0	1.4-6.1
Hispanic	-0.308	0.402	1	0.443	0.7	0.3-1.6
10th Grade	1.207	0.408	1	0.003	3.3	1.5-7.4
11th Grade	1.747	0.401	1	<0.001	5.7	2.6-12.6
12th Grade	2.128	0.392	1	<0.001	8.4	3.9-18.1
Constant	-3.163	0.478	1	<0.001		

F-statistic=7.65, $p \leq .001$

Currently Sexually Active

The final model showed that depressed mood and grade level significantly predicted having sex within the past three months (including lifetime abstainers) (Table 13). Adolescents with a depressed mood were twice as likely to be currently sexually active than adolescents who did not have a depressed mood (OR=2.0, $p \leq .001$). Grade level increased parallel to being currently sexually active, with 12th graders four times more likely to be currently sexually active compared to 9th graders (OR=4.0, $p \leq .001$).

Table 13 Regression Model Predicting being Currently Sexually Active

Variables	β	SE	*df*	*p*	OR	95% C.I.
Depressed Mood	0.701	0.167	1	<0.001	2.0	1.5-2.8
10th Grade	0.532	0.233	1	0.023	1.7	1.1-2.7
11th Grade	0.940	0.231	1	<0.001	2.6	1.6-4.0
12th Grade	1.394	0.223	1	<0.001	4.0	2.6-6.2
Constant	-1.297	0.184	1	<0.001		

F-statistic=13.79, $p \leq .001$

Alcohol/Drugs before Sexual Intercourse

The final model for using alcohol/drugs before sexual intercourse showed that weight control was the only predictor that was statistically significant (Table 14). Adolescents who engaged in any type of weight control behavior were four times more likely to use alcohol/drugs in conjunction with sex (OR=3.9, $p \leq .01$).

Table 14 Regression Model Predicting using Alcohol/Drugs before Sexual Intercourse

Variables	β	SE	*df*	*p*	OR	95% C.I.
Weight Control	1.371	0.515	1	0.008	3.9	1.4-10.8
Constant	-3.182	0.483	1	<0.001		

F-statistic=7.08, $p \leq .01$

Condom Nonuse before Sexual Intercourse

The final model showed that none of the variables significantly predicted condom nonuse before sexual intercourse (Table 15).

Table 15 Regression Model Predicting Condom Nonuse before Sexual Intercourse

Variables	β	SE	*df*	*p*	OR	95% C.I.
Body Image	-0.025	0.217	1	0.908	1.0	0.6-1.5
Depressed Mood	0.288	0.219	1	0.189	1.3	0.9-2.0
Weight Control	-0.406	0.245	1	0.098	0.7	0.4-1.1
African American	-0.584	0.351	1	0.097	0.6	0.3-1.1
Hispanic	0.307	0.364	1	0.400	1.4	0.7-2.8
10th Grade	0.107	0.338	1	0.753	1.1	0.6-2.2
11th Grade	0.025	0.323	1	0.939	1.0	0.5-1.9
12th Grade	0.258	0.307	1	0.402	1.0	0.7-2.4
Constant	0.332	0.468	1	0.478		

F-statistic=2.14, p =0.0317

No Protection for the Prevention of Pregnancy

The final model for no protection for the prevention of pregnancy showed that race/ethnicity significantly predicted not using protection for the prevention of pregnancy (Table 16). Hispanics were almost 12 times (OR=11.6, $p \leq .001$) and African Americans were 5 times (OR=5.3, $p \leq .001$) more likely not to have used protection to prevent pregnancy compared to Caucasians.

Table 16 Regression Model Predicting No Protection for the Prevention of Pregnancy

Variables	β	SE	*df*	*p*	OR	95% C.I.
African American	1.667	0.477	1	<0.001	5.3	2.1-13.6
Hispanic	2.450	0.610	1	<0.001	11.6	3.5-38.5
Constant	0.775	0.381	1	0.043		

F-statistic=9.47, $p \leq .001$

This study ascertained weight control, body image, depressed mood, and risky sexual behaviors among a representative sample of adolescent females in the Dallas Independent School District (DISD). Adolescents may be influenced by various factors such as family and peers that promote or discourage certain behaviors. Understanding the health-compromising and risky behaviors of adolescent females may help decrease STDs, unwanted pregnancies, and eating disorders. The hypothesis that having a depressed mood and an unrealistic body image would be significant predictors of engaging in risky sexual behaviors was corroborated for having a depressed mood but was not supported for body image. The findings indicated that engaging in weight control, although hypothesized as not a significant predictor, was actually a significant predictor for using alcohol/drugs before last sexual intercourse.

Discussion and Implications

This section displays the study research questions and hypotheses and describes the related findings.

CHAPTER V

DISCUSSION, CONCLUSION, AND RECOMMENDATIONS

This study ascertained weight control, body image, depressed mood, and risky sexual behaviors among a representative sample of adolescent females in the Dallas Independent School District (DISD). Adolescents may be influenced by various factors such as family and peers that promote or discourage certain behaviors. Understanding the health-compromising and risky behaviors of adolescent females may help decrease STDs, unwanted pregnancies, and eating disorders. The hypothesis that having a depressed mood and an unrealistic body image would be significant predictors of engaging in risky sexual behaviors was corroborated for having a depressed mood but was not supported for body image. The findings indicated that engaging in weight control, although hypothesized as not a significant predictor, was actually a significant predictor for using alcohol/drugs before last sexual intercourse.

Discussion and Implications

This section displays the study research questions and hypotheses and describes the related findings.

Research Questions

1. Is there an ethnic difference in the prevalence rates of a) unrealistic body image, b) depressed mood, c) weight control behaviors, and d) risky sexual behaviors among Caucasian, African American, and Hispanic female adolescents?

The results of this study found that there was not a significant difference in having an unrealistic body image or a depressed mood, but there was a difference of engaging in any type weight control behavior with African Americans engaging in weight control in lower proportion compared to Caucasians and Hispanics. Taken individually, there was also an ethnic difference between certain weight control behaviors, with African Americans less likely to exercise; eat less, fewer calories, foods low in fat; use diet pills, powders, liquids; or vomited or took laxatives to lose weight compared to Caucasian and Hispanic adolescents. Additionally, differences were found between respondents in the different racial/ethnic groups regarding risky sexual behaviors. More African Americans had ever had sex or had multiple lifetime sexual partners compared to Hispanics or Caucasians. Also, more Hispanics used alcohol/drugs before last sex, did not use a condom, or protection for the prevention of pregnancy (when abstainers were excluded from the analysis).

2. Is there a bivariate association between body image, depressed mood, and weight control behaviors in this adolescent female population?

There was a bivariate association between depressed mood and weight control behavior and between having a depressed mood and body image. Among racial/ethnic groups, there was a bivariate association between depressed mood and body image for

Caucasian adolescents. For African Americans, there was a bivariate association between depressed mood and weight control and depressed mood and body image. Among Hispanics, there was a bivariate association between depressed mood and weight control.

3. Do body image, depressed mood, and weight control behaviors predict engaging in risky sexual behaviors in this group of adolescent females?

Depressed mood predicted having multiple sexual partners and being currently sexually active. Weight control predicted using alcohol/drugs before last sexual intercourse. Body image did not predict engaging in any risky sexual behavior.

Research Hypotheses

1. a. African American and Hispanic adolescent females will be more likely to have a depressed mood, an unrealistic body image, or weight control behaviors compared to Caucasian adolescent females.

As hypothesized, more African American and Hispanic adolescents had a depressed mood.

The hypothesis for body image was not supported for African Americans but corroborated for Hispanics. More African Americans had a realistic body image and more Hispanics had an unrealistic body image compared to Caucasians.

The hypothesis for engaging more in any type of weight control behavior was not supported for African Americans or Hispanics.

b. African American and Hispanic adolescent females will engage in more risky sexual behaviors than Caucasian adolescent females.

The hypothesis for engaging in risky sexual behaviors was corroborated for African Americans with respect to having multiple lifetime sexual partners, being currently sexually active, and not using protection to prevent pregnancy, but was not supported for alcohol/drug use and not using condoms at last sexual intercourse (excluding abstainers). For Hispanics, using alcohol/drugs, not using condoms, and not using protection for the prevention of pregnancy at last sexual intercourse was corroborated, however, the hypothesis for having multiple lifetime sexual partners (excluding abstainers) was not supported.

2. There is a bivariate association between depressed mood, body image, and weight control behaviors among adolescent females in this sample.

For the respondents as a whole, the hypothesis for having an association between depressed mood and weight control as well as between depressed mood and body image was corroborated. The hypothesis for body image and weight control was not supported.

3. a. Adolescents with unrealistic body image, depressed mood, and weight control behaviors will be more likely to engage in risky sexual behaviors regardless of race or ethnicity.

For all respondents, the hypothesis for adolescents who had an unrealistic body image to engage in any risky sexual behavior was not supported. The hypothesis of having a depressed mood was corroborated for having multiple sexual partners and being currently

sexually active, while weight control was corroborated for using alcohol/drugs at last sexual intercourse.

b. Body image and depressed mood together will be significant predictors of engaging in any one of the five risky sexual behaviors among adolescent females.

The hypothesis that having a depressed mood would be a significant predictor of engaging in risky sexual behaviors was supported. Depressed mood significantly predicted multiple lifetime sexual partners and being currently sexually active. Body image was not a statistically significant predictor for engaging in any risky sexual behaviors.

c. Weight control behavior will not be a significant predictor of engaging in risky sexual behaviors.

The hypothesis that weight control would not be a significant predictor of engaging in risky sexual behaviors was not supported. For alcohol/drugs before sexual intercourse, weight control was a statistically significant predictor.

The research findings illustrated the prevalence and association of weight control, body image, and depressed mood among adolescent females in this study and if they were predictors of engaging in risky sexual behaviors.

Body Weight/Weight Concerns/Weight Control Behavior

More females attending DISD that participated in this study (15.1%), than in Texas (8.6%) or nationally (9.4%) were overweight (based on $\geq 95^{th}$ percentile by age and sex; Grunbaum et al., 2004). Among racial/ethnic groups, more African American

females were overweight compared to Hispanic or Caucasian females in Dallas and nationally (Grunbaum et al., 2004).

Similar results were seen regarding perceived body weight, with one-third of adolescent females perceiving themselves to be overweight at the local (Dallas), state (Texas), and national levels of the YRBS. More Hispanics (43.7%) in this study (Dallas) described themselves as overweight compared to the national data where more Caucasians (38.5%) and Hispanics (36.1%) perceived themselves as overweight (Grunbaum et al., 2004). Regardless of race/ethnicity, the majority of all females perceived themselves to have a normal weight, which was different than national data where more Caucasians were overweight than African Americans, and more African Americans perceived themselves as overweight (Brener et al., 2004a).

Comparable to a national sample of adolescents (Strauss, 1999), more Caucasian and Hispanic females attending school in DISD wanted to lose weight and perceived themselves as overweight when they were actually not overweight. In contrast, more African Americans wanted to gain weight, which was also consistent with the findings by Strauss (1999). Unlike the studies by Desmond and colleagues (1989) and Neff and colleagues (1997) which looked at adolescents, African Americans in this study (Dallas) were not significantly less likely to consider themselves overweight compared to Caucasians.

Adolescent females that participated in this study (Dallas; 58.0%) were less likely to want to lose weight compared to adolescents nationally (59.3%) and in Texas (62.2%; Grunbaum et al., 2004), however, when race/ethnicity was taken into consideration,

in Dallas, all were more likely to want to lose weight (63.4% of Caucasians, 50.4% of African Americans, and 63.8% of Hispanics) compared to the national data (62.6% of Caucasians, 46.7% of African Americans, and 61.7% of Hispanics).

Mack and colleagues (2004) found that the majority of women 18 and over regardless of race (72.0% of Caucasian, 69.4% of Hispanic, and 68.3% of African American women) wanted to reduce their weight and stated that they were taking steps towards that goal. This has also been seen in children as young as the third-grade, where one-fourth of girls wanted to lose weight (Robinson et al., 2001). These studies seem to indicate that as age increases so does the desire to lose weight. In this study, although more Hispanic females perceived themselves as overweight, they were less likely than African Americans to actually be overweight. In a study by Sánchez-Johnsen and colleagues (2004), which examined Hispanic and African American women, Hispanic women were also more likely to perceive themselves as overweight when they actually weighed less than African Americans.

A Dole Nutrition Institute poll that examined weight among 400 college students (male and female) found that 18% perceived themselves as being overweight compared to a Gallup poll where 40% of Americans (male and female) believed they were overweight (Grossman, 2004). In the present study, 37.2% of females perceived themselves as overweight, which is comparable to the Gallup poll. The Doll poll also found that more college women (20% vs. 16% of men) and minorities (25% of Hispanics and 22% of African Americans vs. 17% of Caucasians) perceived themselves as being overweight (Grossman, 2004). According to the Centers for Disease Control and

Prevention, 65% of the adult U.S. population is overweight or obese (Grossman, 2004). This reveals that regardless of age (high school, college, or the general population) Americans underestimate their overweight status.

Adolescents that participated in this study (Dallas) were less likely to exercise; eat less, fewer calories, foods low in fat; fast (24 hours); use diet pills; or vomit/laxatives than adolescent females at the state or national level that responded to the YRBS. However, compared to Croll and colleagues (2002) study on adolescents, in which over half reported disordered eating, more adolescent females in Dallas exercised or ate less, consumed fewer calories, or ate foods low in fat to lose weight or keep from gaining weight. Additionally, in the present study, Caucasians were more likely to take diet pills and vomit similar to the findings by Neff and colleagues (1997). It would be important for future studies to examine the reasons why there was a difference between the racial/ethnic groups and engaging in weight control behaviors. The findings from this study indicated that regardless of race/ethnicity, 65.2% of all respondents had a realistic body image. Fewer Hispanics (61.6%) had a realistic body image, which is comparable to a similar study by Kelly and colleagues (2005). This may point toward the trend of other racial/ethnic groups to imitate Caucasians and how the dominant culture or mainstream society may play a role in their behaviors and attitudes.

Similar to the present study, a study of college age women found that although African American women had a larger body mass index (BMI), they were less likely to have body dissatisfaction or distorted eating attitudes and behaviors (Akan & Grillo,

1995). Since there is not a large time gap between high school and college, it is not surprising that the results were similar.

Depressed Mood

The findings of this study were similar to a review of literature of adolescents by Franko and Striegel-Moore (2002), and the 2003 National and Texas YRBS, which showed that Hispanics were slightly more likely to have a depressed mood. Additionally, some studies have shown that a depressed mood is higher among minorities (Garrison et al., 1989; Sen, 2004; Siegel et al., 1999). In this study, slightly more Hispanics and African Americans had a depressed mood.

Risky Sexual Behaviors

Adolescents are engaging in risky sexual behaviors such as having multiple sex partners, not using a condom, and not using protection to prevent pregnancy, placing them at higher risk for contracting a STD or becoming pregnant. In the study reported here, more African Americans had ever had sex or had four or more lifetime sexual partners, which are analogous to the 2003 YRBS (National and Texas; Grunbaum et al., 2004) and Blum and colleagues (2000). Comparing the results from the 2003 Dallas YRBS with the 2003 National and Texas YRBS, overall, adolescent females that participated in this study (14.5%) were similar to the national (11.2%) and Texas (11.6%) YRBS regarding risky sexual behaviors.

Hispanics were more likely to have used alcohol/drugs before last sexual intercourse, which was in contrast to the 2003 National YRBS (Grunbaum et al., 2004) where more Caucasians used alcohol/drugs before last sexual intercourse than other

ethnic groups. African Americans were the least likely to have used alcohol/drugs before the last time they had sex and more likely to have used a condom (excluding abstainers), similar to the 2003 National YRBS (Grunbaum et al., 2004) and other studies (Santelli et al., 1997; Santelli et al., 2001). Similar to Howard and Wang (2004), where 62.9% of adolescent females had sex with one partner within the past three months, in the present study, 64.6% of females had sex with one partner within the past three months (excluding abstainers). Additionally, parallel to Howard and Wang (2004), more Caucasians than African Americans and Hispanics had only one sexual partner within the past three months. There may be a gap between what actually happens and what is reported due to the sensitivity of this topic. In a survey conducted by the Henry J. Kaiser Family Foundation (2002), although 11% of adolescents (15-24) admitted to using alcohol/drugs before the last time they had sexual intercourse, however, 89% stated that their peers were sometimes using alcohol/drugs before sexual intercourse and half stated that it happened a great deal of the time.

According to Healthy People 2010, the Leading Health Indicators include physical activity, overweight and obesity, tobacco use, substance abuse, responsible sexual behavior, mental health, injury and violence, environmental quality, immunization, and access to health care (CDC, 2005a). Each indicator has specific objectives that help to understand, improve, and create change in the community. There are two indicators that address the Leading Health Indicator of responsible sexual behaviors "Increase the proportion of adolescents who abstain from sexual intercourse or

use condoms if currently sexually active, and Increase the proportion of sexually active persons who use condoms" (CDC, 2005a, 2005b).

Healthy People 2010's objective is to reach the target goal of 95% of adolescents who have never had sexual intercourse, were not currently sexually active, or used a condom if sexually active (CDC, 2005a, 2005b). According to the 1999 National YRBS, 81% of females had never had sexual intercourse, were not currently sexually active, or used a condom if they were sexually active, and among racial/ethnic groups, Caucasians were slightly more likely to reach the target goal of 95% (Table 16; CDC, 2005b). In the 2003 Dallas YRBS reported here, 71% of females had never had sexual intercourse, were not currently sexually active, or used a condom if they were sexually active. Among racial/ethnic groups, Hispanics were slightly more likely to have reached the target goal of 95% (Table 17; CDC, 2005b). Although the data used in this study, from the 2003 survey, was administered seven years from the 2010 target, it appears that adolescent females in Dallas have an enormous challenge ahead to reach the target goal of 95%. It will be important for the Dallas Independent School District and policy makers, as well as parents in DISD to understand and address these issues to protect adolescents, both male and female, in responsible sexual behavior.

Table 17 Healthy People 2010 Sexual Behavior Target by Race/Ethnicity

Race/Ethnicity	2010 Target	1999 National	2003 Dallas
Total	95%	81%	71%
Caucasian	95%	86%	72%
African American	95%	83%	70%
Hispanic	95%	84%	73%

Increasing the Dallas Independent School Districts current total of 71% (students that had never had sexual intercourse, were not currently sexually active, or used a condom if they were sexually active) would help in decreasing sexually transmitted diseases (including HIV/AIDS) as well as unintended pregnancies and move them closer to the 2010 target goal of 95%.

There are physical and psychological effects that can result from STDs and unintended pregnancies, not only among adolescents but also adults, especially for females who become pregnant and often have to face more complications that result from STDs than males (CDC, 2005b). Adolescent females have some of the highest rates of unintended pregnancies, with one million unintended pregnancies each year (CDC, 2005a; Panchaud, Singh, Feivelson, & Darroch, 2000; Whaley, 1999). In this study, 11.2% of the total population had been pregnant, and among racial/ethnic groups, African Americans (16.5%) were twice as likely as Hispanic (8.0%) and more than three times as likely as Caucasian (4.3%) to have been pregnant. Additionally, of the estimated 15 million new cases of STDs, 4 million occur among adolescents, with African American and Hispanics more likely to have a STD (CDC, 2005a), and STDs in the United States are higher than other industrialized countries (Panchaud et al., 2000). Of the new HIV infections in the United States each year, half occur among individuals younger than 25 years old (CDC, 2005a). This indicates that some of the adolescents in this study are placing themselves at risk of contracting a STD and/or HIV/AIDS.

A disturbing fact is that adolescents have less trepidation and understanding regarding disease prevention than the prevention of pregnancy (Panchaud et al., 2000;

Singh, Fevelson, & Darroch, 2000; Whaley, 1999). This is alarming given the reality of the extreme consequences that can result from having a STD or HIV/AIDS. For many adolescents they do not see the risk of acquiring STDs when compared to others around them, and they may feel that STDs are hazardous but not necessarily for themselves (Hall et al., 2004). Moreover, adolescents may look at the short term gratification from engaging in risky sexual behaviors and not the possible long term consequences of becoming pregnant or acquiring a STD, which may ultimately result in death (as a result of HIV/AIDS; Hall et al., 2004).

Adolescents learn about sexual education from various sources including parents, peers, teachers, the media, as well as the Internet (Sexually Information and Education Council [SIECUS], 2001). Sexual education in schools is based on four distinct programs, comprehensive sexuality education, abstinence-based, abstinence-only, and abstinence-only-until-marriage (SIECUS, 2001). Currently, sex education and HIV/AIDS education is not required by the federal government and each state establishes its own mandate (SIECUS, 2001). Twenty-one states and the District of Columbia have a mandate that schools must teach sex education, and 37 states and the District of Columbia have a provision for STD/HIV education (Guttmacher, 2006). Texas does not mandate that sexual education or STD/HIV education be taught in schools, but if sexual education is taught, abstinence must be stressed and contraception does not have to be covered or stressed (Guttmacher, 2006; SIECUS, 2001).

In 2003, nationally 87.9% of adolescents were taught about HIV/AIDS at school, which was the lowest since 1996 (Grunbaum et al., 2004). The prevalence ranged from

77.9% (Texas) to 93.6% (Georgia; Grunbaum et al., 2004). In this study, 84.0% of all adolescents in DISD had ever been taught about HIV/AIDS in school and similar to the national data among racial/ethnic groups, slightly more Caucasians than African Americans and Hispanics had ever been taught about HIV/AIDS in school. In a nationally representative sample of 1,800 adolescents and young adults (aged 15-24), more than 75% wanted more information about sexual health (Hoff, Green, & Davis, 2003). The females in DISD would benefit from receiving more information about sexual health practices.

Conclusions

In the sample of adolescents in this study, having a depressed mood and engaging in weight control were significant predictors of engaging in risky sexual behaviors, while body image was not a significant predictor of engaging in risky sexual behaviors. It is important to understand how this population corresponds to other investigations that have been conducted. A previous study by Wingood and colleagues (2002) showed an association between body image and risky sexual behaviors in adolescent females. Those findings were not consistent with the present findings, where body image was not a predictor for engaging in risky sexual behaviors. However, the findings from this study indicated that depressed mood was related to having multiple lifetime sexual partners and being currently sexually active, which was consistent with previous findings by Brooks and colleagues (2002) and Keller and colleagues (1991) that showed that among adolescents of diverse ethnicities, there was an association between depressed mood and engaging in risky sexual behaviors. In contrast, the results of this study differed from a

study by Bachanas and colleagues (2002) which showed that there was not an association between depressed mood and risky sexual behaviors among African American adolescent females. Studies by Neumark-Sztainer and colleagues (1996; 1998) and French and colleagues (1995) showed a connection between weight loss behavior, health-compromising behaviors (alcohol/drug use) and risky sexual behaviors (condom nonuse and multiple sex partners) among adolescents of diverse ethnicities. These studies were similar to the present study where weight control significantly predicted using alcohol/drugs before last sexual intercourse.

From a peer perspective, adolescents who have friends who are sexually active also engage in sex and are more likely to have multiple sex partners and adolescents who have friends who do not engage in sexual intercourse are less likely to engage in sexual intercourse (Manlove et al., 2001). With respect to adolescent's relationship with their partner, if the adolescent has a discussion with her parents about sex and the risks (unintended pregnancy and STDs) associated, she will be more open to discussing condom use and sex with her partner (Whitaker, Miller, May, & Levin, 1999).

Recommendations

Understanding adolescent female perceptions and practices may help predict future behavior when they become women. Contrary to what was hypothesized, that body image would be one of the most significant predictors of engaging in risky sexual behaviors, in the current study, body image did not predict adolescent's engagement in risky sexual behaviors. Since the findings indicated that depressed mood and weight control did not predict condom nonuse, other factors must play a role, and additional

studies are essential. Since the literature has shown conflicting findings regarding body image, depressed mood, and weight concerns, additional studies are essential, because it is important to understand the reasons behind adolescents engaging in risky sexual behaviors that place them at risk of acquiring STDs and unwanted pregnancies. In this study, over half (57.4%, excluding abstainers) of adolescents did not use condoms at last sexual intercourse. In addition, because depressed mood predicted having multiple lifetime sexual partners and being currently sexually active, assessing clinical depression among this population would be beneficial. If clinical depression predicted engaging in risky sexual behaviors, treatment may help decrease these risky behaviors.

Future studies need to examine other factors or motivations that result in risky sexual behaviors. Some of these factors may include socioeconomic status as well as parental/normative and peer influences. Researchers can work with DISD to conduct qualitative studies with high school students, both female and male, to further explore the reasons for engaging in risky sexual behaviors. Conducting qualitative studies would help enhance quantitative research and better understand risky sexual behaviors. Additionally, it would be critical to include racial identity and measure of acculturation, since the degree to which an individual identifies with their cultural group can impact her actions. This has been seen with body image, the more women interact with the dominant culture, the more they will have a negative body image (Ethnicity and Body Image, 2004; Wellesley College, n.d.). It would also be important to capture adolescents who attend private or alternative school, those that are home schooled, or those who have dropped out of school. Including these individuals would help shed light on an additional segment

of the adolescent population that may greatly alter the reported findings and would help gain a better understand of the needs of all adolescents. There is also the need to investigate how the media, health providers and educators, and the government can help in decreasing these behaviors. Health providers should discuss responsible sexual behaviors with adolescents, and they should maintain an open and honest dialogue where they feel comfortable discussing their sexual health.

Peers and the family can also be helpful by not encouraging health-compromising behaviors since they can greatly influence adolescent's behaviors (CDC, 2005b). Research has shown that adolescents absorb everything they view and listen to, whether positive or negative, thus it is crucial for the media (T.V., print, radio, or the Internet) to encourage responsible sexual behaviors and not to glamorize risky sexual behaviors (alcohol/drugs before sex and having multiple sexual partners). Stakeholders must continue to examine the reasons why adolescents engage in risky sexual behaviors and what programs at the local, state, and national levels could be created to help decrease the prevalence of unintended pregnancies and STDs.

At the local school level, school-based programs in the Dallas Independent School District should also be created to address awareness of STDs and pregnancy prevention. Given that Texas does not mandate that contraception to be stressed or even covered, it is critical that Texas consider mandating sex and STD/HIV education. In addition to abstinence, contraception should be stressed, especially since more than half of the females and almost two-thirds of African Americans had ever had sexual intercourse. Although Hispanics in this study were the least likely to have ever had sex, they engaged

in risky sexual behaviors more often than African Americans or Caucasians. Condom use has been consistent among adults, but has increased over the years for adolescents, and research has shown that the school-based programs that include abstinence and condom use are the most successful (CDC, 2005a). To reduce unintended pregnancies and STDs, it is important that the programs that are created include increasing the age of first sexual intercourse, reduce multiple sex partners and the number that are currently sexually active, and making sure that they always use protection to prevent pregnancy and STDs (Manlove et al., 2001). Additionally, culturally sensitive programs in the Hispanic community need to be addressed, since the present study demonstrated their increased danger of engaging in risky sexual behaviors. The Dallas Independent School District should also establish programs to promote healthy eating and exercise for all students. These programs may prevent unhealthy weight control behaviors among all students, especially females.

In summary, the overall recommendations for school-based sexual education programs that target adolescent females in Dallas, TX include:

1. Raising awareness and understanding that some practices (not using protection to prevent a pregnancy or STD, having multiple sexually partners, and using alcohol/drugs before sexual intercourse) place them at risk for unintended pregnancies and STDs,
2. Promoting abstinence or consistent use of condoms, if the adolescent is sexually active,

3. Addressing weight control behaviors and body weight (normal and overweight) and raise awareness of the dangers of some weight control practices, and.

4. Recognition of depressed mood and clinical depression and its implications regarding risky sexual behaviors.

Taking these recommendations into consideration will hopefully help decrease risky sexual behaviors and in turn the number of pregnancies and STDs that occur each year in DISD and the United States.

To date, this is one of the first studies that examined predictors of risky sexual behaviors among adolescent females in Dallas, TX. This research has shown that there was not an ethnic difference in the prevalence of having a depressed mood or unrealistic body image, but there was an ethnic difference in the prevalence of weight control behaviors, and some of these behaviors significantly predicted engaging in risky sexual behaviors.

REFERENCES

Akan, G.E., & Grillo, C.M. (1995). Sociocultural influences on eating attitudes and behaviors, body image, and psychological functioning: A comparison of African American, Asian American, and Caucasian college women. *International Journal of Eating Disorders, 18*(2), 181–187.

Anspaugh, J.R. (2001). History of Body Image in Western Culture. Retrieved April 26, 2005, from http://www.fatlikeus.com/weighsdetail.asp?ID=44

Bachanas, P.J., Morris, M.K., Lewis-Gess, J.K., Sarett-Cuasay, E.J., Sirl, K., Ries, J.K., et al. (2002). Predictors of risky sexual behavior in African American Adolescent girls: Implications for prevention intervention. *Journal of Pediatric Psychology, 27*(6), 519-530.

Beauty Marks: Coping with Body Image. (2004). Ontario Women's Directorate. Retrieved April26, 2005, from http://www.gov.on.ca/citizenship/owd/english/owd/english/youth/bodyimage_history.htm#

Biddlecom, A.E. (2004). Trends in sexual behaviors and infections among young people in the United States. *Sexually Transmitted Infections, 80* (S2), ii74-ii79.

Body Image. (2004). The National Women's Health Information Center. US Department of Health and Human Services, Office of Women's Health. Retrieved April 27, 2005, from http://www.4woman.gov/BodyImage/bodyimage.cfm

Body Image and Your Health. (2004). The National Women's Health Information Center. US Department of Health and Human Services, Office of Women's Health. Retrieved April 27, 2005, from http://www.4woman.gov/bodyimage/

Brener, N.D., Eaton, D.K., Lowry, R., & McManus, T. (2004a). The association between weight perception and BMI among High School Students. *Obesity Research, 12*(11), 1866-1874.

Brener, N.D., Kann, L., Kinchen, S., Grunbaum, J.A., Whalen, L., Eaton, D., et al. (2004b). Methodology of the Youth Risk Behavior Surveillance System. M*orbidity & Mortality Weekly Report*, 53(RR-12): 1–13.

Brener, N., Lowry, R., Kann, L., Kolbe, L., Lehnherr, J., Janssen, R., et al. (2002). Trends in Sexual Risk Behaviors Among High School Students-United States, 1991-2001. *Morbidity and Mortality Weekly Report, 51*(38), 856-859.

Brener, N.D., McManus, T., Galuska, D.A., Lowry, R., & Wechsler, H. (2003). Reliability and validity of self-reported height and weight among high school students. *Journal of Adolescent Health, 32*(4), 281-287.

Brooks, T.L., Harris, S.K., Thrall, J.S., & Woods, E.R. (2002). Association of adolescent risk behaviors with mental health symptoms in high school students. *Journal of Adolescent Health, 31*(3), 240-246.

Blum, R.W., Beuhring, T., Shew, M.L., Bearinger, L.H., Sieving, R.E., & Resnick, M.D. (2000). The effects of race/ethnicity, income, and family structure on adolescent risk behaviors. *American Journal of Public Health, 90*(12), 1879-1884.

Center for Adolescent and Family Studies (CAFS). (2003). *Mental health risk factors for adolescents.* University of Indiana. Retrieved January 22, 2006, from http://education.indiana.edu/cas/adol/mental.html

Centers for Disease Control and Prevention (CDC). (1999). Trends in HIV-Related Sexual Risk Behaviors Among High School Students-Selected US cities, 1991-1997. *Morbidity and Mortality Weekly Report, 48*(21), 440-443.

Centers for Disease Control and Prevention (CDC). Healthy People 2010. (2005a). *Leading Health Indicators*. Retrieved January 16, 2006, from http://www.healthypeople.gov/document/html/uih/uih_4.htm#sex

Centers for Disease Control and Prevention (CDC). Healthy People 2010. (2005b). *Personal Behaviors*. Retrieved January 16, 2006, from http://healthypeople.gov/document/HTML/Volume2/25STDs.htm#_Toc489706328

Cotton, S., Larkin, E., Hoopes, A., Cromer, B.A., & Rosenthal S.L. (2005). The impact of adolescent spirituality on depressive symptoms and health risk behaviors. *Journal of Adolescent Health, 36*(6): JAH Online Exclusives: 529. e7-14.

Croll, J., Neumark-Sztainer, D., Story, M., & Ireland, M. (2002). Prevalence and risk and protective factors related to disordered eating among adolescents: relationship to ethnicity. *Journal of Adolescent Health, 31*(2), 166-175.

Desmond, S.M., Price, J.H., Hallinan, C., & Smith, D. (1989). Black and White adolescents' perceptions of their weight. *Journal of School Health, 59*(8), 353–358.

DiClemente, R.J., Wingood, G.M, Crosby, R.A., Sionean, C., Brown, L.K., Rothbaum, B., et al. (2001). A prospective study of psychological distress and sexual risk behavior among black adolescent females. *Pediatrics, 108*(5), e85-90. Retrieved January 30, 2005, from http://pediatrics.aappublications.org/cgi/reprint/108/5/e85?eaf

Ethnicity and Body Image. (2004). Retrieved April 26, 2005, from http://www.thesite.org/healthandwellbeing/mentalhealth/bodyimageandselfesteem/ethnicityandbodyimage

Fox, K. (1997). A summary of research findings on body image motives: Why we look in the mirror. Retrieved April 27, 2005, from http://www.sirc.org/publik/mirror.html

Franko, D.L, & Striegel-Moore, R.H. (2002). The role of body dissatisfaction as a risk factor for depression in adolescent girls are the differences black and white? *Journal of Psychosomatic Research, 53*(5), 975-983.

French, S.A., Story, M., Downes, B., Resnick, M.D., & Blum, R.W. (1995). Frequent dieting among adolescents: Psychosocial and health behavior correlates. *American Journal of Public Health*, *85*(5), 695-701.

French, S.A., Story, M., Neumark-Sztainer, D., Downes B., Resnick, M., & Blum, R. (1997). Ethnic differences in psychosocial and health behavior correlates of dieting, purging, and binge eating in a population-based sample of adolescent females. *International Journal of Eating Disorders*, *22*(3), 315-322.

Garrison, C.Z., Schluchter, M.D., Schoenbach, V.J., & Kaplan, B.K. (1989). Epidemiology of depressive symptoms in young adolescents. *Journal of the American Academy of Child Adolescent Psychiatry, 28* (3), 343-351.

Grossman, J. (2004). Special campus Dole poll: Students would trade shorter life for ideal weight. Dole Nutrition Institute. Retrieved May 29, 2005, from http://www.smartbrief.com/alchemy/servlet/encodeServlet?issueid=B57FB182-24F1-4376-9515-ED953FEB08F3&lmid=null

Grunbaum, J.A., Kann, L., Kinchen, S., Ross, J., Hawkins, J., Lowry, R., et al. (2004). Youth Risk Behavior Surveillance-United States, 2003. *Morbidity & Mortality Weekly Report*, 53(No.SS-2):1-96.

Guttmacher Institute. (2006). State Policies in Brief. Sex and STD/HID Education (2006). Retrieved February 21, 2006, from http://www.guttmacher.org/statecenter/spibs/spib_SE.pdf

Hall, P.A., Holmqvist, M., & Sherry, S.B. (2004). Risky adolescent sexual behavior: A psychological perspective for primary care clinicians. *Topics in Advanced Practice Nursing eJournal*, *4*(1). Retrieved October 6, 2005, from http://www.medscape.com/viewarticle/467059

Hallfors, D.D., Waller, M.W., Bauer, D., Ford, C.A., & Halpern, C.T. (2005). Which comes first in adolescence-sex and drugs or depression? *American Journal of Preventive Medicine, 29*(3), 163-170.

Hallfors, D.D., Waller, M.W., Ford, C.A., Halpern, C.T., Brodish, P.H., & Iritani, B. (2004). Adolescent depression and suicide risk: association with sex and drug behavior. *American Journal of Preventive Medicine, 27*(3), 224-231.

History of American Women and Body Image. (2004). University Health Services. University of Wisconsin, Madison. Retrieved April 26, 2005, from http://www.uhs.wisc.edu/display_story.jsp?id=294&cat_id=138

Hoff, T., Greene, L., & Davis, J. (2003). National survey of adolescents and young adults: Sexual health knowledge, attitudes and experiences. Menlo Park, Calif.: Henry J. Kaiser Family Foundation.

Howard, D.E., & Wang, M.Q. (2004). Multiple sexual-partner behavior among sexually active US adolescent girls. *American Journal of Health Behavior, 28*(1), 3-12.

Hutton, H.E., Lyketsos, C.G., Zenilman, J.M., Thompson, R.E., & Erbelding E.J. (2004). Depression and HIV risk behaviors among patients in a sexually transmitted disease clinic. *American Journal of Psychiatry, 161*(5), 912-914.

Irwin, C.E., Igra, V., Eyre, S., Millstein, S. (n.d.). Risk-taking behavior in adolescents: The paradigm. Retrieved June 23, 2004, from http://www.standfor.edu/~kcobb/femstudies/LectureOne.htm

Kaltiala-Heino, R., Kosunen, E., & Rimpela, M. (2003). Pubertal timing, sexual behavior and self-reported depression in middle adolescence. *Journal of Adolescence, 26*(5), 531-545.

Keller, S.E., Barlett, J.A., Schleifer, S.J., Johnson, R.L., Pinner, E., & Delaney, B. (1991). HIV-relevant sexual behavior among a healthy inner-city heterosexual adolescent population in an endemic area of HIV. *Journal of Adolescent Health, 12*(1), 44-48.

Kelly, A.M., Wall, M., Eisenberg, M.E., Story, M., & Neumark-Sztainer, D. (2005). Adolescent girls with high body satisfaction: Who are they and what can they teach us? *Journal of Adolescent Health, 37*(5), 391-396.

Kuczmarski, R.J., Ogden, C.L., Grummer-Strawn, L.M., Flegal, K.M., Guo, S.S., Wei, R., et al. (2000). CDC growth charts: United States. Advance data from vital and health statistics; no. 314. Hyattsville, Maryland: National Center for Health Statistics.

Lowry, R., Holtzman, D., Truman, B., Kann, L., Collins, J. L., & Kolbe, L.J. (1994). Substance use and HIV-related sexual behaviors among US high school students: Are they related? *American Journal of Public Health, 84*(7), 1116-1120.

Mack, K.A., Anderson, L., Galuska, D., Zablotsky, D., Holtzman, D., & Ahluwalia, I. (2004). Health and sociodemographic factors associated with body weight and weight objectives for women: 2000 behavioral risk factor surveillance system. *Journal of Women's Health, 13*(9), 1019-1032.

Manlove, J., Terry-Humen, E.T., Papillo, A.R., Franzetta, K., Williams, S., & Ryan, S. (2001). Background for community-level work on positive reproductive health in adolescence: Reviewing the literature on contributing factors. Child Trends. Retrieved February 2, 2006, from http://12.109.133.224/Files/knight_table/KRepro.pdf

Miller, M.N., & Pumariega, A.J. (2001). Culture and eating disorders: A historical and cross-cultural review. *Psychiatry, 64*(2), 93-110.

National Center for Chronic Disease Prevention and Health Promotion (NCCDPHP). (2005). *Healthy You! Health Topics*. Retrieved May 17, 2005, from http://www.cdc.gov/HealthyYouth/healthtopics/index.htm#programs

National Mental Health Association (NMHA). (2006). *Children's mental health statistics*. Retrieved January 22, 2006, from http://www.nmha.org/children/prevent/stats.cfm

Neff, J., Sargent, R.G., McKeown, R.E., Jackson, K.L., & Valois, R.F. (1997). Black-white differences in body size perceptions and weight management practices among adolescent females. *Journal of Adolescent Health, 20*(6), 459-465.

Neufeld, S. Eating Disorders Linked with Risky Behavior. Healthology Press. 2002. Retrieved June 16, 2004, from http://abcnews.go.com/sections/living/Healthology/eating_disorders.html

Neumark-Sztainer, D., Croll, J., Story, M., Hannan, P.J., French, S.A., & Perry, C. (2002). Ethnic/racial differences in weight-related concerns and behaviors among adolescent girls and boys: findings from Project EAT. *Journal of Psychosomatic Research, 53*(5), 963-974.

Neumark-Sztainer, D., Story, M., Dixon, L.B., & Murray, D.M. (1998). Adolescents engaging in unhealthy weight control behaviors: are they at risk for other health-compromising behaviors? *American Journal of Public Health, 88*(6), 952-955.

Neumark-Sztainer, D., Story, M., Falkner, N.H., Beuhring, T., & Resnick, M.D. (1999). Sociodemographic and personal characteristics of adolescents engaged in weight loss and weight/muscle gain behaviors: Who is doing what? *Preventive Medicine, 28*(1), 40-50.

Neumark-Sztainer, D., Story, M., & French, S.A. (1996). Covariations of unhealthy weight loss behaviors and other high-risk behaviors among adolescents. *Archives of Pediatrics and Adolescent Medicine, 150* (3), 304-308.

Neumark-Sztainer, D., Story, M., Toporoff, E., Himes, J.H., Resnick, M.D., & Blum, R.W. (1997). Covariations of eating behaviors with other health-related behaviors among adolescents. *Journal of Adolescent Health, 20(6),* 450-458.

Padgett, J., & Biro, F.M. (2003). Different shapes in different cultures: Body dissatisfaction overweight, and obesity in African-American and Caucasian females. *Journal of Pediatric Adolescent Gynecology, 16*(6), 349-354.

Panchaud, C., Singh, S., Feivelson, D., & Darroch, J.E. (2000). Sexually transmitted diseases among adolescents in developed countries. *Family Planning Perspectives, 32*(1), 24-32 & 45.

Rafiroiu, A.C., Sargent, R.G., Parra-Medina, D., Drane, W.J., & Valois, R.F. (2003). Covariations of adolescent weight-control, health-risk and health-promoting behaviors. *American Journal of Health Behavior, 27*(1), 3-14.

Rector, R.E., Johnson, K.A., & Noyes, L.R. (2003). Sexually Active Teenagers Are More Likely to Be Depressed and to Attempt Suicide Center for Data Analysis Report #03-04. Retrieved October 13, 2005, from http://www.heritage.org/Research/Family/loader.cfm?url=/commonspot/security/getfile.cfm&PageID=43062

Robinson, T.N., Chang, J.Y., Haydel, K.F., & Killen, J.D. (2001). Overweight concerns and body dissatisfaction among third-grade children: the impacts of ethnicity and socioeconomic status. *Journal of Pediatrics, 138*(2), 181–187.

Rucker, C.E., & Cash, T.F. (1992). Body image, body-size perceptions, and eating behaviors among African-American and white college women. *International Journal of Eating Disorders*, *12*(3), 291-299.

Sánchez-Johnsen, L.A.P., Fitzgibbon, M.L., Martinovich, Z., Stolley, M.R., Dyer, A.R., & Van Horn, L. (2004). Ethnic differences in Correlates of Obesity between Latin-American and Black women. *Obesity Research, 12*(4), 652-660.

Santelli, J.S., Brener, N.D., Lowry, R., Bhatt, A., & Zabin, L.S. (1998). Multiple sexual partners among U.S. adolescents and young adults. *Family Planning Perspectives, 30*(6), 271-275.

Santelli, J.S., Lindberg, L.D., Abma, J., McNeely, C.S., & Resnick, M. (2000). Adolescent sexual behavior: Estimates and trends from four nationally representative surveys. *Family Planning Perspectives, 32*(4):156–65, 194.

Santelli, L.S., Robin, L., Brener, N.D., & Lowry, R. (2001). Timing of alcohol and other drug use and sexual risk behaviors among unmarried adolescents and young adults. *Family Planning Perspectives, 33*(5), 200-205.

Santelli, J.S., Warren, C.W., Lowry, R., Sogolow, E., Collins, J., Kann, L., et al. (1997). The use of condoms with other contraceptive methods among young men and women. *Family Planning Perspectives, 29*(6), 261-267.

Satcher, D. (1999). Mental health: A report of the surgeon general, presented at the 92nd Annual NAACP Convention, New Orleans, Louisiana.

Schonbeck, L.M. (n.d.). Adolescents and sexually transmitted diseases: A focus on perceived level of risk. Retrieved July 19, 2005, from http://inside.bard.edu/academic/specialproj/darling/transition/group29/lisa1a.html

Schraedley, P.K., Gotlib, I.H., & Hayward, C. (1999). Gender differences in correlates of depressive symptoms in adolescents. *Journal of Adolescent Health, 25*(2), 98-108.

Schreiber, G.B., Robins, M., Striegel-Moore, R., Obarzanek, E., Morrison, J.A., & Wright, D.J. (1996). Weight modification efforts reported by black and white preadolescent girls: National Heart, Lung, and Blood Institute growth and health study. *Pediatrics, 98*(1), 63-70.

Schutt, R.K. (2004). *Investigating the social world: The process and practice of research.* (4th ed.). Thousand Oaks, California: Sage Publications.

Sen, B. (2004). Adolescent propensity for depressed mood and help seeking: Race and gender differences. *The Journal of Mental Health Policy and Economics, 7*(3), 133-145.

Sexuality Information and Education Council (SIECUS). (2001). *Issues and Answers: Fact Sheet on Sexuality Education, 29*(6). Retrieved February 16, 2006, from http://www.siecus.org/pubs/fact/FS_issues_answers.pdf

Shrier, L.A., Harris, S.K., & Beardslee, W.R. (2002). Temporal associations between depressive symptoms and self-reported sexually transmitted disease among adolescents. *Achieves of Pediatrics and Adolescent Medicine, 156*(6), 599-606.

Siegel, J.M., Yancey, A.K., Aneshensel, C.S., & Schuler, R. (1999). Body image, perceived pubertal timing, and adolescent mental health. *Journal of Adolescent Health, 25*(2), 155-165.

Snyder, A.R. & Mclaughlin, D.K. (2005). The influence of parents and peers on risky sexual behaviors. Department of Agricultural Economics and Rural Sociology, The Pennsylvania State University. Retrieved October 7, 2005, from http://www.fipa.aers.psu.edu/ppt/ParentsandPeersTPP.ppt

Story, M., French, S.A., Resnick, M.D., & Blum, R.W. (1995). Ethnic/racial and socioeconomic differences in dieting behaviors and body image perceptions in adolescents. *International Journal of Eating Disorders, 18*(2), 173-179.

Strauss, R.S. (1999). Self-reported weight status and dieting in a cross-sectional sample of young adolescents: National Health and Nutrition Examination Survey III. *Archives of Pediatrics & Adolescent Medicine, 153*(7), 741-747.

Striegel-Moore, R.H., Schreiber, G.B., Pike, K.M., Wilfley, D.E., & Rodin, J. (1995). Drive for thinness in Black and White preadolescent girls. *International Journal of Eating Disorders*, *18*(1), 59–69.

Texas Education Agency (TEA). (2004). *2004-2005 Student Enrollment Reports.* Retrieved November 16, 2005, from http://www.tea.state.tx.us/cgi/sas/broker?_service=marykay&_program=adhoc.addispatch.sas&major=st&minor=e&endyear=05&format=W&linespg=60&charsln=120&selsumm=id&key=057905&grouping=ges

The Henry J. Kaiser Family Foundation. (2002). *Substance use and risky sexual behavior: Attitudes and practices among adolescents and young adults*. Retrieved February 16, 2006, from http://www.outproud.org/pdf/CASASurveySnapshot.pdf

The University of California at Los Angeles (UCLA). (n.d). *Statistical Computing Seminars-Introduction to Survey Data Analysis*. Retrieved January 25, 2006, from http://www.ats.ucla.edu/stat/seminars/svy_intro/default.htm

Tomori, M., & Rus-Makovec, M. (2000). Eating behavior, depression, and self-esteem in high school students. *Journal of Adolescent Health, 26*, (5), 319-367.

Tubman, J.G., Windle, M., & Windle, R.C. (1996). Cumulative sexual intercourse patterns among middle adolescents: problem behavior precursors and concurrent health risk behaviors. *Journal of Adolescent Health, 18*(3), 182-191.

U.S. Department of Health and Human Services (USDHHS). (2004). *Body Image Timeline*. Retrieved April 26, 2005, from http://www.thesite.org/healthandwellbeing/mentalhealth/bodyimageandselfesteem/bodyimagetimeline

Valois, R.F., Oeltmann, J.E., Waller, J., & Hussey, J.R. (1999). Relationship between number of sexual intercourse partners and selected health risk behaviors among public high school. *Journal of Adolescent Health, 25*(5), 328-335.

Wellesley College. (n.d.). *Women's Body Image*. Retrieved April 27, 2005, from http://www.wellesley.edu/Health/BodyImage/

Whaley, A.L. (1999). Preventing the high-risk sexual behavior of adolescents: Focus on HIV/AIDS transmission, unintended pregnancy, or both? *Journal of Adolescent Health, 24*(6), 376-382.

Whitaker, D.J., Miller, K.S., May, D.C. & Levin, M.L. (1999). Teenage partners' communication about sexual risk and condom use: The importance of parent-teenager discussions. *Family Planning Perspectives, 31*(3), 117-121.

Wingood, G.M., DiClemente, R.J., Harrington, K., & Davies, S.L. (2002). Body image and African American females' sexual health. *Journal of Women's Health, 11*(5), 433-439.