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Communication Systems and HIV/AIDS Sexual Decision Making in Older Adolescent and Young Adult Females

Rasheeta D. Chandler MS, ARNP, FNP-BC
University of South Florida

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Communication Systems and HIV/AIDS Sexual Decision Making in

Older Adolescent and Young Adult Females

by

Rasheeta D. Chandler, MS, ARNP, FNP-BC

A dissertation submitted in partial fulfillment
of the requirement for the degree of
Doctor of Philosophy
College of Nursing
University of South Florida

Major Professor: Mary E. Evans, PhD., RN, FAAN
Co-Major Professor: Janie Canty-Mitchell, PhD., RN
Ellen Daley, PhD., MPH
Versie Johnson-Mallard, PhD., ARNP
Jeffrey Kromrey, PhD.

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systems, social cognitive theory, media

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Dedication

This document is dedicated to my parents Richard and Linda Chandler who provided spiritual guidance, continual encouragement, unwavering confidence, and unprecedented support throughout my life. To my brother Lamar Hamilton, love was always enough to help me persevere. This work is in memory of Santiris Renee Wimberly my beloved sister; Florence Ada Chandler “Big Mama” and Trudy Mae Kelly “Granny” honorable matriarchs, and Louis Kelly, Sr. my adored grandfather.

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List of Acronyms

HIV-	Human Immunodeficiency Virus
AIDS-	Acquired Immune Deficiency Syndrome
STI-	Sexually Transmitted Infection
CD4-	Cluster of differentiation 4

Communication Systems and HIV/AIDS Sexual Decision Making in Older Adolescent and Young Adult Females

Rasheeta D. Chandler

ABSTRACT

Human Immunodeficiency Virus and Acquired Immune Deficiency Syndrome (HIV/AIDS) is a national priority for several reasons including its endemic/pandemic status and economic demand. Adolescents 15 to 24 years old who are sexually active acquire nearly half of all new Sexually Transmitted Infections (STIs). Recent findings from the Centers of Disease Control (CDC) have documented increased teen birth rates, escalating births to unwed mothers, and STIs ascribed to one in four adolescent females, are reasons to enhance effective prevention efforts.

The specific aim of the study, based on Bandura's social cognitive theory, was to test associations among communication system methods and HIV/AIDS self-efficacy, perceived risk, knowledge, and sexual decision-making among older adolescent females. Communication systems consist of interpersonal relationships, mass and print media. Research questions are: (1) What are the associations among demographic variables (age, race/ethnicity, education, socioeconomic status) in young women and the types of communication systems

preferred (media and interpersonal)? (2) What are the associations among the types of *communication systems* preferred by young women and *person factors* (HIV/AIDS self-efficacy, perceived risk, and knowledge)? (3) What are the associations among the types of *communication systems* preferred by young women (media, print, interpersonal) and behavior (sexual-decision making)? (4) What are the associations among young women's *person factors* (HIV/AIDS self-efficacy, perceived risk, knowledge) and behaviors (sexual decision-making)?

The study used a non-experimental cross sectional design. The sample included 866 females, 18 to 21 years old, attending the the second largest public university or a historically black university in Florida. Data was collected using validated instruments transcribed into an electronic survey program.

Data analysis consisted of frequency distributions, descriptive statistics, and Multiple Regression Analysis. Results indicated that there were associations between all proposed constructs that constitute the theoretically derived conceptional model. Interpersonal relationships explained the most variance (parents--22%; partners—12%) when associated with other communication systems. Overall, students reported that parents had more influence on their decisions with regards to basic beliefs, value systems, sexuality, dating, and alcohol use.

The communication systems associated with older adolescents' sexual decision-making may assist public health advocates in developing related preventive interventions for young adult females.

Chapter One

Introduction

Preventing Human Immunodeficiency Virus (HIV) acquisition is a national priority. Responsible sexual behavior is one of the ten *Healthy People 2010* leading health indicators that provide an impetus for public health efforts improving HIV prevention and quality of life for United States (U.S.) citizens (U.S. Department of Health and Human Services, 2002). A potential outcome of irresponsible sexual behavior is Human Immunodeficiency Virus (HIV) (Centers for Disease Control [CDC], 2006). According to *Healthy People 2010*, reducing HIV/AIDS rates among adolescents is a national public health goal (U.S. Department of Health and Human Services, 2002).

HIV is the precursor to AIDS (Durham, & Lashley, 2000). Individuals who acquire HIV initially may experience flu-like symptoms, but typically are asymptomatic during the viral replication stage (Durham, & Lashley, 2000). Simultaneously, as the virus is being duplicated in the body, the immune system is weakened (Durham, & Lashley, 2000). Manifestation of AIDS symptoms vary, taking months to years to appear after acquiring HIV, depending on medical intervention and/or lifestyle. AIDS is diagnosed by evidence of opportunistic infections (Durham, & Lashley, 2000). An animated depiction of the HIV lifecycle can be viewed at <http://www.sumanasinc.com/webcontent/animations/content/hiv.html>

(Perry, Staley, & Lory, S., 2002). The cyclic nature of developing opportunistic infections and/or being more susceptible to disease will ultimately result in human demise (Durham, & Lashley, 2000). HIV and AIDS-infected individuals are classified on the basis of CD4+ cell count and clinical categories, which constitute nine mutually exclusive categories (Durham, & Lashley, 2000). For example, a patient who has a CD4+ cell count <200 and has an AIDS-indicator like the opportunistic infection “Kaposi’s sarcoma” would be classified as C3. The classification system is helpful when tracking disease progression (Durham & Lashley, 2000). See *Table 1* for a depiction of the clinical and diagnostic categories of HIV and AIDS infected adults and adolescents. A detailed depiction of how HIV causes AIDS is located at <http://www.niaid.nih.gov/factsheets/howhiv.htm> (National Institute of Health (NIH), 2004). In the literature, HIV and AIDS have been used simultaneously or interchangeably, which may limit distinction when reporting statistics. In this study, HIV and AIDS are reported based on the CDC guidelines listed in Table 1 and are distinguished, when possible, based on disease definition. See Table 2 for Definition of Terms.

Table 1

Classification System of HIV Infection and AIDS for Adolescents and adults

	Clinical categories		
	(A)	(B)	(C)
	Asymptomatic, or Persistent generalized Lymphadenopathy, acute infection	Symptomatic, not (A) or (C) conditions	AIDS- indicators
CD4+ Cell Categories			
< 500/ μ L	A1	B1	C1
200-499/ μ L	A2	B2	C2
<200/ μ L	A3	B3	C3
AIDS-Indicator cell count			

Source: Durham, J., and Lashley, F., 2000; Centers of Disease Control and Prevention. (1992). 1993 revised classification system for HIV infection and expanded surveillance case definition for AIDS among adolescents and adults. Morbidity and Mortality Weekly Report, 41, (No. RR-17), 7.

The Global and National Impact of HIV

HIV is a national priority for several reasons including its endemic/pandemic status (evidenced statistically) and economic demand. In 2007, The World Health Organization (WHO) reported that 33.2 million

individuals were living with HIV. Women comprised 15.4 million of the HIV cases and children under age 15 represented 2.5 million. In the United States, the most recent data estimates that 1.2 million people are HIV positive, with 300,000 being women (15+ years) (WHO, 2007). The global and national HIV crisis is a direct reflection of states, communities, and families.

HIV/AIDS in Florida

Florida has HIV incidence rates that are the third highest in the United States (Florida Department of Health, 2007). Cumulatively, through 2007, 40,642 HIV cases and 109,364 AIDS cases have been reported in Florida (Florida Department of Health [FDLH], 2007). Florida women account for 29% of HIV cases compared to 29% reported nationally. HIV cases in Florida are disproportionately distributed with Black women comprising 63%, White women 21%, and Hispanic women 15% (FLDH, 2007). Women of childbearing age (15 to 44 years) account for 62% of HIV/AIDS cases, which underscores the need for more effective gender and age-specific HIV prevention messages (Florida Department of Health, 2006; Jemmott-Sweet, Jemmott, Hutchinson, Cederbaum, O'Leary, 2008).

HIV/AIDS and Women

Women represent more than one quarter of all new HIV diagnosis (CDC, 2007). Data from the CDC (2005) indicate that, contingent upon race, between 65 to 80% of all HIV cases among women were due to heterosexual transmission and half of all new HIV infections occur in women under age 25 (CDC, 2005).

Further, in 2004, AIDS was the fifth leading cause of death among women ages 35 to 44 and the sixth leading cause of death among women aged 25 to 34 (CDC, 2007). The reported data is consistent when accentuating gender and race as isolates to increased incidence rates, mortality, and morbidity associated with HIV and AIDS.

HIV/AIDS and Race/Ethnicity

For the purposes of this study, Black and Hispanic women represented the minority populations of interest contingent upon being disparately diagnosed with HIV/AIDS, when compared to Whites. HIV incidence varies among subgroups. The U.S. incidence rates for HIV cases in female and adolescents among Black women was 60.2 per 100,000, compared to rates of 15.8 per 100,000 for Hispanics, and 3.0 per 100,000 for Whites (CDC, 2005). In 2005, HIV incidence rates for Black females were 20 times the rates for White females and 5 times the rates for Hispanic females; Black women also exceeded the incidence rates for males of all races/ethnicities other than blacks (CDC, 2007). In Florida, AIDS is the first leading cause of death for Black women ages 25 to 44, fourth for Hispanic women 25 to 44 years, and seventh for White women 25 to 44 years (Florida Department of Health [FLDH], 2006). Overall, Black and Hispanics are disproportionately impacted by HIV and AIDS (CDC, 2007; Laurencin, 2008). Costs ensuing the disease are paid both in currency and with lives.

HIV/AIDS Costs

The 2007 federal funding for global and domestic HIV/AIDS actions was approximately \$23.4 billion dollars (Kaiser Family Foundation, 2006). Funds were proposed to be distributed accordingly: \$13.2 billion (58%) to healthcare for people living with HIV/AIDS in the U.S., \$2.6 billion (12%) to research, \$3.9 billion (17%) globally, \$2.1 billion (9%) to cash/housing assistance, and \$956 million (4%) to domestic HIV prevention (Kaiser Family Foundation, 2006). In a 2003 report, using a logarithmic model, the estimated annual cost of HIV/AIDS in Florida was \$12,103 per patient and \$1,346,778,495 of the total state budget (Razaila, L., Bryant, T., and Livingood, W., 2003). Nationally, in 2000, the estimated lifetime cost per HIV case, which encompassed antiretroviral therapy, prophylaxis and treatment for opportunistic infections, and medical care, was \$199,800 for those between 15 and 24 years of age (Chesson, Blandford, Gift, Tao, & Irwin, 2004). The total HIV/AIDS direct costs for youth aged 15 to 24 years of age was approximately \$3.0 billion dollars in 2004 (Chesson, et al., 2004)). In 2002, the total lifetime cost for HIV incidence was estimated at \$36.4 billion, representing \$29.7 billion of mortality-related productivity losses and \$6.7 billion in lifetime direct medical costs (Hutchinson, Farnham, Dean, H., Ekwueme, Rio, et al., 2006).

Blacks and Hispanics spend less in direct cost, but lose more in productivity (e.g., disability), attributable to delayed HIV/AIDS diagnosis, care, and treatment. As a result, the life expectancy of minorities is reduced when

compared to whites (Hutchinson, A., et al, 2006). Although a substantial amount of capital has been allocated to HIV/AIDS activities, the Joint United Nations Program on HIV/AIDS [UNAIDS] (2007) has indicated a funding gap between resource needs and resource availability. Effective HIV prevention messages could reduce rates of HIV infection and thus defray the cost of HIV/AIDS-associated spending. The monetary contributions are minute when considering the disease dividends of infected youth.

HIV/AIDS and Adolescents

Adolescents 15 to 24 years old who are sexually active acquire nearly half of all new Sexually Transmitted Infections (STIs) (CDC, 2006). In Florida, AIDS-related illnesses are the ninth leading cause of death among people between the ages of 15 to 19 and the fifth leading cause of death between the ages of 20-24 (FLDH, 2007). Seventy-four percent (74%) of females aged 15 to 19 have partners the same age or one to three years older, are less likely to use contraceptives, and are susceptible to an unintended pregnancy (Kaiser Family Foundation, 2005; Di Noia & Schinke, 2008). Recent findings from the CDC have documented behavioral outcomes, the product of actions [e.g. STI acquisition], among adolescent girls. Increased teen birth rates, escalating births to unwed mothers, and STIs ascribed to one in four adolescent females are reasons to enhance effective prevention efforts (CDC, 2007; Flannery, Elkavich, Rotheram-Borus, 2008; Wellings, Collumbien, & Slaymaker, et al., 2006; Ingram,).

Adolescent females 13 to 24 years account for 38% of HIV/AIDS cases [17,824 total cases—reported from 33 states, 2001 to 2004] (CDC, 2004). The primary exposure to HIV/AIDS in this age group is unprotected sexual intercourse (Jemmott, Jemmott-Sweet, & Fong, 1998; CDC, 2005). The 2007 Youth Risk Behavior Surveillance data (Centers for Disease Control [CDC], 2007) reported that 47.8% of high school students had engaged in sexual intercourse and 38.5% had not used a condom at last encounter. Blacks represent the largest proportion of sexually active adolescents, followed by Hispanics (CDC, 2007). Although a decline in sexual activity among adolescents has been reported, these declines are occurring in the lowest risk groups, providing further evidence of the widening health disparities between minority (Blacks and Hispanics) and White adolescents (CDC, 2007; Faryna & Morales, 2000; Feldmann & Middleman, 2002). Nationally, 89.5% of students reported being taught about HIV or AIDS in school; yet only 12.9% reported being tested for HIV (CDC, 2007).

HIV/AIDS and Prevention Messages

Targeting older adolescent females for preventive interventions may contribute significantly to reductions in HIV rates and AIDS morbidity and mortality (Stellefson, & Eddy 2008). The National Institutes of Health (NIH) and the CDC define adolescents broadly as ages 13 to 24 years old. Despite advancements in AIDS treatment and care, there is a dearth of effective preventive interventions targeting young women, especially older adolescents

between 18 and 24 years of age. Younger-aged women are influenced significantly by communications systems (print, media, and interpersonal); yet there are few research studies reported on the association of communication systems and sexual risk taking behaviors in young women.

Impetus for the Study

In 2005, the principal investigator conducted individual interviews with four female nursing students (ages 18 to 22 years) to determine barriers to safe sex practices, using a 20-item open-ended interview guide. Sample questions included: Describe the conversation you have with your partner about safe sex prior to intercourse. What are things you want to know about HIV/AIDS? What methods of advertisement are most appealing to you? Who would be the best person to advise you about sex and HIV/AIDS transmission? Do you feel you have sex for pleasure or out of obligation? Explain.

The *overall theme* derived from the pilot project, was “**Barriers to communicating about sex.**” The lack of communication about sex with supportive persons was evident in each interview. Although the young adults identified parents and family as the individuals who promoted goal attainment and were influential in many aspects of the interviewees’ lives, collectively they each resisted speaking about sex with one or both parents. The respondents perceived that their parents had a low comfort level for discussing sex and gave “vague and unclear” answers to sexually stimulated questions. One interviewee stated, “I feel awkward [talking about sex] with both my mom and dad”.

Four domains emerged from the overall theme. The first domain was **“Partner Pleaser,”** defined as a woman who had sex strictly to gratify or oblige her partners. For instance, a Caucasian female stated, “I was 16 he was 18. We were dating for like 7 months...he wanted to and I guess I was young.” A Black female stated, “I am in a monogamous relationship... it’s more so him, he feels like he is in a relationship with me there’s no reason [to use condoms] cause he’s not doing anything outside, so I’m like fine.”

The second domain was **“Dulled Risk Perception,”** defined as a woman’s risk perception of acquiring HIV infection. Interviewees were asked to rate their risk perception on a scale from “0” (no risk) to “10” (extremely high risk). Most of the interviewees rated their perceived risk as “0,” “1,” or “2.” According to one interviewee, “Because I’m monogamous, I would rate [my risk] a “0”, yeah.” However, the married Black female commented, “0.” Oh! Wait maybe “1” because...I trust my husband but you never know. Maybe like “1” or “2.” With the exception of one interviewee, the partner’s potential to be unfaithful was not considered.

The third domain was **“Monogamy myths”** defined as a woman’s perceptions of partner or spouse fidelity. Interviewees preferred to be in monogamous relationships. Although, the concept of monogamy is essential to the women it may potentially dull the reality of partner infidelity. A Black female stated, “I feel like you should just stick with one person.”

The fourth domain was “**Relational Regrets**,” defined as a woman’s misgivings about past or current sexual behaviors. Three of the interviewees expressed regrets of having sexual intercourse, particularly their first sexual experience. One woman commented, “I always wanted to wait for marriage and know that’s like the only thing in my life I regret.” Another stated, “Well, I guess I didn’t want to have sex before marriage. [After the first sexual encounter at the age of 16], I regretted not being a virgin anymore.”

Based on this small pilot project and an integrative review of the literature, the investigator found significant gaps in research related to the influence of communication barriers on sexual behaviors and decision-making. Further studies are needed to determine associations among preferred communication system messages, HIV/AIDS self efficacy, HIV/AIDS perceived risk, HIV/AIDS knowledge, and sexual decision-making.

Significance of the Study

Previous researchers have focused on preventive interventions related to:

- (a) **parent-child relationships** (Crosby, DiClemente, Wingood, Lang, & Harrington, 2003; DeVore, & Ginsburg, 2005; DiClemente, et al, 2001; Li, Stanton, & Feigelman, 2000; Tinsley, Lees, & Sumartojo 2004;)
- (b) **school-based sex education programs** (DiClemente, 2003; Donohew, Sionean, C., Feist-Price, et al., 2008; Sabia, 2006; Silva, 2002; Zimmerman, Cupp,);
- (c) **peer education** (Caron, Godin, & Lambert, 2004; Mahat, Scoloveno, Ruales, Scoloveno, 2006),
- (d) **avoidance of risky behaviors** (Butts & Hartman, 2002;

Christopherson & Jordon-Marsh, 2004; Crosby, et al., 2001; Halpern-Felsher et al, 2001; Malow, Kershaw, Sipsma, H., Rosenberg, & Devieux, 2007; Rosengard, Adler, Millstein, Gurvey & Ellen, 2004), (e) **condom use** (Halpern-Felsher, Kropp, Boyer, Tschann, & Ellen, 2004; Roye, Silverman, Krauss, 2007; Widdice, Cornell, Liang, Halpern-Felsher, 2006), and **primary care providers** (Jemmott-Sweet, Jemmott, Hutchinson, Cederbaum, & O'Leary, 2008). Overwhelming evidence exists to confirm that current primary prevention efforts have not decreased HIV incidence among adolescents (Kaiser Family Foundation; Hoff, Greene, Davis, 2003).

Wingood & DiClemente (2000) in an article entitled "Application of the theory of gender and power to examine HIV-related exposures, risk factors, and effective interventions for Women", highlight two reports that were published since the beginning of the AIDS epidemic, which concentrate on HIV risk reduction interventions in women. The first report reviewed US randomized controlled HIV interventions (Wingood, & DiClemente, 1996). The second document aggregated all US, Canada, and Puerto Rico HIV intervention studies (Exner, Seal, & Ehrhardt, 1997). Wingood & DiClemente (2000) concisely summarize both documents with the following conclusions: "Both reviews suggest that the most efficacious HIV prevention programs for women (1) are guided by social psychological theories; (2) include only women; (3) emphasize gender-related influences, such as gender-based power imbalances, and sexual assertiveness; (4) are peer led; and (5) require multiple session programs. Both

reviews suggest that future research needs to address the environmental conditions impeding women's ability to protect themselves against HIV" (p.545).

There are gaps in the research literature on the environmental influences of mass media, print media, and communication systems on older adolescents' sexual decision-making. Most HIV prevention messages, which appeal to the adolescent audience, have been mass media campaigns. For example, Music Television (MTV) endorse "*thInk*"© rebranded as "Its Your (Sex) Life" in 2007 (MTV networks ©, 2008); Black Entertainment Television, Inc. (BET) promotes HIV prevention in their *Rap It Up Campaign*© (Black Entertainment Television, 2008)'; Fox Network partnered with Kaiser Family Foundation to sponsor the "PAUSE campaign", which promotes smart choices and healthy lifestyles (Fox Network, 2008); and Univision supports "Salud es Vida ¡Entérate! (Univision, 2008) developed to provide health information to Latinos under age 25.

The impact mass media communication systems have on sexual decision-making, HIV/AIDS knowledge, HIV/AIDS self-efficacy, and HIV/AIDS risk perception is unknown. Research-based preventive interventions employing communication system techniques may have the greatest potential for reducing current HIV incidence, AIDS morbidity and mortality, and their associated health care costs (CDC, 2004; Honig, 2002; Ingram, Flannery, Elkavich, and Rotheram-Borus, 2008; Sells and Blum, 1996). Determining communication system influences on sexual decision-making may assist public health advocates in

developing related preventive interventions that appeal to a population of older adolescent females.

Purpose of the Study

The purpose of the study is to test associations among communication system messages, self-efficacy, perceived risk, HIV/AIDS knowledge, and sexual decision-making in older adolescent females. Communication systems include mass media, print media, and interpersonal relationships (peers, parents, and partners) (Brown & Witherspoon, 2002; DuRant et al., 2006; Lerner & Castellino, 2002). Many studies have focused on one specific communication method (Brown & Witherspoon, 2002; Chapin, 2000; Collins et al., 2004). While numerous studies have associated self-efficacy, perceived risk, HIV/AIDS knowledge, and sexual decision-making, few researchers have linked the influence of multiple communication system messages to the above variables (L'Engle, Brown, & Kenneavy, 2006).

This research will seek to determine how each type of communication system is associated with self-efficacy, HIV/AIDS risk, HIV/ AIDS knowledge, and sexual decision-making. The broad long-term objective is to develop communication system preventive interventions that will improve women's health and prevent sexual decisions that will make adolescents susceptible to HIV/AIDS.

Research Questions

The research questions in this study are:

1. What are the associations among *demographic variables* (age, race/ethnicity, education, socioeconomic status) in young women and the types of *communication systems* preferred (media and interpersonal)?
2. What are the associations among the types of *communication systems* preferred by young women and *person factors* (HIV/AIDS self-efficacy, perceived risk, and knowledge)?
3. What are the associations among the types of *communication systems* preferred by young women (media, print, interpersonal) and behavior (sexual-decision making)?
4. What are the associations among young women's *person factors* (HIV/AIDS self-efficacy, perceived risk, knowledge) and behaviors (sexual decision-making)?

Summary of Introductory Chapter

This introductory chapter included a global, national, and state (Florida) perspective of the HIV/AIDS epidemic, contextualizing the relevance of this research. The key concepts to consider are U.S. adolescents (15 to 24 years old) comprise nearly half of all new STIs. In Florida, currently AIDS is one of the top ten leading causes of death for women 25 to 44 years old; population-specific prevention messages are options in combating new HIV/AIDS incidence. *Table 2* provides the definitions of relevant terms included in this document.

Chapter Two includes a review of relevant literature including the theoretical framework guiding the study and research related to the major study variables.

Table 2

Definition of Terms

Term	Definition	Reference
Human Immunodeficiency Virus (HIV)	A retrovirus that is the antecedent to AIDS.	(Durham & Lashley, 2000)
Acquired Immune deficiency Syndrome (AIDS)	A specific group of diseases or conditions that are indicative of severe immunosuppression related to infection with HIV.	(Durham & Lashley, 2004)
Retrovirus	A ribonucleic acid (RNA) That once inside a human cell uses an enzyme to convert their (RNA) into DNA, which is incorporated into the host cell's genes.	(NIAID, 2004)
Opportunistic infections	A hallmark for AIDS, many of these infections were rare, latent infections that cause no pathogenicity in immunocompetent host.	(Durham & Lashley, 2000)
Immunity	Derived from the Latin word <i>immunitas</i> defined as a reaction to foreign substances.	(Abbas & Lichtman, 2005)
CD4 Cells	Helper cells that initiate the body response to invading microorganisms such as viruses. It serves as the host cell for HIV to replicate itself.	(Durham & Lashley, 2000)
Lymphadenopathy	Swollen or enlarged lymph nodes.	(Durham & Lashley, 2000)
Symptomatology	Symptoms of disease.	(Durham & Lashley, 2000)

Chapter Two

Review of Literature

The review of literature was divided into five sections: (a) Theoretical framework: Social cognitive theory; (b) research related to demographic factors; (c) research related to environmental factors; (d) research related to person factors; and (e) a review of literature related to behavior (sexual decision-making). Each section of the literature included subcategories of pertinent conceptual and theoretical content.

Theoretical Framework

The theoretical framework used to guide this study is the *Social cognitive theory (SCT)* (Bandura, 1986; 1995). The SCT depicts human behavior as a triadic relationship between *environment, person, and behavior*. Bandura (1986) defined *environment* as both the social and physical factors that can affect a person's beliefs, cognitive competencies, and expectations. *Person* was defined as one's thoughts, emotions, and biological properties. *Behavior* was defined as a person's actions (Bandura, 1986). The social cognitive theory proposes that individuals need the appropriate social skills, social norms, and information to avoid engaging in high-risk sexual behavior (DiClemente, & Wingood, 1995).

Figure 1 is the logic model for use in the study, which proposes a distinct association among environmental factors, person factors, and behaviors. For the

purposes of this study, environmental influences are limited to communication systems (mass media and interpersonal relationships [parent, partners, and peers]). The socio-demographic factors are subsets of person characteristics thought to influence communication system factors. Person factors are HIV/AIDS self-efficacy, perceived risk, and knowledge. The behavior of interest is sexual decision-making.

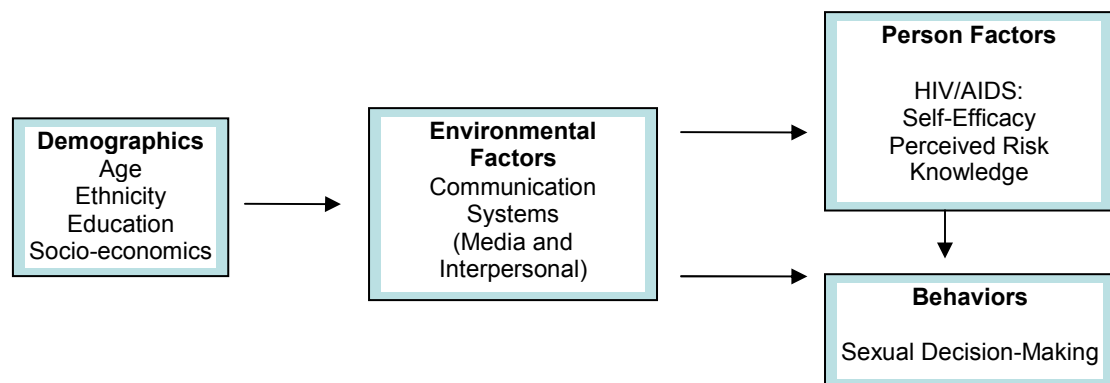


Figure 1
Logic model of associations among demographics, environmental (communication systems), person factors, and young women's risk taking behaviors

Demographic variables.

Demographic factors that depict an individual's unique characteristics and preference are important when trying to determine specific environmental influences on behavior. In the United States, the proportion of adolescents and young adults with AIDS has increased from 3.9 percent in 1999 to 4.2 percent in 2004 (CDC, 2006). Individuals diagnosed with AIDS by age 30 were infected with HIV in their teens or early twenties, primarily through sexual transmission

(CDC, 2003). In 2005, greater than 50% of the 4.8 million persons infected with HIV worldwide were under age 25 (CDC, 2003).

Since 1985, the proportion of estimated AIDS cases diagnosed among women has more than tripled from 8% in 1985 to 27% in 2004 (CDC, 2005). If new HIV infections continue at their current rate worldwide, women with HIV may soon outnumber men with HIV (CDC, 2005). Blacks are disproportionately affected by HIV/AIDS, constituting 61% of the more than 830,000 cases of AIDS reported to the CDC since 1981 (CDC, 2003). During 1991-2003, 6.6 million adolescents report being engaged in sexual activity with Blacks representing the highest percentage (Center of Disease Control, 2003).

Logan, Cole, and Leukefeld (2002) conducted a meta-analysis to evaluate social and contextual factors related to women, sex, and HIV. The literature review summarized contributory factors to the social and contextual risks of HIV and AIDS (Logan, Cole, & Leukefeld, 2002).

Social factors were delineated by race highlighting African American and Hispanic women. Social and cultural norms, defined as beliefs, values, and practices of a specific group, were social risks that contributed to the probability of HIV and AIDS acquisition for African American and Hispanic women (Logan, Cole, & Leukefeld, 2002). African American women were confronted by sex ratio imbalance (less male to female ratio) which decreased condom negotiation and expectations of fidelity (Logan, Cole, & Leukefeld, 2002). Hispanic women were expected to be sexually naive and Hispanic males were to be sexually

dominant and promiscuous (Logan, Cole, & Leukefeld, 2002). —Poverty endorsed basic needs take precedence over implementing safer sex practices, and having an incarceration history was a contributor to HIV and AIDs risk (Logan, Cole, & Leukefeld, 2002). Contextual factors include: gender roles, victimization, substance abuse, and sex exchange. Eighty-four articles ranging from 1992 to 1999 were obtained through 14 electronic databases (Logan, Cole, & Leukefeld, 2002). Thirty-six percent of the articles were included in the meta-analysis that targeted heterosexual adult populations with HIV prevention interventions (Logan, Cole, & Leukefeld, 2002). The study concluded with 3 implications for practice including the need to “increase comprehensiveness of HIV prevention interventions, advance female controlled methods, and change social and cultural norms regarding sexual behavior” (Logan, Cole, & Leukefeld, 2002, pg. 865). The lack of published literature that targets women’s multiple roles and gender specific needs was identified (Logan, Cole, & Leukefeld, 2002).

Environmental Factors.

For the purposes of this study, environment will be limited to communication systems. Bandura (1986) defines environment as both the social and physical factors that can affect a person’s behavior. Mass media is considered a social factor that influences person factors and sexual decision-making.

Mass media. L’Engle, Brown, and Kenneavy (2006) defined mass media as television, music, movies, and magazines. Other authors included public

service announcements (PSA), radio, billboard advertisements (Durant, Wolfson, LaFrance, Balkrishnan, & Altman, 2006), as well as comic books, music videos, video games, and internet (Brown & Witherspoon, 2002; Ybarra, 2007). Bandura (2001) depicts mass media as social realities which are reenacted or reported to portray human nature, social relations, norms, and the structure of society

Contributions of mass media as an important context of adolescents' sexual behavior are present in research studies (Bandura, 2001; Chapin, 2000; L'Engle, Brown, & Kenneavy, 2006; Brown, Halpern, & L'Engle, 2005; ; Petraglia, Galavotti, Harford, Pappas-Deluca, & Mooki, 2007; Ybarra, Bull, 2007). Roberts & Foehr (2004) noted that adolescents spend six to seven hours per day using media—three hours watching television, two hours listening to music, one hour watching video tapes and movies, and three fourths of an hour reading. Cline and Haynes (2001) noted that 50 million people seek health information online, yet the quality of information may be unreliable.

Graham and Kingsley, through Kaiser Family Foundation [KFF] (2005), released a study that indicated teens preferred television (TV) programs with comparable or higher sexual content relative to collective TV programming. In addition, sexual scenes on television, since 1998, have nearly doubled. Study results evidenced 70% of all shows have sexual undertones; yet only 14% of the shows reference sexual risk (Graham, & Kingsley [KFF], 2005).

In a study that compared influences from the mass media on adolescents' sexual intentions and behaviors, N = 1011 Black and White adolescents from 14

middle schools in the U.S. were administered mail surveys and Audio-CASI interviews (L'Engle, Brown, & Kenneavy, 2006). According to L'Engle, et al. (2006), adolescents are frequent users of unhealthy media messages, but mass media influences are rarely included in ecological models and are rarely considered as important contexts for adolescents' sexual socialization. L' Engle et al. (2006) concluded that adolescents (12-19 years old) who had increased media exposure to sexual content and perceived media endorsement of adolescent sexual romance, report more sexual activity and greater intentions to engage in sexual intercourse in the near future. After controlling for support from other important socialization sources like parents and peers, media influences were significantly associated with sexual intentions and behaviors (L'Engle, et al., 2006).

The influence of media on sexual intentions and behavior was also captured in a study conducted by the CDC. The CDC employed a HIV prevention program utilizing media messages entitled "The CDC Prevention Marketing Initiative (PMI)". The project was conducted over a five year period with five sites. The study sought to reduce sexual HIV risk behavior among young people under age 25. One component of the CDC program was face-to-face exposure to prevention messages, which included: mass media, small print media, promotional materials, peer outreach, and special events referred to as a marketing mix. As a result of exposure to the messages, participants reported a reduced level of risk behavior and increased determinants of safer sexual

behavior (CDC, 2002). In a health poll conducted by Kaiser Family Foundation (2003), women's main sources of information about HIV/AIDS was reported by percentage to include: Media (TV, Radio, Newspaper,) 73%, doctor/other health professional 8%, family/friends 7%, internet 2%, other 7%, & don't know 3%.

Media are powerful catalysts to facilitate HIV prevention messages; however, advertisements must be tailored to appeal to the target audience (DiClemente & Crosby, 2006; Kotler, Roberto, & Lee, 2002; KFF, 2005). To use HIV prevention resources efficiently, the most effective communication systems need to be identified. The impact of communication systems on a person's self efficacy, perceived risk to acquiring HIV, and HIV/AIDS knowledge may determine adolescents' future sexual decisions.

Interpersonal relationships. For the purpose of this project, interpersonal relationships will be limited to peers, partners, and parents. Bandura (1986) defines interpersonal relationships by combining several concepts (modeling, instruction, and social persuasion), which have social influences and evoke emotional reactions Bandura (1986). Modeling (observational learning) entails observing others, forming a conceptual strategy, and on later occasions the strategy serves as a guide for action Bandura (1986). Instruction is verbal persuasion that influences actions. Social persuasion is societal adjuncts to an individual's behavior Bandura (1986). Interpersonal relationship is inclusive of peers, parents, and partners because, based on previous research, the selected variables impact the sexual decisions made by adolescents.

Peer relationships. Peer relationships are defined as voluntary and egalitarian relationships implying shared power, symmetrical modality, and mitigation (Adams and Laursen, 2001). For the purpose of this study, peer relationships are conceptualized as communication between adolescents that impact behavior. Peers are extremely influential during adolescence (Crosnoe, R., & McNeely, 2008). Teens tend to compare their personal risk with individuals in their cohort. Ellen, et al (1996), reported that adolescents' perceptions of risk appear to be related to anxiety about STDs and HIV and their behaviors may be related to peer influences and attitudes toward using condoms. Adimora & Schoenbach (2002) conceded that social environment can influence sexual behaviors. Before being able to change risky sexual behavior, the behavior must first be perceived as a risk by the adolescent population, and an alternative social norm/behavior that is endorsed by the target population must be marketed. D'Souza & Shrier (1999) acknowledged that adolescents tend to conform to social norms and their perceptions of social norms may significantly influence their willingness to change behaviors.

The media has been viewed as a "super peer", particularly when adolescents are seeking information about sexuality (L'Engle et al, 2006). Easy accessibility and nonjudgmental educators (media and peers) typically attenuate the more conventional sexual values expressed by adults. (L'Engle et Al., 2006). Gaps in the literature are relevant to identifying the association between

interpersonal relationships with peers, other person factors, and in comparison to media which has the greatest influence.

Parent relationships. For the purpose of this study, parent relationships are conceptualized as communication between adolescents and their parent(s) that impacts behavior. Studies have documented the importance of parent-child communication in promoting decreased risk behaviors in adolescents (Crosby, DiClemente, Wingood, Lang, & Harrington, 2003; DeVore & Ginsburg, 2005; DiClemente, Wingwood, Crosby, Sionean, Cobb, Harrington, Davies, Hook, & Kim, 2001; DiLorio, McCarty, Denzmore, & Landis, 2007; Hutchinson, M., Jemmott, Jemmott-Sweet, Braverman, & Fong, 2003;; Sieving, McNeely, & Blum, 2000). Adams & Laursen (2001) characterize parent relationships as obligatory and hierarchical. However, Bell, Cornwell, and Bell (1988) noted that there were various degrees interpersonal boundaries between family members. One extreme is enmeshed families, which signify an increased level of involvement, communication, and concern. At the opposing end are disengaged families with rigid interpersonal boundaries, an extreme lack of responsiveness, and under involvement of family members toward each other. The impact that parent relationships have on decreasing risky sexual behaviors and HIV incidence in their youth needs further investigation.

College students, particularly college freshmen, continue to regard their parents as the most influential people in their lives (Wilks, 1986; Curtis, 1974). As college students gain behavioral independence, parent-child communication

can become more candid and less threatening (Blos, 1967; Cooper, Grotevant, Moore, & Condon, 1982; Sullivan & Sullivan, 1980). According to studies, parental communication about HIV has an impact on children's attitudes, and sexual intentions (DeVore, & Ginsburg, 2005; Hutchinson, Jemmott, Jemmott-Sweet, Braverman, & Fong, 2003; Tinsley, Lees, & Sumartojo, 2004; Teitelman, A., Ratcliffe, & Cederbaum, 2008). Stattin and Kerr (2000) suggest that parent-child relationships that encourage communication are deterrents to deviant adolescent behavior. More specifically, increased communication with a parent was associated with increased self-efficacy for condom use and refusal to engage in sex (DiClemente et al, 2001).

Hutchinson, Jemmott, Jemmott-Sweet, Braverman, & Fong, (2003) conducted a prospective study to examine the relationship between mother-daughter communication about sex and sexual risk behaviors. Sexually experienced females (N = 219) between the ages of 12 and 19 years old were stratified by age and randomly assigned to three intervention groups. Participants completed questionnaires at pre-intervention, post-intervention and 3, 6, and 12-month follow-up. The study concluded that mother-daughter communication about sexual risks were protective against STI and HIV-related sexual risk behaviors (Hutchinson, Jemmott, Jemmott-Sweet, Braverman, & Fong, 2003)

Adolescents typically trust and depend on their parents to provide them with accurate information. Parents who are equipped with facts about safe sex

practices can facilitate primary HIV prevention (DeVore & Ginsburg, 2005; Sieving, et. al, 2000; Sigelman, Mukai, Woods, & Alfred, 1995).

Parents and guardians are important support systems for adolescents and in many instances serve as role models. Parents' actions can define normalcy or expectant behaviors for their children; therefore parents have to ensure that their deeds are congruent with the verbal transfer of information to their children (Fisher, 1987; DeVore & Ginsburg, 2005). For instance, risky adult behavior has been associated with risky adolescent behavior and premature sexual activity (DeVore & Ginsburg, 2005). According to Males (1992), family communication conditions and adult role modeling are two of the determinants that affect adolescent sexual activity and use of contraceptives.

Youth desire to have guidance and support from their parents (Brown, & Witherspoon, 2002; DeVore & Ginsburg, 2005). Studies indicate that parents continue to have considerable influence on their children, even into late adolescence. During behavioral development, like establishing sexual values, parents do influence their children (Buhi, & Goodson, 2007; DeVore & Ginsburg, 2005; Fisher, 1987; Miller, Levin, Whitaker, & Xu, 1998). However, communication barriers exist between adolescents and their parents concerning the topic of sex. This study will seek to address the literary gap by determining the association between interpersonal relationships with parents, other person factors, and in comparison to media which has the greatest influence.

Partner relationships. For the purpose of this study, partner relationships are conceptualized as communication between adolescents and their partner(s) that impacts sexual behavior. Partner relationships are defined as “primary partners” synonymous with spouse, main, steady, established, long-term or “secondary partners” (side, casual, non-main, new, anonymous, one-night stand) (Rosengard, Adler, Gurvey, & Ellen, 2004). Researchers have noted that women who communicate with their partners about condom use are more confident, more sexually assertive, have increased self-efficacy, and are proactive about HIV prevention (Kaiser Family Foundation, 2003; Rosengard, Adler, Gurvey, & Ellen, 2004). The Henry J. Kaiser Family Foundation published a report in 2003 entitled *Perspective on the Epidemic: Women and Teenage Girls at Risk for HIV*. The purpose of the project was to learn about at-risk women’s knowledge and concern about HIV/AIDS, and determine how HIV risk perception affects their sexual behavior.

Using qualitative methods, the study explored what participants knew and did not know about HIV/AIDS in terms of transmission, incidence, and prevention. The article highlighted conspicuous behavioral characteristics that tend to inspire or discourage condom use. Women were less likely to use condoms in long-term, ostensibly monogamous relationships. What constituted a long-term relationship appeared to differ from participant to participant. Women who demonstrated consistent condom use were those who were able to continue condom use regardless of relationship status, have confidence to communicate

their desire to use condoms, and being proactive about HIV prevention by providing condoms for their partner(s) [ensuring condom availability] to use or employing the female condom (Kaiser Family Foundation, 2003).

In the Kaiser study, doers were primarily described as individuals who were able to communicate with their partner about condom use, understood how to properly utilize a condom, and who could restrain from sex when no condom was available. Doers were also characterized as being sexually assertive and demanding that their partner use a condom with every sexual act. Women who were not fearful of losing their partner or realized the potential of partner infidelity were more optimistic about personal HIV risk.

There were covert differences that existed between the doers and non-doers which are best identified by the individual characteristics (Kaiser Family Foundation, 2003). In contrast, the non-doers typically were afraid of offending their partner, implying mistrust. Women in the study reported condom use less common in long-term relationships. For example, “A teen explained, [A]t first you do [use condoms] and after awhile that’s it. At least that’s the way it is for me. At first you don’t know the person as well and stuff like that; afterwards you just build up confidence and trust (Kaiser Family Foundation, p12).” Denial and emotional impetus plague anti-condom use. One woman explained, “I have friends that don’t necessarily use protection all the time... because they get caught in the heat of the moment (Kaiser Family Foundation, p. 14).” Non-doers have been described as passive, when confronted with men who resist using

condoms; therefore, discussing condom use is very difficult for some women. A woman explained, "Asking a man to wear a condom is '[just like saying,]' you could have a disease, and so could you please put this thing on so I don't get anything. It's just horrible, just horrible (Kaiser Family Foundation, p. 15)."

Faryna & Morales (2000) noted that sexually active adolescents avoid conversations about AIDS with their sexual partner prior to intercourse; yet the strongest predictor of condom use was having asked a partner to use one. Women who consistently use condoms possess self-efficacy, having a perceived risk of being able to acquire HIV, and feel confident about communicating with their partner about using condoms.

This study will seek to address that literary gap by determining the association between interpersonal relationships with partners, other person factors and in comparison to media which has the greatest influence on sexual decision making.

Person Factors

For the purpose of this study, person factors are defined as cognitive precursors to behavior assessed by HIV/AIDS self efficacy, perceived risk, and knowledge.

HIV/AIDS self efficacy. Bandura (1995) defines self efficacy as an individual's confidence that they can successfully execute a behavior necessary to produce a desired outcome regardless of knowledge or skill. Bandura (1995) suggests that individuals are more likely to adopt favorable health behaviors and

reject detrimental behaviors based upon three cognizant processes: 1) the expectancy that one is at risk; 2) the expectancy that behavior changes would reduce the threat; and 3) the expectancy that one is sufficiently capable of exercising control over risky behaviors. In the literature, adolescents' self-efficacy has a strong explanatory power for behaviors to avoid HIV transmission (Honig, 2002). Lindberg (2000) conducted a study to compare the relationships among condom use knowledge, self-efficacy for condom use, and condom use in a sample of 100 women. The significant paths were between condom use knowledge and self-efficacy, self-efficacy and condom use, and between self-efficacy and problem-focused coping (Lindberg, 2000). Faryna & Morales (2000) conducted a study implementing a cross-sectional correlational design to assess self-efficacy and risk behaviors related to HIV in N = 427 (225 females) high school students ages 12 to 20 years. Faryna & Morales contend that when predicting risk in adolescents, ethnicity has the strongest relationship in comparison to gender, self-efficacy, knowledge, attitudes, and beliefs. Therefore, a recommendation was to revise HIV prevention theories to consider ethnic communication (languages, dialects, speech patterns and nonverbal cues specific to cultural groups) (Faryna & Morales, 2000).

HIV/AIDS perceived risk. Perceived risk is an individual's interpretation of their susceptibility to harm (McNeely, Nonnemaker, & Blum, 2002). For the purpose of this study, HIV/AIDS perceived risk is conceptualized as adolescents' self appraisal regarding susceptibility for acquiring HIV/AIDS. Many behavioral

change theories including the social cognitive theory (Bandura, 1986), Health Belief Model (Rosenstock, 1974), and the Theory of Planned Behavior (Ajzen, 1991) have integrated risk perception as a construct (Kershaw et al., 2003; Millstein, S & Halpern, B. 2002). For instance, the Theory of Planned Behavior indicates that control beliefs, a related term of perceived risk, is derived from perceived presence of factors that may facilitate or impede performance of behavior, which then determines perceived behavioral control (Ajzen, 1991). Ajzen (1991) extracted the perceived behavioral control concept from Bandura's self-efficacy construct, which is a fundamental component within the social cognitive theory. According to the Theory of Planned Behavior, an individual's perception of potential risk or benefits will predict their intention or readiness to perform or not perform a behavior (Ajzen, 1991). Collectively, all of the above-mentioned theories posit that individual beliefs about the consequences of their action affect behavior (Millstein & Halpern, 2002).

The concept of risk perception has been identified as a precursor to behavior (Millstein & Halpern-Felsher, 2002; Patel, Yoskowitz, & Kaufman, 2007; Weinstein, 1999). Currently, there is research that focuses on how adolescents perceive their vulnerability to disease and illness (Brown, Outlaw, & Simpson, 2000; Goldberg, 2002; Millstein & Halpern, 2002). Millstein & Halpern (2002) noted adolescents were most concerned about appearance, mental health, interpersonal relationships, and school and least concerned with nutrition, exercise, and sexual behavior. However, the researchers noted that adults have

underestimated the amount of knowledge and degree of concern that teens have about topics such as AIDS. Decision-making is contingent upon an individualized probability of harm, taking into consideration personal vulnerabilities such as family history, personal behaviors, and environmental exposures (Millstein & Halpern-Felsher, 2002).

Risk perception is based on a complex matrix of cognitive functions such as emotions, personal values, economic constraints, environmental stressors, and social norms (Kershaw et al., 2003; Millstein, S & Halpern, B. 2002; Weinstein, 1999). The literary gap addressed in this study is to determine if HIV/AIDS perceived risk is associated with defined communication systems and ultimately behavior.

HIV/AIDS knowledge. HIV knowledge is conceptually defined as familiarity, awareness, or understanding gained through experience or study of the HIV; the sum or range of what has been perceived, discovered, or learned about HIV (Clark, Jackson, & Taylor, 2001). Bandura (1986) noted that the learner acquires knowledge as his or her environment converges with personal characteristics and personal experience. For the purpose of this study, knowledge is conceptualized as adolescents' knowledge about HIV/AIDS disease. Knowledge has a bi-directional relationship with perceived risk (Weinstein, 1999). In order for an individual to perceive a risk, ideally they have some knowledge about the topic or disease process. If knowledge of HIV/AIDS does not exist, the individual may not perceive their behavior as risky (Weinstein,

1999). Knowledge alone is not enough to detour behavior. As a result, knowledge must be combined with a decision in order to produce behavior (Robinson, Richter, Shegog, M., Weaver, Trahan, et al., 2005; Weinstein, 1999). Knowledge among adolescents regarding HIV/AIDS is inconclusive; yet when teens have been educated, they tend to absorb the information (Clark, Jackson, & Taylor, 2001). In a study by Ateka & Selwyn (2007), female adolescents tended to have substantial knowledge about HIV and reported a high level of interest in HIV and STD subject matter when compared to their male cohort. The literary gap addressed in this study is to determine if HIV/AIDS knowledge is associated with defined communication systems and ultimately behavior.

Behavior

Bandura (1986) defined behavior as a person's actions. According to Bandura (1986), behavior is influenced by psychosocial factors and social networks. "Most external influences affect behavior through cognitive processes rather than directly. Cognitive factors partly determine which environmental events will be observed, what meaning will be conferred on them, whether they leave any lasting effect, what emotional impact and motivating power they will have, and how the information they convey will be organized for future use" (Bandura, 2001, 267).

Risky sexual behavior was conceptually defined by Taylor-Seehafer & Rew (2000) as "any sexual activity that increases the risk of contracting HIV or other STI or becoming pregnant" (pg. 15). For the purpose of this study,

behavior was conceptualized as the adolescent's decision to engage in risky sexual acts as a result of communication systems and/or person factors.

Sexual decision-making. Decision-making is a cognitive process that determines the actions of an individual (Keller, Duerst, & Zimmerman, 1996). Keller, Duerst, & Zimmerman (1996) believe that "the physiological urge for sexual activity is accompanied by a sense of invulnerability to harm that causes adolescents to believe sexually transmitted diseases (STDs), pregnancy, and other negative outcomes will not happen to them", p. 127).

Rosenthal et al. (2001) determined that developmental factors play a significant role in adolescent females' decision to have intercourse. In addition, the researchers demonstrated that parental influence proved to impact the timing of a girl's initial sexual encounter. The researchers indicated that parent-child comradery and dialogue about disapproval of early sexual debut and general sexual content was associated with a delay of sexual initiation (Buhi & Goodman, 2007; Rosenthal et al., 2001). According to Rosenthal et al. (2001), an intervention that would promote responsible decision-making in adolescents would focus on effective parental communication about safer sex behaviors. Health care providers should be perceptive about adolescents' developmental, physiological, and biological changes proportionate to sexual curiosity, as they aid adolescents in making healthy sexual decisions (Cook, Erdman, & Dickens, 2007; Rosenthal, et al., 2001).

Short, Succop, Mills, Stanberry, Biro, & Rosenthal (2003) described decision-making as a “negotiation of sexual relationships that reduce one’s risk of sexually transmitted diseases (STDs) and unintended pregnancies and permits a positive sense of one’s sexual self” (pg. 752). Short et al. (2003) emphasized that adolescent issues such as sexual history, family involvement, and romantic relationship characteristics influenced their decisions about monogamy and sexual habits. The researchers concluded that adolescents need romantic interactions to help formulate their identity, and this search for individuality could result in relationships that are short-lived, emotionally laden, and casual (Short, Succop, Mills, Stanberry, Biro, and Rosenthal, 2003). However, with parental supervision, adolescents delay sexual intercourse and engage in less sexual risk-taking, indicating a higher likelihood of making responsible decisions (Buhi, Goodman, 2007; Short, Succop, Mills, Stanberry, Biro, & Rosenthal 2003;).

Butts and Hartman (2002) designed a study to evaluate the effectiveness of a behavioral intervention to reduce HIV risk in adolescents (BART). These researchers suggested that the determining factor for engaging in risky behavior and therefore implementing dysfunctional decisions was due to a lack of knowledge (Butts & Hartman, 2002). On the contrary, Ateka & Selwyn (2007) argued that HIV/AIDS knowledge is not lacking in female adolescents, concluding that “teens must be able to incorporate cognitive factors including values, attitudes, and social norms in their decisions and actions” (Butts & Hartman, 2002 pg. 168). Behavioral interventions must be customized for

diversified populations and different patterns of behavior (Ingram, Flannery, Elkavich, Rotheram-Borus, 2008; Patel, Yoskowitz, & Kaufman, 2007; Wellings, Collumbien, & Slaymaker, et al., 2006)

Chapter Two Summary

The literature review was systematically presented to convey current intellect about the study variables and how these variables are related to the proposed research objective. An exposed literary gap was the potential influence that communication systems may have on older adolescents' person factors and sexual decision-making. More specifically, the preferred conduit for HIV/AIDS prevention messages has not been assessed in adolescent and young adult females.

Chapter Three consists of the following methodological components: Research design, sample setting, subject recruitment, instruments/measures, procedures, and data analysis.

Chapter Three

Methods

Chapter Three describes the methodological process employed by this study. The specific aim of the study was to test associations among communication systems, self-efficacy, perceived risk, HIV/AIDS knowledge, and sexual decision-making in older adolescent females.

Questions that coincide with the specific aim are:

1. What are the associations among *demographic variables* (age, race/ethnicity, education, socioeconomic status) in young women and the types of *communication systems* preferred (media and interpersonal)?
2. What are the associations among the types of *communication systems* preferred by young women and *person factors* (HIV/AIDS self-efficacy, perceived risk, and knowledge)?
3. What are the associations among the types of *communication systems* preferred by young women (media, print, interpersonal) and behavior (sexual-decision making)?
4. What are the associations among young women's *person factors* (HIV/AIDS self-efficacy, perceived risk, knowledge) and behaviors (sexual decision-making)?

Research Design

A non-experimental cross-sectional design was used to answer the research questions (Polit, 1996). Data was collected, using the Dillman (2007) tailored design recruitment method, from 866 young adult and adolescent females who attended Florida A & M and University of South Florida. To reduce threats to validity, internet surveys were generated using reliable and valid instruments.

Sample and Setting

Sample. A convenience sample of female students attending the University of South Florida (USF) and Florida Agricultural and Mechanical University (FAMU) was recruited. A sample size of at least 198 was considered adequate when using a statistical power analysis assuming $\alpha = .05$ and the power = .80.

Setting. The study was conducted at the University of South Florida (USF) (Tampa Campus) and the Florida Agriculture and Mechanical University (FAMU) (Tallahassee, Florida). The two campuses were selected to gain samples of racially and ethnically diverse college students. The University of South Florida is the second largest 'Research University/Very High Research Activity' public university in Florida. In 2006, USF enrolled 35,495 students [26,950 were undergraduates (63% Caucasian, 13.5% African American, 13% Hispanic, and 6.4% Asian/Pacific Islander)]. In 2005, FAMU, a Historically Black University,

enrolled 12,157 students (4.5% Caucasian, 91.4% African American, 1.5% Hispanic, and .8% Asian/Pacific Islander). (See *Tables 3 and 4*)

Table 3 U.S. Census % by Race/Ethnicity in targeted counties (2005)

County	Total County population	Caucasian	African American	Hispanic	Female Persons
Hillsborough	1,111,717	62.1%	15.7%	19.5%	50.8%
Leon	233,649	65%	29.8%	3.9%	51.9%

State and County Quick Facts. <http://quickfacts.census.gov/qfd/states/12000.html>

Table 4 Demographics of USF and FAMU

University	Total Population	Caucasian	African American	Hispanic	Female Persons
FAMU (2005)	12,157	4.5%	91.4%	1.5%	58%
USF (2007)	26,950	63%	13.5%	8.6%	57.8%

University of South Florida & Florida A & M Registrars office

Participants

Purposive sampling was used to recruit the students. College women were recruited through electronic announcements from December 2007 to February 2008. Inclusion criteria for female adolescents in this study were: (1) enrolled full or part-time at the University of South Florida or Florida Agricultural & Mechanical University; (2) aged 18 to 21; (3) able to speak, read, and write English at the seventh grade level to respond to questions; and (4) able to provide informed consent. Students who attend a public university in the state of Florida are required to read and speak English. Therefore, it was expected that very few subjects would be lost as a result of inability to communicate in English. All respondents' e-mail addresses were placed into a lottery for a cash prize of \$200.

Procedures

After obtaining Institutional Review Board (IRB) approval from both universities, the validated instruments to measure study variables were transferred [transcribed by the PI] from the paper version to an electronic version using the Ultimate Survey software ® (Prezza Technologies, 2007), an online survey software. This program is designed to distribute electronic recruitment messages with survey links, via e-mail, to a large volume of recipients. An additional feature of the software was the ability to track responses and invitation distribution. A user name and password for constructing and revising the survey was provided only to the principal investigator. The electronic survey was piloted with two undergraduate classes and several graduate students at the USF College of Nursing and College of Public Health. Revisions were made based on feedback received from the pilot groups.

Human Subjects Research

Risks to subjects. The threat to human subjects was minimal as participation in this study was voluntary, informed consent was obtained, and all researchers completed the Human Subjects Protection Certification. USF and FAMU Institutional Review Boards (IRB) reviewed and approved the research proposal prior to initiation of the study. Moreover, no deception was used, and researchers clearly explain the purpose of the study and how the results would be disseminated. No identifying information was reported. To maintain

confidentiality and privacy, all information was protected either by locked cabinet, password protected computers or secure computer networks.

Recruitment and consent procedures. After ensuring participant eligibility via university registrars, a link to the survey was provided using e-mail. All participants completed the standardized survey once, which had an estimated completion time of 30 minutes. The consent form was embedded in the online survey and individuals had to agree (by selecting a box on the web page to either decline or accept participation) in order to proceed to the survey questions.

Potential risk/benefits: The risks associated with participation in this study were low. There are no known risks of physical, mental, or social injury to respondents. All efforts were taken to maintain confidentiality of the participants. Time constraint was assessed as a minimal risk that may occur when taking the survey, but participants were informed that withdrawal from the study at anytime was an option.

Procedures for minimizing and protecting against potential risks: Participants were recruited on a voluntary basis. Each participant was given an electronic description of the study. Participants were free to withdraw from the study at any time without penalty. Participants could take the survey at a time and place that was most convenient to them. The PI completed the National Institute of Health (NIH) program in Human Participant Protection Education for Research Teams and the certification for Health Insurance Probability and Accountability Act (HIPPA). To protect confidentiality, all subjects were assigned

a code, which was referenced when analyzing data. Analysis and findings will be submitted for publication. However, no individual will be identifiable. The findings of this study are made available to any study participant if requested. Only the PI will have access to data and the data codes.

Data Collection

Electronic mail addresses of the target population were obtained from the USF and FAMU registrar's office. The Dillman (2007) method was employed to ensure maximal response rate [see *Figure 2*]. Age-eligible female students could receive a maximum of four email contacts; the second contact was 7 days after the first, and the third and fourth contacts followed in 7 day increments.

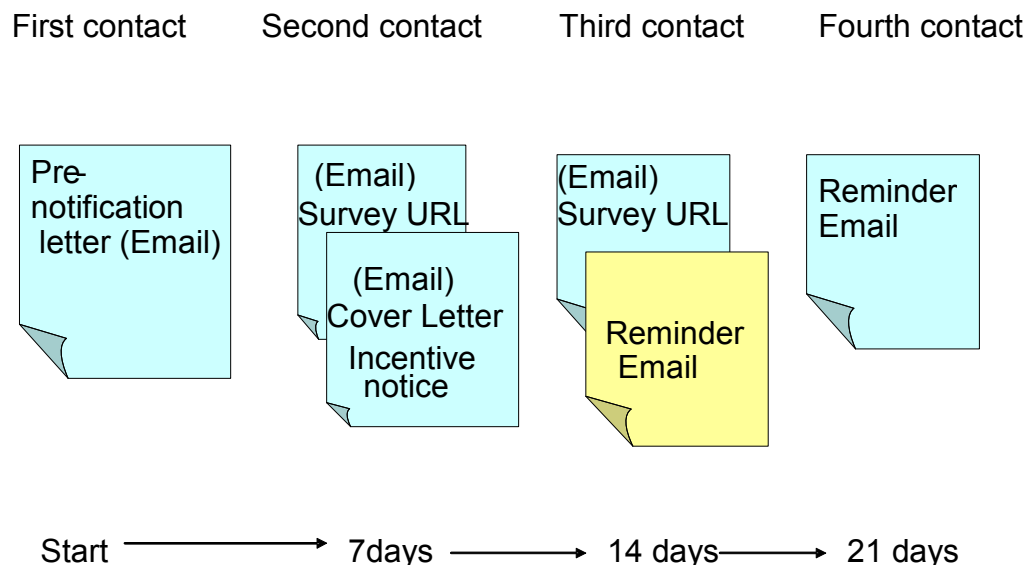


Figure 2 Data Collection Process (Dillman, 2007)

Data Collection Procedures

Participants could complete the survey using any computer with internet access. All respondents were required to give informed consent, which was embedded as a prerequisite for taking the online survey (See *Appendix A*). Non-randomized questionnaire items were a result of Ultimate Survey® software restrictions. The order of the surveys was as follows: Demographics, AIDS Knowledge Test; Safer Sex Communication Scale, the Parent and Peer Influence Scale, the Parent-Adolescent Communication Scale, the Partner Communication Scale (PCS), and the Sex and AIDS Communication Measure.

Measures

Measures for Environmental Factors and Sexual Decision-Making

AIDS Knowledge Test was used to determine the amount of practical knowledge that adolescents have regarding AIDS risk behavior. The revised instrument is a 24-item tool that was derived from the *AIDS Risk Knowledge Test* (Kelly, St. Lawrence, Hood, & Brasfield, 1989; St. Lawrence, 1993). The measure has been normed in gay men, heterosexual college students, African American women, and adolescents (St. Lawrence, Wilson, Eldridge, Brasfield, & O'Bannon, 2001). External validity evidence was obtained by correlation and intervention studies. The responses are dichotomous (yes/no answers) indicating agreement or disagreement with the item and correct responses were summed to a total score.

The assumption of interval level measurement was violated; however statisticians have asserted that using ordinal instead of interval level measurement will not prevent valid statistical inferences (Olobatuyi, M., 2006). The original 40-item AIDS Risk Knowledge Test, developed by Kelly, St. Lawrence, Hood, & Brasfield(1989), a Kuder-Richardson formula (K-R 20) reliability coefficient of .74 and Spearman-Brown split-half reliability coefficient of .73 was calculated. In a study, using the revised 24-item AIDS Risk Knowledge Test, the standardized Cronbach's alpha was .68 (St. Lawrence, 1993; St. Lawrence, Wilson, Eldridge, Brasfield, & O'Bannon, 2001). The Cronbach's alpha and K-R20 for this study was .259 and Spearman-Brown split-half reliability was .264, which item deletion would not improve. An item total was calculated to evaluate the average correct response for each question (See *Table 5*). The scale is provided in *Appendix B*.

Table 5
Item total correlations for the AIDS Knowledge Scale (N=835)

Question #	Mean	SD
1	.99	.091
2	.92	.274
3	.86	.345
4	.98	.128
5	.98	.128
6	.98	.128
7	.99	.109
8	.98	.128
9	.98	.128
10	.89	.310
11	.75	.435*
12	.57	.496*
13	.87	.334
14	.97	.174
15	.78	.412*

Table 5 (cont.)

Item total correlations for the AIDS Knowledge Scale (N=835)

Question #	Mean	SD
16	1.00	.069
17	.98	.128
18	.79	.408*
19	.89	.307
20	.97	.157
21	.96	.192
22	.75	.431*
23	.76	.426*
24	.93	.248

*The Cronbach's alpha for items (N=6) with mean scores of <70 was .186

The Parent-Adolescent Communication Scale (PACS). The PACS is composed of five (5) items to assess adolescents' self-reported frequency of communicating about sexually related topics with their parents (Sales et al., 2006). The five (5) items specifically asked the following: *In the past 6 months, how often have you and your parent(s) talked about the following things: (1) sex, (2) how to use condoms, (3) protecting yourself from sexually transmitted diseases (STDs), (4) protecting yourself from the AIDS virus, and (5) protecting yourself from becoming pregnant?* Each item required a response based on a 4-point frequency scale: 1 (never), 2 (rarely), 3 (sometimes), and 4 (often). All items were coded so that higher values indicated more frequent parent-adolescent communication. The Cronbach's alpha at baseline was .88; 6-month follow up .89 and 12-month follow up .90; Test-Retest reliability at 6-months $r=.58$ ($p < .001$) and 12-months $r=.53$ ($p < .001$) (Sales, J. et al, 2006). In this study, the Cronbach's alpha was .897. The scale is provided in *Appendix C*

Partner Communication Scale (PCS). The PCS is composed of five (5) items that assess adolescents' frequency of communicating with a male sex partner (Milhausen et al., 2006). The five (5) items specifically asked the following: *During the past 6 months, how many times have you and your sex partner discussed (1) how to prevent pregnancy, (2) how to use condoms, (3) how to prevent the AIDS virus, (4) how to prevent STDs, and (5) their male partner's sex history?* Each item required a response based on a 4-point Likert type scale: 0 (never), 1(sometimes/1-3 times), 2 (often/4-6 times), and 3 (a lot/7 or more times). All items were coded so that higher values indicated more frequent sexual communication. Cronbach's alpha was .80 (Sales, J. et al, 2006). In this study, the Cronbach's alpha was .864. The scale is provided in *Appendix D*

Sex and AIDS Communication Measure assesses communication system messages. A revised 38-item test was employed and psychometrics were generated after data collection. The primary objectives for using this instrument were to appraise overall exposure to major forms of mass media and evaluate exposure to AIDS information via communication systems. Participants reported overall exposure to forms of mass media in hours [0-24 hours] or weeks [0-7 days]. An example of questions include: (a) About how many hours during an average day do you spend watching television? (b) During an average week, how many days do you listen to the radio (Hofstetter, C., Hovell, M., Myers, C., et al., 1995)?

When reporting the number of exposures to AIDS content and AIDS risk factors, the following questions were asked (a) during the last month/ last three months items seen or heard on TV, in newspapers, in magazines, and on the radio regarding AIDS, IV drug use, and condoms; (b) the number of conversations during the last month with friends and family members about sex, risks of AIDS, risks of IV drug use, and condoms; and (c) how often respondents talked to friends and family about issues such as dating, pregnancy, how to prevent AIDS, buying condoms, and IV drug use (Hofstetter, et al., 1995). Each item required a response based on a 5-point Likert-type scale: 0 (never) 1 (once or twice ever), 3 (several times a month), 4 (few times a week), and 5 (almost daily). T tests were computed and compared to establish statistical significance (Hofstetter et al., 1995).

Author permission afforded the addition of questions to assess adolescents' preferred communication system method and the most influential communication systems on sexual decision-making. Determining the preferred communication method for receiving information about sex, HIV or AIDS, STDs', using condoms, postponing intercourse, pregnancy, and dating was measured by allowing participants to select one communication system variable (television, newspaper, magazine, radio, parents, partner, peers, Internet) for each topic. Ranked from 1-8, with a general question that asked which communication systems impact your sexual decision making (1 = most influential and 8 = least influential), behavior was assessed. Only items that were significantly ranked

first are reported. Behavior was an ordinal measure and violated the assumption of interval level measurement. In this study, Cronbach's alpha was calculated for each section of the survey (section 1: .467, section 2: .898; section 3: .757; section 4: .835; and section 5: .830). The scale is provided in *Appendix E*.

The Parent and Peer Influence Scale. This 17-item scale was developed to address four topics/subscales of peer and parent influence which include general values and basic beliefs, dating and sexuality, alcohol and substance use, and political beliefs (Werner-Wilson, R., & Arbel, 2000). Based on a 7-point Likert scale ranging from "Disagree very much" to "Agree very much", items were coded so that higher scores represented peer influence and lower scores indicated family influence. Cronbach's alpha is .75; however the coefficient alpha for the subscales were very low and not reported by the authors (Werner-Wilson, R., & Arbel, 2000). The Cronbach's alpha in this study was .785. The scale is provided in *Appendix G*

Measures for Person Factors

Safer Sex Communication Measure is an 11-item scale that contains four subscales, including perceived risk, self-efficacy, condom use intentions, and assessment of the participants' comfort when discussion safer sex or condom use with a sex partner (St. Lawrence, Eldridge, Brasfield, & O'Bannon, 2001). Only the two single-item measures that assess perceived risk and self-efficacy for HIV/AIDS acquisition were used in the study. Questions included were: (1) "What is your risk for getting HIV/AIDS"? HIV risk-reduction is a 4-point scale

with 0-no risk and 4- high risk; (2) Self-efficacy- a 4 point scale with 1-not much and 4-a lot. Question: “How much can you do to keep from getting AIDS” (St. Lawrence, Eldridge, Brasfield, & O’Bannon, 2001)? The scale is provided in *Appendix F*.

Data Analyses Plan

The primary aim of the study was to test associations among communication systems, self-efficacy, perceived risk, HIV/AIDS knowledge, and sexual decision-making in older adolescent females. The survey data retrieved from participants were exported, in bulk, from the Ultimate Survey® program and analyzed using Statistical Packages for the Social Sciences (SPSS)®, a quantitative software program (SPSS 12.0, 2003). The data system was password protected on a dedicated computer to ensure confidentiality with data entry, management, and analysis. Inconsistent data were assessed and data descriptions were verified. Demographic data were reported using frequencies and descriptive statistics. Regression coefficients were calculated and applied to the model [employing the principles of regression analysis] to determine the associations between communication systems and behavior addressed by the questions below:

1. What are the associations among *demographic variables* (age, race/ethnicity, education, socioeconomic status) in young women and the types of *communication systems* preferred (media and interpersonal)?

2. What are the associations among the types of *communication systems* preferred by young women and *person factors* (HIV/AIDS self-efficacy, perceived risk, and knowledge)?
3. What are the associations among the types of *communication systems* preferred by young women (media, print, interpersonal) and behavior (sexual-decision making)?
4. What are the associations among young women's *person factors* (HIV/AIDS self-efficacy, perceived risk, knowledge) and behaviors (sexual decision-making)?

Statistical methods. Multiple regression analysis was used to isolate theorized inferences and calculate the correlations. To properly execute multiple regression, several assumptions were considered, which include: (1) relations among variables are linear, have homoscedasticity (the variance is of the error term is constant) and have no perfect collinearity ("no independent variable is perfectly linearly related to one or more of the other independent variables in the model"; (2) residuals are not correlated; (3) each independent variable is uncorrelated with the error term; (4) each set of values for the independent variable is normally distributed ; (5) variables are measured on an interval scale without error and (6) for each set of values for the independent variables the mean value of the error term is zero (Berry, W. & Feldman 1985, 10). Based on the proposed model (*Figure1*) a set of structural equations were derived and calculated. Chronologically, the data were analyzed as follows: (1) Calculation

of regression coefficients for the basic model by performing a multiple regression analysis; (2) Test for “goodness of fit” to determine the model’s practical significance; and (3) Interpretation of the results by assessing statistical significance using the F-values (Achen, C., 1982; Leclair, S., 1981; Schroeder, L., Sjoquist, D., & Stephan, P., 1986).

There are both strengths and weaknesses associated with the methodological application of multiple regression. The strengths of multiple regression primarily include its ability to study effects of multiple independent and dependent variables, measure the magnitude of an effect, “forecast what a particular effect would be, but for an intervening event” (Rubinfeld, D. & Bridges, R., 181), and provide an illustration of hypothesized relationships that can be converted into equations (Schroeder, L., Sjoquist, D., & Stephan, P., 1986; Achen, C., 1982; Stage, F., Carter, H., & Nora, A., 2004). However, exposed limitations of using multiple regression that have surfaced are the potential to incorrectly estimate the response in the dependent variable to changes in an independent variable due to omission or inclusion of irrelevant variables, execute assumption violations that render inaccurate results, improper use of linear vs. nonlinear functions, restriction of nominal and ordinal measures, and it is not an accurate means of establishing causality (Achen, C., 1982; Nora, A., 2004; Schroeder, L., Sjoquist, D., & Stephan, P., 1986). Multiple regression is a technique used to infer functional relationships between variables (Achen, C., 1982; Nora, A., 2004; Schroeder, L., Sjoquist, D., & Stephan, P., 1986).

Summary of Chapter Three

Chapter Three detailed the research process employed by this study. The next chapter will discuss study results concerning the preferred communication system and its association with person factors and sexual decisions. See *Table 6* for definitions of statistical terms used in the next chapter.

Table 6

Definition of Statistical Terms (Olobatuyi, M, 2006)

Term	Definition
Regression	An analysis of correlating mathematical relationships.
Standardized coefficient (β)	Used to generalize to a specific population or compare the relative importance of independent variables on the same dependent variable within a population.
Assumptions:	Rules guiding the use of any statistical techniques.
Regression coefficients	Help to measure the magnitude of change in each dependent variable predicted by the independent variable in the model.
Residual/Error (E)	The percentage of variance in each dependent variable due to outside variables not included in the model. $1-R^2$
Direct effects	The influence of one variable on another that is not mediated by any other variable in a model.
Endogenous variables	Mediated variables whose variation is explained by other exogenous or endogenous variables.
Exogenous variables	Predictor variables whose variability is assumed to be determined by causes outside the model.
Spurious	Result due to common causes
Unanalyzed	Result due to correlated causes
Statistical Significance	A value or a measure of a variable has statistical significance when it is “significantly” larger or smaller than would be expected by chance alone.
Parsimonious model	The best statistical model with the fewest parameters.

Table 6 (continued)

Definition of Statistical Terms (Olobatuyi, M, 2006)

Term	Definition
	The closer the Goodness of index [range 0-1.0] (in this study represented by Root Mean Square) is to 1.0 the better the fit.
Standardized Root Mean	(SRMR) the average discrepancy between the observed and the expected correlation across all parameter estimates. (Joreskog and Sorbom 1993a).
Root Mean Square Error of Approximation	(RMSEA) an adjustment for parsimony in the model.

Chapter Four

Results

Chapter Four presents the analyzed data. The following sections include a demographic profile of the sample, data quality, and data analysis that was implemented to address each research question.

Participants

Eight hundred sixty-six female students attending USF and FAMU participated in the study. Of the 859 respondents who indicated age, the mean was 19.77(SD = .900; range 18 to 21 years). The majority of respondents (68.5%) self reported as White (n = 593) and most (57.6%) were single but in a relationship (n = 495). Income of participants' mothers (n = 740) and fathers (n = 717) were evaluated independently; generally, students did not know their parents' annual income (mother 27.4%; father 32.1%) or refused (mother 11.8%; father 10.5%) to answer the question. However, 13.5% of fathers were reported to earn >\$100,000 annually. See *Table 7* for a demographic composition of the sample.

Table 7

Socioeconomic Characteristics of Female College Student Respondents

Characteristic	N	(%)
Age	859	
18	63	(7.3)
19	279	(32.5)
20	308	(35.9)
21	209	(24.3)
Year in School	866	
Freshman	54	(6.3)
Sophomore	358	(41.7)
Junior	366	(42.7)
Senior	76	(8.9)
Refuse	4	(0.5)
Race/Ethnicity	866	
White	593	(68.5)
Black	97	(11.2)
Asian	34	(3.9)
NH/PI*	5	(0.6)
AI/AN**	3	(0.3)
Other	100	(11.5)
Unsure	5	(0.6)
Decline	15	(1.7)
Are you Latina/Hispanic	859	
Yes	122	(14.2)
University		
FAMU	10	(1.2)
USF	845	(98.4)
Refuse	4	(0.5)
Marital Status	866	
Single (not in a relationship)	344	(40.0)
Single (In a relationship)	495	(57.6)
Married	16	(1.9)

Table 7 (Continued)

Demographic Characteristics of Female College Student Respondents

Characteristic	N	(%)
Divorced	1	(0.1)
Refuse	3	(0.3)
Income (annually)		
Self	852	(98.4)
\$1-\$4,999	329	(38.6)
\$5,000-\$9,999	173	(20.3)
\$10,000-\$14,999	102	(12.0)
\$15,000-\$19,999	48	(5.6)
\$25,000-\$29,999	12	(1.4)
\$20,000-\$24,000	29	(3.4)
\$30,000-\$34,999	7	(0.8)
\$35,000-\$39,999	6	(0.7)
\$40,000-\$44,999	2	(0.2)
>\$50,000	7	(0.8)
Mother	740	(85.5)
\$1-\$4,999	26	(3.5)
\$5,000-\$9,999	16	(2.2)
\$10,000-\$19,999	27	(3.6)
\$20,000-\$24,999	31	(4.2)
\$25,000-\$29,999	29	(3.9)
\$30,000-\$34,999	42	(5.7)
\$35,000-\$39,999	37	(5.0)
\$40,000-\$44,999	30	(4.1)
\$45,000-\$49,999	16	(2.2)
\$50,000-\$54,999	27	(3.6)
\$55,000-\$59,999	17	(2.3)
\$60,000-\$64,999	18	(2.4)
\$65,000-\$69,999	10	(1.4)
\$70,000-\$74,999	15	(2.0)
\$75,000-\$79,999	12	(1.6)
\$80,000-\$84,999	16	(2.2)
\$85,000-\$89,999	11	(1.5)
\$90,000-\$94,999	14	(1.9)
\$95,000-\$99,999	4	(0.5)
>\$100,000	52	(7.0)
Unknown	203	(27.4)

Table 7 (Continued)

Demographic Characteristics of Female College Student Respondents

Characteristic		N	(%)
Refuse		87	(11.8)
Father		717	(82.8)
	\$1-\$4,999	10	(1.4)
	\$5,000-\$9,999	5	(0.7)
	\$10,000-\$19,999	9	(1.3)
	\$20,000-\$24,999	24	(3.3)
	\$25,000-\$29,999	17	(2.4)
	\$30,000-\$34,999	27	(3.8)
	\$35,000-\$39,999	21	(2.9)
	\$40,000-\$44,999	22	(3.1)
	\$45,000-\$49,999	18	(2.5)
	\$50,000-\$54,999	26	(3.6)
	\$55,000-\$59,999	13	(1.8)
	\$60,000-\$64,999	19	(2.6)
	\$65,000-\$69,999	15	(2.1)
	\$70,000-\$74,999	11	(1.5)
	\$75,000-\$79,999	16	(2.2)
	\$80,000-\$84,999	22	(3.1)
	\$85,000-\$89,999	14	(2.0)
	\$90,000-\$94,999	17	(2.4)
	\$95,000-\$99,999	9	(1.3)
	>\$100,000	97	(13.5)
	Unknown	230	(32.1)
	Refuse	75	(10.5)

*Native Hawaiian/Pacific Islander; **American Indian/Alaska Native

Preliminary Analysis

Data quality. A total of 866 students completed the survey, which was delineated by each university as follows: University of South Florida had a response rate of 12% from 7012 successfully delivered electronic recruitment documents. Florida A & M University had a response rate of approximately 1% from 1213 delivered e-mails. No cases were deleted from the analysis. Missing data varied with each question. None of the subjects presented as outliers, had $\geq 25\%$ of the responses missing, or were indiscernible, exempting subjects from exclusion. For questions that assessed daily and weekly exposure to media, a total of twenty-six outliers were substituted with either a 7, to represent days of the week, or 24, to represent the number of hours in a day.[daily exposure to communication systems: 25 data points were changed; hourly exposure to communication systems: 1 data point was changed]. Each variable in the path diagram had subcategories that were used to determine associations between predictor and outcome variables. (See *Table 8*).

Table 8

Study Variables

Variable Name	Measures	# Items	Descriptive Statistics
Demographic variables			Range; Mean, (SD)
Age	What is your age?	1	18-21; 19.8(.90)
Race	How would you describe yourself?	1	See Table 7
White			
Black			
Asian			
NH/PI			
AI/AN			
Other			
Unsure			
Decline			
Hispanic	Are you Hispanic or Latino?	1	See Table 7
Income			See Table 7
Self	What is your annual income?	1	
Mother	What is your mother's annual income?	1	
Father	What is your father's annual income?	1	
Communication Systems			
Peer Influence	Parent and Peer Influence Scale	17 (.79)	1=disagree very much, 7=agree very much; 17-119; 59.9(13.1) ^a
Parent communication	PACS	5 (.88)	0=Never, 3=Often; 0-15; 3.4(3.9)
Partner communication	PCS	5 (.86)	0=Never, 3=A lot; 0-15; 5.5(4.4)
Media Exposure	Sex and AIDS Communication Measure	38 (.47-.90)	
TV ^b			0-12; 3.8(2.9)
TV (hour)			0-24; 3.4(3)
Print ^b			0-24; 2.6(3.7)
Print (hour)			0-20; 2.4(2.1)
Print (day)			0-14; 1.6(2.7)
Internet ^b			0-12; 2.0(2.7)
Internet (hour)			0-24; 4.1(2.6)
Internet (day)			1-7; 6.8(.66)
Radio ^b			0-12; 1.2(2.1)
Radio (hr)			0-24; 3.64(3.5)
Radio (day)			0-7; 4.9(2.5)
Communication Preference	Sex and AIDS Communication Measure	38	
TV			0-7; 0.97(1.7)
Newspaper			0-7; 0.11(.47)
Magazine			0-7; 0.64(1.4)
Radio			0-4; 0.04(.29)
Parent			0-7; 0.72(1.3)
Partners			0-7; 0.68(1.2)
Peers			0-7; 1.3(1.5)
Internet			0-7; 1.7(2.1)
Books			0-7; 0.85(1.5)
Person Factors			
HIV/AIDS Self-Efficacy	Safer Sex Communication Measure	38	0=No risk, 3=High risk; 2.88(.378)
HIV/AIDS Perceived Risk	Safer Sex Communication Measure	38	0=Nothing, 2=A lot; .17(.432)
HIV/AIDS Knowledge	AIDS Knowledge Test	24 (.26)	1=True, 2=False; 15-24; 21.5(1.6)

Table 8 (Continued)
Study Variables

Variable Name	Measures	# Items
Outcome Variable: Behavior	Sex and AIDS Communication Measure	38
<i>Sexual decisions based on</i> ^c N=43(5%)	TV	
	Newspaper	N=36(4.2%)
	Magazine	N=22(2.5%)
Radio		N=23(2.7%)
	Parent	N=244(28.2%)
	Partner	N=326(37.6%)
	Peer	N=106(12.2%)
	Internet	N44 (5.1%)

^a q1, q4, q7, q8, q9, q11, & q17 (See Appendix C) were reverse coded to reflect peer influence verses parental influence. The range was 17-119 with a midpoint of 68. A mean below 68 would indicate more parental influence and a mean above 68 would indicate low parental influence.

^b Exposure to media in the past three months that is HIV/AIDS, IV drug use, and condom specific.

^c Ranked 1st

Descriptive Statistics for Outcome Variables

Variables that constitute communication systems were assessed to determine the average number of *hours during a day* and *days during the week* participants patronized a specific media. On average, older adolescent and young adult females used the internet 4.07 hours/day, listened to music 3.64 hours/day, were exposed to some form of print (newspaper and magazine) 3.6 hours/day, watched television 3 hours/day, and read 2.0 hours/day. Participants reported spending 6.72 days per week online. Overall, 16.31 hours of a 24-hour day, older adolescent females were exposed to some form of mass media.

For sexual decision-making, media variables that ranked first were analyzed to determine associations between communication systems and behavior. Communication system factors that influenced the sexual decision-making of older adolescents and young adult females were ranked in descending

order as follows: partners, parents, peers, internet, television, magazines, newspapers, and the radio.

Direct Effects

Direct effects, defined in Table 6, for each research question are explained in content and diagramed in *Figure 7 in the appendixes*.

Goodness of Fit and Model Parsimony

Model adequacy is typically determined by a Goodness of Fit Index (GFI) i.e. Chi-square X^2 values (Olobatuyi, M, 2006). However, because Chi-square increases with sample size, the null hypothesis is almost always rejected. To reduce the potential for inaccurately rejecting the null hypothesis ($n = 866$), the residual-based fit index (error terms) was employed in this study to determine model fit. Small error terms indicate a good fit of the model and vice versa (Olobatuyi, M, 2006). Good fitting models have small Root Mean Square (RMR) or Standardized Root Mean Square (SRMS) with values of 0 being a perfect fit, .08 or less being adequate, and scores less than .05 are considered to be good (Olobatuyi, M, 2006; Jaccard, and Wan, 1996) [Applicable to Q1-Q4].

Insignificant standardized beta coefficients (p values $>.05$) were purged from the model because they are indicative of an unacceptable model fit, yet they have been listed in Appendixes H-K (Olobatuyi, M, 2006).

Testing of Specific Aim

Question 1: What are the associations among demographic variables of young women and the types of communication systems preferred?

A series of multiple linear regressions were applied to test the associations among demographic variables (exogenous) and communication system variables (endogenous). See *Table 8* for a list of study variables. Regression coefficients were estimated by simultaneous entry of predictors (demographic variables) for each dependent variable (communication systems). Demographics accounted for a small amount of the variance relative to communication systems (R^2 ranged from .008-.117), with most [11.7%] represented by hourly internet usage. However, the significant ($p < .05$), communication systems that were directly associated with demographic variables comprised: peer influence ($F=2.987$, $p \leq .05$), parent communication ($F=2.222$, $p \leq .05$), hourly internet exposure ($F=6.918$, $p \leq .05$), hourly (F=2.310, $p \leq .05$) and daily ($F=3.024$, $p \leq .05$) radio exposure, and a preference for radio as a media source ($F=2.290$, $p \leq .05$).

More specifically, there was a negative relationship between peer influence for Hispanic participants and a positive relationship between peer influence and participants who reported their race as “unsure”). NH/PI and Asian variables both had direct negative effects on parent communication. Maternal income was negatively associated with partner communication. NH/PI and Blacks had a positive relationship and age had a negative relationship on hourly internet exposure. NH/PI had a positive relationship on hourly radio exposure. Daily radio exposure was directly impacted by age (+) and an unsure (-) status for race and ethnicity. Lastly, a preference for sexual health information to be

communicated via the radio was directly affected by those who declined to confer race. See *Appendix H* for Q1 standardized betas ($N = 866$). See *Figure 3* for a parsimonious model of Q1.

Demographics

Communication Systems

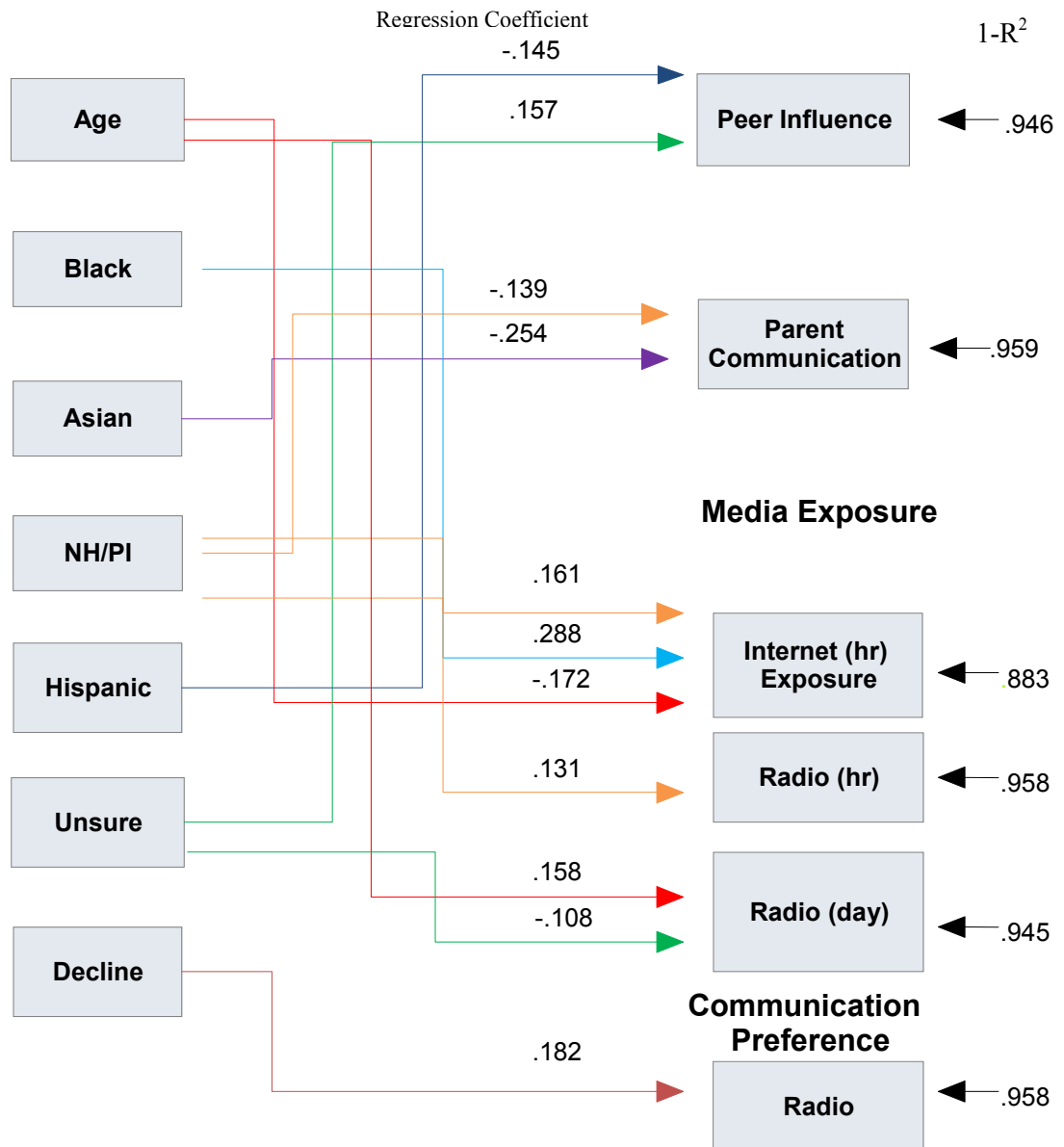
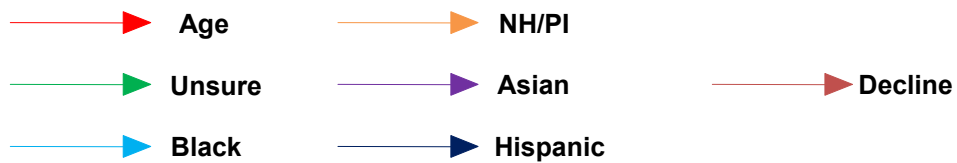


Figure 3. A parsimonious model of Q1

Key:



Question 2: What are the associations among the types of communication systems preferred by young women and person factors (HIV/AIDS self-efficacy, HIV/AIDS perceived risk, and HIV/AIDS knowledge)?

Multiple linear regression analysis was used to determine relationships that may exist between communication variables and person factors. See *Appendix I* for Q2 standardized betas. The predictor variables (communication systems) accounted for a small amount of variance in the outcome variables (person factors) (R^2 range .021-.112). HIV/AIDS perceived risk explained the most variance ($R^2=.112$), followed by HIV/AIDS knowledge, and HIV/AIDS self-efficacy ($R^2=.021$). Communication systems that were positively associated with perceived risk ($F=3.486$, $p\leq.05$), included: peer communication parent communication, and an affinity for television as a media resource. On the contrary, daily print and internet (hr) exposure both were negatively associated with perceived risk. Communication systems that were negatively associated with HIV knowledge ($F=2.761$, $p\leq.05$), included: Hourly internet and radio exposure, and a media preference for television, newspapers, and books. Daily radio exposure was the positive associated variable with HIV/AIDS knowledge.

Although the model summary was not significant for communication systems and self efficacy (model summary: $F=.837$, $p>.05$), a communication system that was negatively associated with self efficacy was a preference for sexual health information in magazines. Insignificant regression coefficients ($p>.05$) were excluded to create a parsimonious model; and to efficiently depict

the associations between communication systems and person factors. See *Figure 4* for a parsimonious model depicting Q2.

Communication Systems

Person Factors

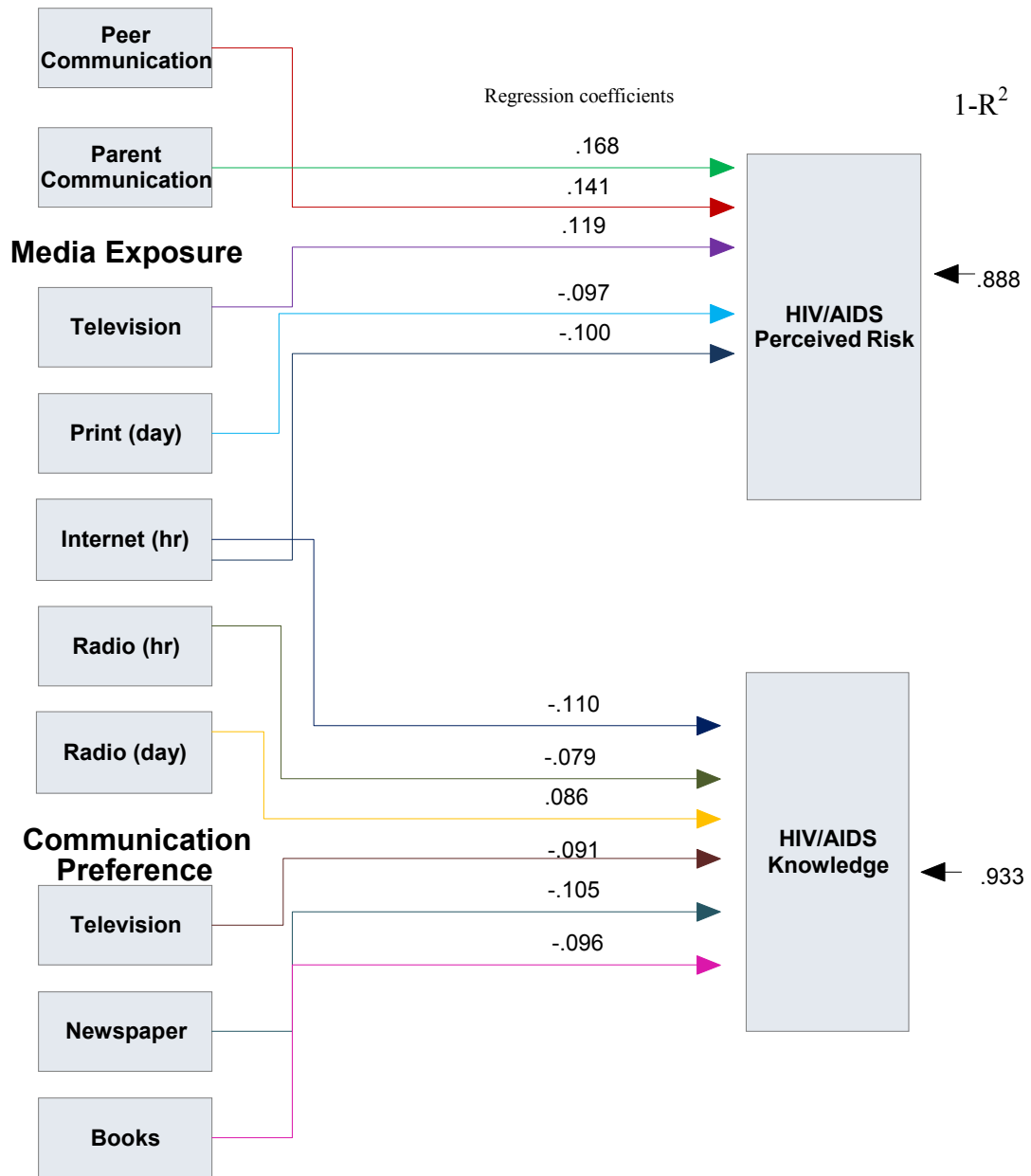
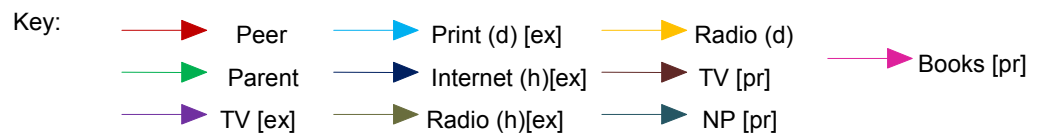


Figure 4 Parsimonious Model for Q2



Question 3: What are the associations among the types of communication systems preferred by young women and behavior (sexual decision making)?

Multiple linear regression analysis was used to test the associations among communication systems and behavior. (See *Appendix J* for Q3 standardized betas). Regression coefficients were derived by regressing all the contextual variables (communication system variables) onto the outcome variable (Behavior: Ordinal data depicting the media source that was self-reported to have the most impact on older adolescents' sexual decision-making). Communication system variables accounted for between 2.3% and 21.5% of the variance in the outcome variable, sexual decision-making ($R^2 = .023-.215$). Among the communication systems variables, parent communications provided the greatest explanation for the variance in sexual decision-making ($R^2 = .215$), followed by newspapers ($R^2 = .191$), peers ($R^2 = .118$), and television ($R^2 = .109$). The communication systems that were significantly associated with sexual decision-making (behavior) included: peer communication, parent communication, partner communication; media exposure to television, print (hours/days), and a preference for newspapers, magazines, books, television, peers, partners, and parents as media sources. Model summaries for significant outcome variables include: Television ($F=4.737$, $p \leq .05$), Parent ($F=10.602$, $p \leq .05$), Partner ($F=3.772$, $p \leq .05$), Peer ($F= 5.194$, $p \leq .05$), and Internet ($F=3.267$, $p \leq .05$). Of the communication system variables that are associated

with sexual decision-making and communication systems, interpersonal relationships verses media explain the most variance. Insignificant regression coefficients were excluded to create a parsimonious model; and to efficiently depict the casual relationships between communication systems and behavior. See *Figure 5* for a parsimonious model of Q3.

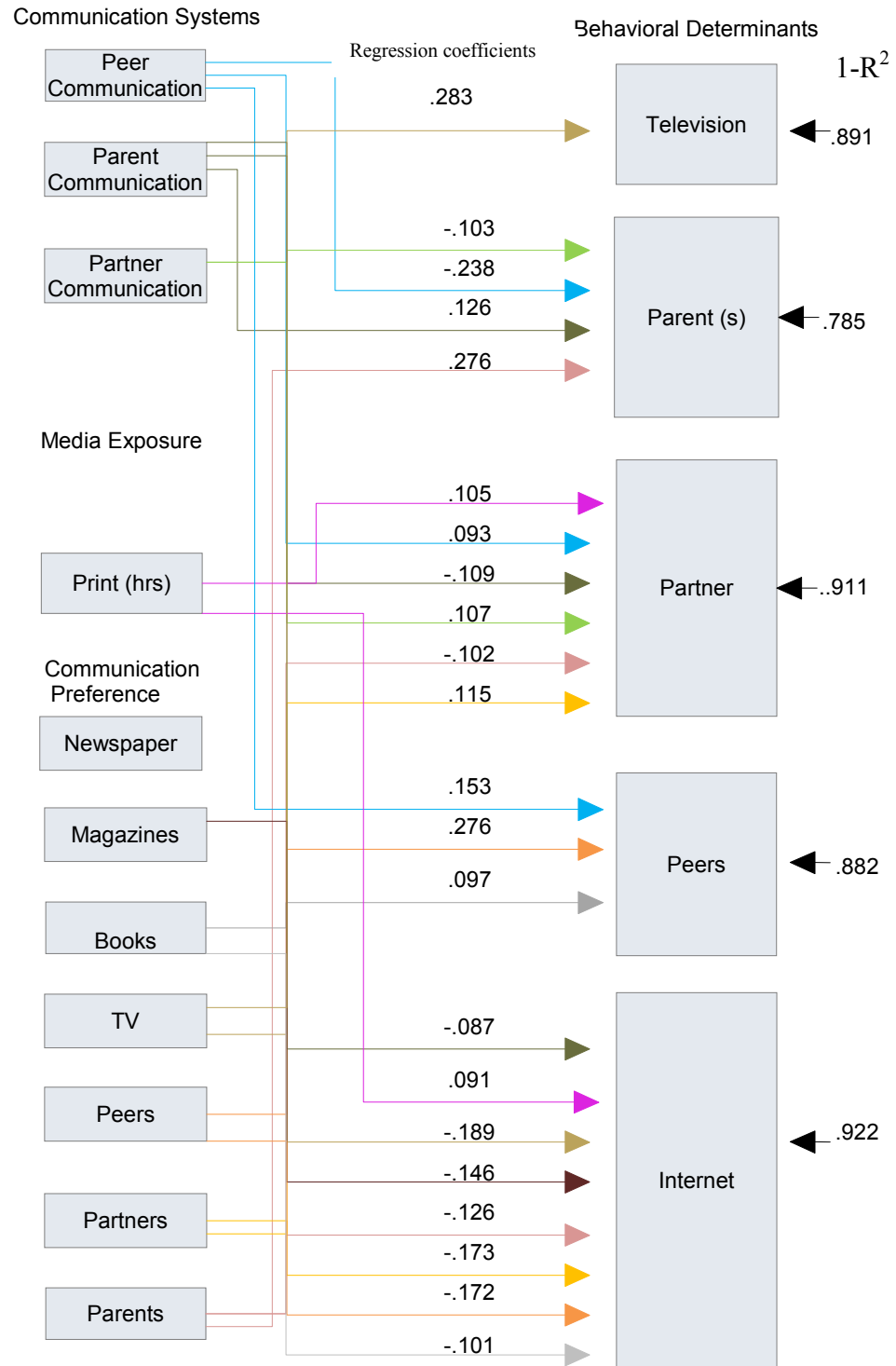
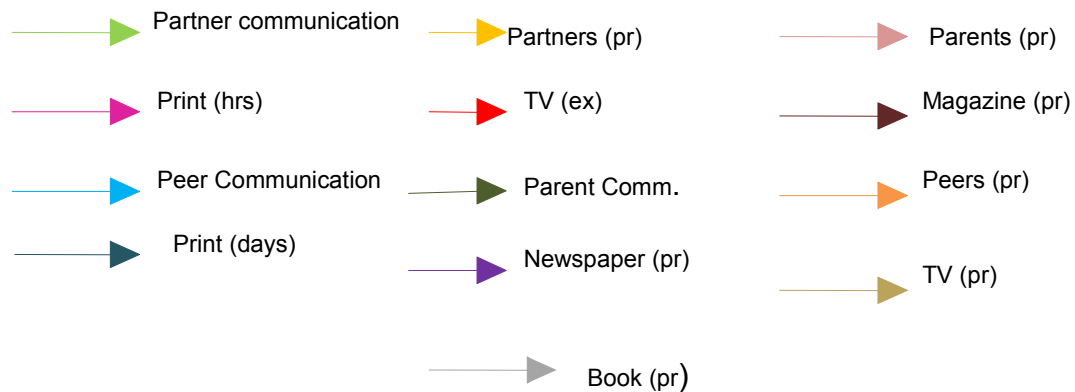


Figure 5 Parsimonious model of Q3

Key for Figure 5



Question 4: What are the associations among young women's person factors and behaviors?

Multiple linear regression analysis was used to test the associations among person factors and behavior. (See *Appendix K* for Q4 standardized betas). The amount of variance accounted for by the predictor variables ranged from $R^2 = .001$ to $.018$. Regression coefficients were derived by regressing all the contextual variables (person factors) onto the outcome variable (Behavior: Ordinal data depicting the media source that was self-reported to have the most impact on older adolescents' sexual decision-making). Perceived risk was solitary as a contributor variable significantly associated with sexual decision-making (behavioral determinants) [Model summary: Parent ($F=3.744$, $p \leq .05$) and Radio ($F= 2.959$, $p \leq .05$). Insignificant regression coefficients ($p \geq .05$) were excluded to create a parsimonious model; and to efficiently depict the casual relationships between communication systems and behavior. See *Figure 6* for a

parsimonious model of Q4. See *Figure 7* (appendixes) for combined diagram of Q1-Q4.

Person Factors

Behavior: Sexual Decision-Making

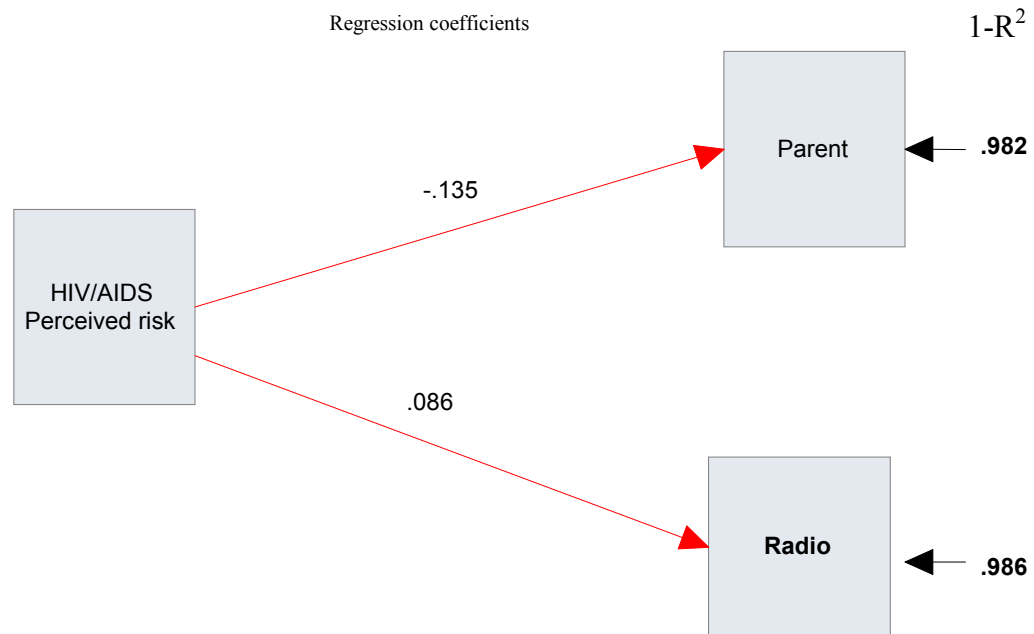


Figure 6 Parsimonious model for Q4

Key:

→ HIV/AIDS Perceived risk

Summary of Chapter 4

The data was analyzed to determine the associations between *demographic variables* (age, race/ethnicity, education, socioeconomic status) in young women and the types of *communication systems* preferred (media and interpersonal); the association among the types of *communication systems* preferred by young women and *person factors* (HIV/AIDS self-efficacy, perceived risk, and knowledge); the association among the types of *communication systems* preferred by young women (media, print, interpersonal) and young women *behaviors* (sexual-decision making); and the association among young women's *person factors* (HIV/AIDS self-efficacy, perceived risk, knowledge) and behaviors (sexual decision-making)? Results indicate that there are associations between all proposed constructs that constitute the theoretically derived path diagram. The next chapter will summarize the results of this study.

Chapter Five

Discussion

The impact of communication systems effect on sexual decision-making, HIV/AIDS knowledge, HIV/AIDS self-efficacy, and HIV/AIDS perceived risk in older adolescent and young adult women was not addressed in the literature. The specific aim of the study was to test associations among communication systems, HIV/AIDS self-efficacy; HIV/AIDS perceived risk, HIV/AIDS knowledge, and sexual decision-making in older adolescent females.

The older adolescents and young adult female participants attended the second largest university (USF) or a historically black university (FAMU) in the state of Florida. Recruitment was performed via electronic mail. Eight hundred sixty-six students completed the survey from a total of 8225 invitations. Refusal to participate could not be accurately assessed due to unilateral recruitment methods. The mean age of students was 19.77 and most were classified as juniors. This was a convenience sample from two universities in the south east region of the United States, and information obtained from the study may not be generalized to other populations.

Question 1

What are the associations among *demographic variables* (age, race/ethnicity, education, socioeconomic status) in young women and the types of *communication systems* preferred (media and interpersonal)?

Logistics for each variable were obtained to assess general information about the sample. Participants' average amount of media exposure included: *daily use*-- 4 hours of internet; 3 hours listening to music; 2 hours reading, and 3 hours viewing television; *weekly use*—4 days listening to music; 6 days online; and 3 days reading. On average, students reported that in the *last 3 months* information about AIDS, IV drug use, and condom use was seen on TV several times a month; read in the newspaper and magazines about once a month; heard on the radio once or twice ever; and read on the internet approximately once a month. Parents and other family members were sought for conversations about sex, AIDS, and birth control approximately once per month, only engaging friends in discussions once or twice ever. Overall, students reported that parents had more influence on their decisions with regards to basic beliefs, value systems, sexuality, dating, and alcohol use. Yet, young adult females conveyed low parental communication. In the *last 6 months*, partners were consulted by respondents sometimes (1-3 times) about pregnancy prevention, condom use, STD/HIV prevention and making inquiry of the partner's sex history.

Few components, measured as endogenous demographic variables, were associated with communication systems, namely age and ethnicity. Although the explained variance was minimal ($\leq 11\%$), the internet accounted for the greatest

amount of explained variance. In addition, the internet was associated with age, associated with those who identified as Black and NH/PI descent; and was reported as the most used form of media. With each year of age, hourly internet use decreased; yet, daily radio use increased. When comparing ethnicity, students who reported being Black and NH/PI, hourly internet use increased compared to other forms of communication systems. Greater peer influence and decreased daily radio use was associated with self reporting ethnicity as unsure. The lowest amount of peer influence was associated with being Hispanic. Groups who indicated the least amount of parental communication were Asians and NH/PI. Hourly radio use was increased when associated with NH/PI respondents. Overall, those who declined to reveal ethnicity preferred radio as a source for sexual health topics. The normality assumption must be considered with assessing the NH/PI data. Considering the small sample (NH/PI: N=5) and that the central limit theory does not compensate for error that may not be normally distributed, the findings for NH/PI are vulnerable to a Type II error.

In summary, NH/PI young adult females are less likely to communicate with their parents about sex and are more likely to use forms of mass media to access information.

Question 2

What are the associations among the types of *communication systems* preferred by young women and *person factors* (HIV/AIDS self-efficacy, perceived risk, and knowledge)?

The mean score for perceived risk was .17 (recoded to represent 0 = no risk to 3 = high risk); therefore female young adults reported a minute amount of perceived risk for acquiring HIV/AIDS. Additionally, respondents averaged 2.88 for self-efficacy (recoded to represent 0 = nothing to 3 = a lot) denoting a confidence for their ability to keep from getting HIV/AIDS. Generally, students averaged an 89% on the questions appraising basic HIV/AIDS knowledge.

Perceived risk explained the greatest amount of variance (12%) associated with communication systems. Although baseline data indicated that respondents had diminutive HIV/AIDS perceived risk, but high HIV/AIDS knowledge and self-efficacy, there were variables associated with the promotion or demotion of each construct; however, only significant models are reported. Internet was the most used media informant; unfavorably, it was associated with decreased HIV/AIDS knowledge as did hourly radio use, and preference for TV, newspaper, and books to convey sexual health information. Hourly vs. daily radio use was contradictory, because daily radio use was associated with an increase in HIV/AIDS knowledge. Peer influence, parent communication, and content viewed on TV about HIV/AIDS related topics were associated with increased perceived risk among respondents. However, print exposure and hourly internet use decreased perceived risk. This study asserts that conduits for information transmission contribute to the cognitive development of older adolescents, ultimately demonstrated by actions.

Question 3

What are the associations among the types of *communication systems* preferred by young women (media, print, interpersonal) and behavior (sexual-decision making)?

Behavioral determinants were measured by requesting that respondents report the communication system variables with the most influence on their sexual decisions (1 = most important to 8 = least important). The irregular conversations about HIV/AIDS topics with peers, parents, and partners and sparse content about HIV/AIDS in the media was evidenced in the data.

Interpersonal relationships explained the most variance (parents--22%; partners—12%) when associated with communication systems. Preferring TV as a media source was associated with television having the most influence on sexual decision-making. The amount of parent communication and preferring parents to converse about HIV/AIDS related topic was associated with parents having the most influence on sexual decision-making; conversely, peer influence and partner communication reduced the amount of parental influence on female adolescents' sexual decision-making.

In comparison to parental influences, partner affect on sexual decision-making has an inverse product. Peer influence, a preference for partner(s) to convey information about sexual issues, and partner communication increased the amount of persuasion companions had on female adolescents' sexual decision-making. Exposure to print, reduced parent communication, and preferring parents as a medium for information about sexual content, including

HIV/AIDS, promoted partner influence on sexual decision-making. Peers' ability to impact sexual decision-making was contingent on being influenced more by peers and having an inclination for books and peers as sources of information.

The internet as a behavioral determinant was reduced when associated with parent communication and having a preference for TV, books, magazines, parents, partners, and peers as information sources. Independently, hourly print exposure predicted that internet has an association with sexual decision-making. Overall, parents have the most influence on sexual-decision making when they dialogue with older adolescent females about HIV/AIDS and sexual health, because based on the data and previous studies, adolescents and young adults prefer to hear about sex from their parents (Stattin & Kerr, 2000)

Question 4

What are the associations among young women's *person factors* (HIV/AIDS self-efficacy, perceived risk, knowledge) and behaviors (sexual decision-making)?

The explained variance, when determining the associations between communication systems and behavioral determinants, are inferior to all other models ($\leq .018$). The impact that radio had on sexual decision-making, based on participant response, increased HIV/AIDS perceived risk. Parental influence on sexual decision-making was reduced in older adolescent and young adult females when associated with HIV/AIDS perceived risk. Inferring that as HIV/AIDS perceived risk increases, parents as behavioral determinants are

reduced; however, data shows that this sample of participants had a low HIV/AIDS perceived risk.

Limitations

Although many strategies were used to enhance recruitment, participation was voluntary and the responsibility of being a college student may have deterred individuals. Because the quantitative data rely on participant self report, the validity of results may be lessened. Electronic surveys decrease the ability to ensure the accuracy of participant eligibility. Bias that is relevant to this study includes measurement bias, due to employing self report measures that may have evoked responses that were socially desirable; sampling bias is acknowledged because of omitting males and retaining results from the FAMU [N=10] students. The explanation for preserving FAMU data was to oversample and promote adequate representation of the population (African Americans/Blacks) who is disproportionately affected by HIV and AIDS. Recruitment and data collection were exclusively executed electronically. Based on the low African American response rate at FAMU, other methods of recruitment and survey administration may be needed to improve participation from this population. Another barrier considered with electronic survey distribution was computer software designed to filter e-mails like firewalls and spam blockers, which may have intercepted the electronic correspondence that this study employed for both recruitment and survey administration. An additional sampling bias was recruitment of a convenience sample to complete the study survey. A potential procedural bias was offering an incentive to

respondents. The probability for problem bias (Type I error) and detection failure (Type II error) was possible and could be attributed to instrument selection (i.e., Knowledge Scale) and when assessing race small sample sizes..

Another limitation of this study is that dichotomous measures used (HIV/AIDS knowledge and sections of the sex and AIDS communication measure) were a violation of the assumption of interval level measurement. However, statisticians have asserted that using ordinal instead of interval level measurement will not prevent valid statistical inferences (Olobatuyi, M., 2006). In addition, the reliability for the HIV/AIDS Knowledge Scale was low for this study, which reflected the simplicity of the questions (average score 89%). Consider, however that adolescents are cognizant about basic HIV/AIDS transmission and disease manifestation (Ateka, G, & Selwyn, B., 2007). In future studies, a more rigorous measure of knowledge is recommended.

Finally, future studies may want to assess behavioral determinants with instruments that will measure sexual behaviors to compare reported preference with action, rather than relying solely on self report.

Foundations for Future Research

In this study multiple linear regressions were used to complete the theoretically derived path diagram. Other statistical methods may be employed in future studies, i.e., Structural Equation Modeling. The addition of new variables to the current regression model could eventually produce an algorithm that will guide prevention interventions for diverse populations in older adolescent

females. The same variables can be assessed in male adolescents. In addition, recruiting younger participants could offer information about the impact of media and interpersonal relationships relative to age and maturation. Instrument verbiage may need to be revised or replaced to accommodate the younger population. Lastly, the communications systems evidenced should be considered in future prevention efforts which promotes population endorsed content and would likely be more effective.

Implications for Practice

HIV/AIDS prevention is a complex concept with multiple factors that may influence young adult females' sexual decision-making. This study contributes to the body of current HIV prevention knowledge by offering potential communication systems that would be effective in conveying HIV/AIDS and sexual health information. Public health advocates should focus on interventions that equip the people closest to older adolescent females, namely parents, peers, and partners, to transmit information about HIV/AIDS and sexual health.

Nursing Implications

Understanding that the preferred HIV/AIDS and sex education communication systems were interpersonal relationships as opposed to media sources, nurse practitioners and health educators can be instrumental in facilitating message delivery. Clinically, when parents and pre-teen/adolescents are present for wellness or preventive visits, healthcare professionals typically use the HEADS acronym to assess Home, Education, Activities, and Drug use,

Depression, and Sexuality. The word “Speak” could be added to the acronym as a reminder to assess and encourage parents to speak with their children about sex and sexually transmitted diseases. If the patients are uncomfortable initiating the conversation, Nurse practitioners or health educators can advocate on behalf of the patient. As mediator, the Nurse practitioner or health educator can serve as a resource to both the parent and pre-teen/adolescent. Print material could be derived to reinforce the conversation that was initiated in the Nurse practitioner’s office. This study has provided associations between communication systems, person factors, and behaviors (decision-making) that can assist with developing and implementing HIV prevention messages that target older adolescent and young adult women.

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Appendices

Appendix A

Informed Consent for an Adult *(Please read and respond below)*

Social and Behavioral Sciences

University of South Florida and Florida Agricultural and Mechanical University

Information for People Who Take Part in Research Studies

Title of research study: Communication Systems & HIV/AIDS Sexual Decision Making in Older Adolescents

Person in charge of study: Rasheeta Chandler, RN, MS

Faculty Advisor: Dr. Mary Evans & Dr. Delores Lawson

Study Purpose:

The purpose of this study is to find out the types of communication methods (parent, partner, peers, media) relaying HIV/AIDS prevention messages that are preferred by older adolescent female students. I have found that this is an under-investigated area that warrants further study.

Why are you being asked to take part?

I am asking you to take part in this study because you fall into our selective criteria as a female student at USF or FAMU, who is between the age of 18 and 21 years old.

How long will you be asked to stay in the study?

You will be asked to spend about 45 minutes in this study. The study will consist of an online survey. You should only take part in this study if you want to take part. You will be entered into a \$200.00 drawing for the time you volunteer in this study.

Confidentiality:

Federal law requires us to keep your study records private. However, certain people may need to see your study records. By law, anyone who looks at your records must keep them confidential.

The only people who will be allowed to see these records are:

- The study staff.
- People who make sure that we are doing the study in the right way. They also make sure that we protect your rights and safety:
- The USF and FAMU Institutional Review Board (IRB)
- The United States Department of Health and Human Services (DHHS)

We may publish what we find out from this study.

If we do, we will not use your name or anything else that would let people know who you are.

You can get the answers to your questions.

If you have any questions about this study, call Rasheeta Chandler at (813) 868-0235. If you have questions about your rights as a person who is taking part in a study, call USF Research Compliance at (813) 974-5638 or FAMU Division of Research at (850)412-5246.

I understand that this is research, and I freely give my consent to take part in this study.

Yes ☐

No ☐

Appendix B

HIV/AIDS Knowledge Scale

St. Lawrence, Wilson, Eldridge, Brasfield, & O'Bannon (2001)

- 01 Most people who have the AIDS virus (HIV) look sick.
- 02 Anal (rectal) intercourse is risky because it transmits the AIDS virus (HIV).
- 03 You can get the AIDS virus (HIV) during oral sex.
- 04 A person can get the AIDS virus (HIV) in one sexual contact.
- 05 Keeping a good physical shape is the best way to keep from getting AIDS (HIV).
- 06 Condoms make intercourse completely safe.
- 07 A shower after sex reduces the risk of getting the AIDS virus (HIV).
- 08 When people don't have other partners, they don't need to practice safe sex.
- 09 Oral sex is safe if partners don't swallow.
- 10 People who have the AIDS virus (HIV) quickly get sick.
- 11 By having just one sex partner at a time you can protect yourself from the AIDS virus (HIV).
- 12 The AIDS virus (HIV) doesn't go through unbroken skin.
- 13 Cum (semen) carries the AIDS virus (HIV).
- 14 A person must have a lot of different sex partners to be at risk for the AIDS virus (HIV).
- 15 People who have the AIDS virus (HIV) feel quite sick.
- 16 If a man pulls out (withdraws) before orgasm, then intercourse is safe.

- 17 A good diet and plenty of sleep will keep a person from getting the AIDS virus (HIV).
- 18 A negative result on the HIV test can happen even if somebody has the AIDS virus (HIV).
- 19 It's more important for people to protect themselves against the AIDS virus (HIV) in big cities than in small cities.
- 20 Only receptive anal sex transmits the AIDS virus (HIV).
- 21 Most people who have the AIDS virus (HIV) know they have it.
- 22 No case of AIDS was ever caused by social (dry) kissing.
- 23 Mutual masturbation or body rubbing are low in AIDS risk.
- 24 All sexually transmitted infections (STIs) can be cured.

True & False questions that were summed to a total score.

Appendix C

The Parent and Peer Influence Scale

Directions: These questions are designed to measure your relationship with parents and friends. Please answer each item as carefully and accurately as you can by selecting the appropriate number.

1. My parents and I have the same value system.
2. My friends and I have the same basic beliefs.
3. Overall, my friends have more influence than my parents on my values.
4. In general, I am influenced more by my parents than my friends.
5. My friends influence my beliefs about sexuality.
6. My parents do not influence my beliefs about sexuality.
7. In general, my parents have more influence than my friends on my beliefs and sexuality.
8. My beliefs about the use of alcohol are the same as my parents.
9. My friends and I do not agree about alcohol use.
10. My friends have more influence than my parents on my beliefs about alcohol.
11. My political beliefs are influenced more by my parents than my friends.
12. My political beliefs are influence more by my friends than my parents.
13. I do not care what my parents think of people I date.
14. It is very important that my friends approve of people I date.
15. My friends' opinions about a date are more important than my parents' opinion about the person.
16. Overall, I am influenced more by my friends than my parents.
17. My parents have more influence than my friends on who I am as a person.

The scale ranged from 1-7; 1= Disagree very much, 2=Disagree moderately, 3=Disagree slightly, 4=Neither agree or disagree, 5=Agree slightly, 6=Agree moderately, & 7 = Agree very much

Appendix D

Parent-Adolescent Communication Scale (PACS)

Sales, et al (2006)

In the **past 6 months**, how often have you and your parent(s) talked about the following things:

Questions	1 (Never)	2 (Rarely)	3 (Sometimes)	4 (Often)
Sex				
How to use condoms				
Protecting yourself from sexually transmitted diseases (STDs)				
Protecting yourself from the AIDS virus				
Protecting yourself from becoming pregnant				

Recoded: 0=Never to 3=Often

Appendix E

Partner Communication Scale (PCS)

Milhausen et al (2006)

During the **past 6 months**, how many times have you and your sex partner discussed

Questions	0 (Never)	1 (Sometimes/ 1-3 times)	2 (Often/ 4-6 times)	3 (A lot/ 7 or more times)
How to <i>prevent</i> pregnancy				
How to <i>use</i> condoms				
How to <i>prevent</i> the AIDS virus				
How to <i>prevent</i> STDs				
Their male partner's sex history				

Appendix F

Sex and AIDS Communication Measure

Hofstetter et al (1995)

Section 1

Directions: Read each question and type the appropriate number in the text box provided.

1. About how many hours during an average day do you spend watching television? (general)
2. About how many hours during an average day do you watch Music Television (MTV)?
3. About how many hours during an average day do you watch Black Entertainment Television (BET)?
4. About how many hours during an average day do you spend on the internet?
5. About how many hours during an average day do you listen to music?
6. About how many hours during an average day do you read a read?

Directions: Read each question and type the appropriate number in the text box provided.

7. During an average week, how many days do you read a newspaper?
8. During an average week, how many days do you read a magazine?
9. During an average week, how many days do you listen to the radio?
10. During an average week, how many days do you get online?

Appendix F (Continued)

Section 2

During the **last three months**, what are the numbers of

Questions	0 (Never)	1(once or twice ever)	2 (about once a month)	3 (several times a month)	4 (few times a week)	5 (almost daily)
Items seen on TV about HIV/AIDS						
Items seen on TV about IV drug use						
Items seen on TV about condoms						
Items read in newspaper about HIV/AIDS						
Items read in newspaper about IV drug use						
Items read in newspaper about condoms						
Items read in magazine about HIV/AIDS						
Items read in magazine about IV drug use						
Items read in magazine about condoms						
Items read on the internet about HIV/AIDS						

Appendix F (Continued)

Section 2 (Continued)

Items read on the internet about IV drug use						
Items read on the internet about condoms						
Items heard on radio about HIV/AIDS						
Items heard on radio about IV drug use						
Items heard on radio about condoms						

Appendix F (Continued)

Section 3

During the **last month**, number of

Questions	0 (Never)	1(once or twice ever)	2 (about once a month)	3 (several times a month)	4 (few times a week)	5 (almost daily)
Conversations with <i>friends</i> about sex						
Conversations with <i>friends</i> about risks of AIDS						
Conversations with <i>friends</i> about risks of IV drug use						
Conversations with <i>friends</i> about condoms						
Conversations with <i>family</i> members about risks of IV drug use						
Conversations with <i>family</i> members about condoms						

Appendix F (Continued)

Section 4

In general, how often do you

Questions	0 (Never)	1(once or twice ever)	2 (about once a month)	3 (several times a month)	4 (few times a week)	5 (almost daily)
Talk to friends about dating						
Talk to friends about pregnancy						
Talk to friends about STDs						
Talk to friends about postponing intercourse						
Talk to friends about how to prevent AIDS						
Talk to friends about buying condoms						
Talk to friends about using condoms						
Talk to friends about IV drug use						

Appendix F (Continued)

Section 5

During **last month**, number of times

Questions	0 (Never)	1(once or twice ever)	2 (about once a month)	3 (several times a month)	4 (few times a week)	5 (almost daily)
Talked to your parent(s) about sex						
Talked to your parent(s) about AIDS						
Talked to your parent(s) about birth control						
Talked to your family (excluding parents) about sex						
Talked to your family (excluding parents) about AIDS						
Talked to your family (excluding parents) about birth control						

Appendix F (Continued)**Section 6**

In general, what is your **preferred** method for receiving information about?

Questions	TV	Newspaper	Magazine	Radio	Parent(s)	Partner	Peers	Internet
Sex								
AIDS								
STDs								
Using condoms								
Postponing intercourse								
Pregnancy								
Dating								

Other _____

In order of importance, rank from 1-8 which method of communication has the most influence on your sexual decisions (1= Most Important to 8= Least important). Numbers cannot be used more than once.

TV

Newspaper

Magazine

Radio

Parent(s)

Partner (s)

Peer (s)

Internet

Appendix G

Safer Sex Communication

St. Lawrence et al (2001)

1. What is your risk for getting HIV/AIDS?

0- No risk

1-Minimal risk

2-Some risk

3-High risk

2. How much can you do to keep from getting AIDS?

0-Nothing

1-Not much

2-Enough

3- A lot

Appendix H

Regression analysis calculated to determine regression coefficients for Q1

Outcome variable	R ²	Predictor Variables	β	p
Peer Influence	.054	Age	.013	.729
		Race		
		White	.200	.339
		Black	-.004	.980
		Asian	.092	.348
		NH/PI	.003	.952
		AI/AN	.050	.262
		Other	.169	.243
		Unsure	.157	.002*
		Decline	.050	.441
		Hispanic	-.145	.006*
		Income		
		Self	.071	.077
		Mother	.020	.683
Parent Communication	.041	Father	-.086	.078
		Age	-.021	.586
		Race		
		White	-.396	.060
		Black	-.222	.126
		Asian	-.254	.011*
		NH/PI	-.139	.010*
		AI/AN	-.074	.103
		Other	-.231	.111
		Unsure	-.002	.972
		Decline	-.104	.110
		Hispanic	.060	.253
		Income		
		Self	.005	.892
Partner Communication	.032	Mother	-.030	.541
		Father	-.049	.316
		Age	-.016	.701
		Race		
		White	.020	.932
		Black	.118	.467
		Asian	-.031	.773
		NH/PI	-.019	.761
		AI/AN	.018	.725

Appendix H (Continued)

Regression analysis calculated to determine regression coefficients for Q1

Outcome variable	R ²	Predictor Variables	β	p
Media Exposure TV(hr)	.023	Other	.045	.784
		Unsure	.035	.552
		Decline	.010	.893
		Hispanic	.022	.712
		Income		
		Self	-.005	.917
		Mother	-.125	.022*
		Father	.016	.760
		Age	-	-.011 .780
		Race		
		White	-.012	.953
		Black	.084	.565
		Asian	-.043	.665
		NH/PI	-.035	.516
		AI/AN	.018	.700
		Other	.077	.600
		Unsure	.005	.918
		Decline	.026	.693
		Hispanic	-.037	.481
		Income		
		Self	.007	.857
		Mother	-.050	.318
		Father	-.038	.441
Print (hr)	.018	Age	.016	.679
		Race		
		White	.149	.484
		Black	.210	.151
		Asian	.092	.361
		NH/PI	.046	.399
		AI/AN	.061	.177
		Other	.079	.591
		Unsure	.044	.390
		Decline	.033	.613
		Hispanic	.032	.547
		Income		
		Self	.031	.445

Appendix H (Continued)

Regression analysis calculated to determine regression coefficients for Q1

Outcome variable	R ²	Predictor Variables	β	p
Print (Day)	.027	Mother	-.053	.294
		Father	.013	.797
		Age	.020	.601
		Race		
		White	-.144	.497
		Black	-.091	.532
		Asian	.008	.938
		NH/PI	-.070	.196
		AI/AN	.071	.115
		Other	-.039	.789
		Unsure	.008	.876
		Decline	.048	.466
		Hispanic	-.082	.125
		Income		
Internet (hr)	.117	Self	.026	.526
		Mother	-.075	.135
		Father	.020	.690
		Age	-.172	.000*
		Race		
		White	.077	.704
		Black	.288	.038*
		Asian	.139	.145
		NH/PI	.161	.002*
		AI/AN	-.019	.665
		Other	.031	.822
		Unsure	-.229	.819
		Decline	-.732	.464
		Hispanic	.998	.319
		Income		
Internet (day)	.012	Self	.867	.386
		Mother	.031	.975
		Father	.178	.859
		Age	-.039	.314
		Race		
		White	-.118	.580
		Black	-.037	.802
		Asian	-.011	.909

Appendix H (Continued)

Regression analysis calculated to determine regression coefficients for Q1

Outcome variable	R ²	Predictor Variables	β	p
Radio (hr)	.042	NH/PI	.009	.876
		AI/AN	.003	.942
		Other	-.134	.363
		Unsure	.001	.981
		Decline	-.088	.185
		Hispanic	-.047	.383
		Income		
		Self	-.014	.735
		Mother	.000	.996
		Father	.034	.486
		Age	-.006	.881
		Race		
		White	.162	.442
		Black	.246	.090
		Asian	.103	.296
		NH/PI	.131	.015*
		AI/AN	.044	.331
		Other	.129	.373
		Unsure	.057	.261
		Decline	.123	.060
		Hispanic	.001	.983
Radio (day)	.055	Income		
		Self	-.019	.642
		Mother	-.012	.812
		Father	-.055	.262
		Age	.158	.000*
		Race		
		White	.043	.835
		Black	-.072	.616
		Asian	-.015	.882
		NH/PI	-.022	.685
		AI/AN	-.025	.570
		Other	.023	.871
		Unsure	-.108	.032*
		Decline	.030	.644
		Hispanic	.013	.797
		Income		
		Self	.068	.091

Appendix H (Continued)

Regression analysis calculated to determine regression coefficients for Q1

Outcome variable	R ²	Predictor Variables	β	p
Communication Preference TV	.018	Mother	-.028	.572
		Father	.026	.594
		Age	.023	.553
		Race		
		White	-.108	.611
		Black	-.032	.826
		Asian	.000	.998
		NH/PI	-.066	.229
		AI/AN	-.044	.332
		Other	-.102	.488
		Unsure	-.059	.251
		Decline	.043	.513
		Hispanic	-.027	.609
		Income		
Newspaper	.013	Self	-.054	.187
		Mother	.007	.886
		Father	.010	.838
		Age	.031	.424
		Race		
		White	.093	.662
		Black	.048	.742
		Asian	.000	.996
		NH/PI	-.001	.980
		AI/AN	-.002	.966
		Other	.125	.396
		Unsure	.071	.165
		Decline	.071	.284
		Hispanic	-.011	.830
		Income		
Magazine	.029	Self	-.025	.543
		Mother	-.003	.960
		Father	.010	.832
		Age	.024	.533
		Race		
		White	.223	.293

Appendix H (Continued)

Regression analysis calculated to determine regression coefficients for Q1

Outcome variable	R ²	Predictor Variables	β	p
Radio	.042	Black	.071	.628
		Asian	.083	.404
		NH/PI	.002	.969
		AI/AN	-.002	.960
		Other	.111	.449
		Unsure	.001	.981
		Decline	-.004	.955
		Hispanic	.075	.160
		Income		
		Self	.013	.749
		Mother	.017	.726
		Father	.090	.066
		Age	.047	.211
		Race		
		White	-.003	.990
		Black	-.052	.722
		Asian	-.001	.989
		NH/PI	-.013	.813
		AI/AN	-.004	.930
		Other	.086	.556
		Unsure	-.003	.958
		Decline	.182	.005*
		Hispanic	-.072	.174
Parent	.011	Income		
		Self	.029	.469
		Mother	-.048	.332
		Father	-.028	.572
		Age	-.058	.134
		Race		
		White	.031	.885
		Black	.067	.650
		Asian	-.010	.925
		NH/PI	.048	.380
		AI/AN	-.007	.885
		Other	.023	.879
		Unsure	.065	.207
		Decline	.003	.962
		Hispanic	-.006	.912

Appendix H (Continued)

Regression analysis calculated to determine regression coefficients for Q1

Outcome variable	R ²	Predictor Variables	β	p
Partners	.008	Income		
		Self	.008	.839
		Mother	.006	.909
		Father	.018	.723
		Age	.015	.688
		Race		
		White	-.042	.845
		Black	-.035	.812
		Asian	-.044	.665
		NH/PI	-.034	.538
		AI/AN	-.015	.737
		Other	-.091	.538
		Unsure	-.020	.697
		Decline	-.003	.964
		Hispanic	.019	.723
Peers	.029	Income		
		Self	.023	.579
		Mother	.012	.806
		Father	-.021	.673
		Age	-.044	.252
		Race		
		White	-.122	.563
		Black	-.054	.713
		Asian	.009	.930
		NH/PI	.031	.571
		AI/AN	-.039	.384
		Other	-.089	.541
		Unsure	.091	.075
		Decline	-.009	.885
		Hispanic	-.019	.726
Internet	.016	Income		
		Self	.016	.688
		Mother	-.013	.790
		Father	-.072	.142
		Age	-.040	.294
		Race		
		White	-.002	.992
		Black	-.031	.833

Appendix H (Continued)

Regression analysis calculated to determine regression coefficients for Q1

Outcome variable	R ²	Predictor Variables	β	p
Books	.020	Asian	-.026	.794
		NH/PI	.011	.839
		AI/AN	.049	.278
		Other	-.003	.985
		Unsure	-.058	.256
		Decline	-.036	.581
		Hispanic	.017	.751
		Income		
		Self	.037	.362
		Mother	-.041	.408
		Father	-.047	.342
		Age	.063	.097
		Race		
		White	.005	.981
		Black	.026	.860
		Asian	-.005	.963
		NH/PI	.010	.848
		AI/AN	.037	.411
		Other	.090	.539
		Unsure	-.008	.871
		Decline	-.038	.561
		Hispanic	-.008	.877
		Income		
		Self	.055	.179
		Mother	.040	.425
		Father	.041	.404

*

*p ≤ .05; Note: Internet preference was excluded from the model

Appendix I

Regression analysis calculated to determine regression coefficients for Q2

Outcome variable	R ²	Predictor Variables	β	p
HIV/AIDS Perceived Risk	.112	Peer Communication	.141	.003*
		Parent Communication	.168	.001*
		Partner Communication	.070	.150
		Media Exposure		
		Television	.119	.010*
		Print (hr)	-.009	.844
		Print (days)	-.097	.029*
		Internet (hour)	-.100	.037*
		Internet (days)	.004	.927
		Radio (hours)	.072	.124
		Radio (days)	.044	.309
		Communication Preference		
		Television	.007	.897
		Newspaper	-.076	.078
		Magazine	-.006	.891
		Radio	-.026	.554
		Parents	.055	.261
		Partners	-.006	.895
		Peers	.079	.121
		Books	.007	.890
HIV/AIDS Knowledge	.067	Peer Communication	-.016	.689
		Parent Communication	-.026	.546
		Partner Communication	.052	.215
		Media Exposure		
		Television	-.048	.219
		Print (hr)	-.035	.375
		Print (days)	-.007	.850
		Internet (hour)	-.110	.007*
		Internet (days)	.003	.941
		Radio (hours)	-.079	.051*
		Radio (days)	.086	.022*
		Communication Preference		
		Television	-.091	.033*
		Newspaper	-.105	.005*
		Magazine	-.059	.145
		Radio	-.002	.952

Appendix I (Continued)

Regression analysis calculated to determine regression coefficients for Q2

Outcome variable	R ²	Predictor Variables	β	p
HIV/AIDS Self-efficacy	.021	Parents	-.060	.153
		Partners	-.061	.129
		Peers	-.058	.174
		Books	-.096	.019*
		Peer Communication	-.008	.851
		Parent Communication	-.039	.383
		Partner Communication	.021	.621
		Media Exposure		
		Television	.016	.696
		Print (hr)	-.009	.827
		Print (days)	-.002	.961
		Internet (hour)	-.029	.495
		Internet (days)	.042	.282
		Radio (hours)	-.061	.139
		Radio (days)	.006	.867
		Communication Preference		
		Television	.058	.187
		Newspaper	-.019	.617
		Magazine	-.089	.033*
		Radio	.025	.514
		Parents	.008	.857
		Partners	.003	.938
		Peers	.016	.707
		Books	-.002	.964

*p ≤ .05; Note: Internet preference was excluded from the model

Appendix J

Regression analysis calculated to determine regression coefficients for Q3

Outcome variable	R ²	Predictor Variables	β	p
<i>Media that Impacts Behavior (Sexual decision-making)</i>				
Television	.109	Peer communication	.037	.340
		Parent communication	-.031	.462
		Partner communication	.057	.164
		Media Exposure		
		Television	-.043	.261
		Print (hr)	.001	.970
		Print (days)	-.018	.623
		Internet (hour)	.071	.075
		Internet (days)	-.005	.888
		Radio (hours)	-.012	.753
Newspaper	.191	Radio (days)	.018	.630
		Communication Preference		
		Television	.283	.000*
		Newspaper	.017	.642
		Magazine	-.008	.848
		Radio	.004	.905
		Parents	-.014	.738
		Partners	-.055	.157
		Peers	-.067	.106
		Books	-.014	.728
		Peer communication	.658	.511
		Parent communication	.015	.735
		Partner communication	-.032	.459
		Media Exposure		
		Television	.085	.033*
		Print (hr)	.016	.681
		Print (days)	-.076	.050*
		Internet (hour)	-.019	.639
		Internet (days)	-.030	.437
		Radio (hours)	-.008	.849
		Radio (days)	-.010	.795
		Communication Preference		
		Television	-.035	.417
		Newspaper	.080	.035*
		Magazine	.015	.710
		Radio	-.041	.283
		Parents	-.063	.139

Appendix J (Continued)

Regression analysis calculated to determine regression coefficients for Q3

Outcome variable	R ²	Predictor Variables	β	p
<i>Media that Impacts Behavior (Sexual decision-making)</i>				
Magazine	.036	Partners	.100	.014*
		Peers	-.047	.273
		Books	-.039	.339
		Peer communication	-.008	.840
		Parent communication	.047	.283
		Partner communication	-.122	.004*
		Media Exposure		
		Television	-.010	.797
		Print (hr)	.066	.097
		Print (days)	-.010	.797
Radio	.023	Internet (hour)	.061	.144
		Internet (days)	-.014	.717
		Radio (hours)	-.008	.847
		Radio (days)	.008	.829
		Communication Preference		
		Television	-.028	.512
		Newspaper	-.003	.933
		Magazine	.093	.025*
		Radio	-.024	.533
		Parents	-.042	.324
		Partners	.012	.765
		Peers	.001	.983
		Books	.032	.438
		Peer communication	-.012	.772
		Parent communication	.033	.463
		Partner communication	.035	.408
		Media Exposure		
		Television	-.023	.560
		Print (hr)	.067	.096
		Print (days)	.033	.404
		Internet (hour)	-.024	.559
		Internet (days)	-.034	.382
		Radio (hours)	.066	.109
		Radio (days)	-.061	.116
		Communication Preference		
		Television	-.032	.465
		Newspaper	-.030	.437

Appendix J (Continued)

Regression analysis calculated to determine regression coefficients for Q3

Outcome variable	R ²	Predictor Variables	β	p
<i>Media that Impacts Behavior (Sexual decision-making)</i>				
Parent	.215	Magazine	.009	.831
		Radio	.002	.963
		Parents	-.054	.210
		Partners	-.001	.989
		Peers	.019	.661
		Books	-.009	.836
		Peer communication	-.238	.000*
		Parent communication	.126	.002*
		Partner communication	-.103	.007*
		Media Exposure		
		Television	-.022	.530
		Print (hr)	.032	.367
		Print (days)	-.005	.895
		Internet (hour)	-.038	.309
		Internet (days)	.027	.430
Partner	.089	Radio (hours)	.064	.083
		Radio (days)	-.018	.598
		Communication Preference		
		Television	.051	.190
		Newspaper	-.035	.301
		Magazine	-.002	.959
		Radio	.015	.664
		Parents	.276	.000*
		Partners	-.071	.054
		Peers	-.013	.745
		Books	.027	.463
		Peer communication	.093	.020*
		Parent communication	-.109	.012*
		Partner communication	.107	.010*
		Media Exposure		
		Television	.008	.845
		Print (hr)	.105	.007*
		Print (days)	-.003	.940
		Internet (hour)	-.042	.301
		Internet (days)	-.011	.758
		Radio (hours)	-.062	.118

Appendix J (Continued)

Regression analysis calculated to determine regression coefficients for Q3

Outcome variable	R ²	Predictor Variables	β	p
<i>Media that Impacts Behavior (Sexual decision-making)</i>				
Peer	.118	Radio (days)	-.016	.663
		Communication Preference		
		Television	-.044	.295
		Newspaper	-.005	.885
		Magazine	.007	.862
		Radio	.061	.096
		Parents	-.102	.014*
		Partners	.115	.004*
		Peers	-.037	.386
		Books	.001	.989
		Peer communication	.153	.000*
		Parent communication	.024	.566
		Partner communication	.012	.761
		Media Exposure		
		Television	.008	.822
		Print (hr)	-.033	.387
		Print (days)	.054	.143
		Internet (hour)	.043	.278
		Internet (days)	.013	.724
Internet	.078	Radio (hours)	-.031	.435
		Radio (days)	-.010	.781
		Communication Preference		
		Television	.022	.601
		Newspaper	.014	.704
		Magazine	.044	.270
		Radio	-.023	.523
		Parents	.007	.860
		Partners	.027	.487
		Peers	.276	.000*
		Books	.097	.014*
		Peer communication	-.017	.676
		Parent communication	-.087	.046*
		Partner communication	.016	.705
		Media Exposure		
		Television	-.008	.830
		Print (hr)	.091	.019*
		Print (days)	.031	.409

Appendix J (Continued)

Regression analysis calculated to determine regression coefficients for Q3

Outcome variable	R ²	Predictor Variables	β	p
<i>Media that Impacts Behavior (Sexual decision-making)</i>				
		Internet (hour)	.044	.281
		Internet (days)	.003	.939
		Radio (hours)	.023	.576
		Radio (days)	.068	.070
		Communication Preference		
		Television	-.189	.000*
		Newspaper	.010	.795
		Magazine	-.146	.000*
		Radio	-.064	.082
		Parents	-.126	.003*
		Partners	-.173	.000*
		Peers	-.172	.000*
		Books	-.101	.012*

*p ≤ .05; Note: Internet preference was excluded from the model

Appendix K

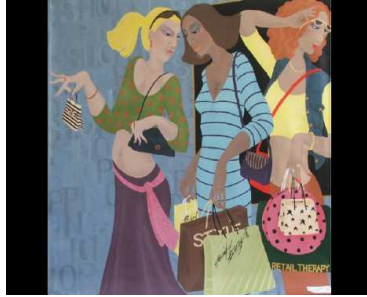
Regression analysis calculated to determine regression coefficients for Q4

Outcome variable	R ²	Predictor Variables	β	p
<i>Media that Impacts Behavior (Sexual decision-making)</i>				
Television	.010	HIV/AIDS Perceived Risk	-.008	.852
		HIV/AIDS Knowledge	-.072	.080
		HIV/AIDS Self-efficacy	.070	.084
Newspaper	.012	HIV/AIDS Perceived Risk	-.021	.600
		HIV/AIDS Knowledge	-.084	.041*
		HIV/AIDS Self-efficacy	.063	.121
Magazine	.010	HIV/AIDS Perceived Risk	-.060	.144
		HIV/AIDS Knowledge	.005	.897
		HIV/AIDS Self-efficacy	-.083	.042*
Radio	.014	HIV/AIDS Perceived Risk	-.135	.001*
		HIV/AIDS Knowledge	-.064	.117
		HIV/AIDS Self-efficacy	.062	.126
Parent	.018	HIV/AIDS Perceived Risk	-.135	.001*
		HIV/AIDS Knowledge	.033	.420
		HIV/AIDS Self-efficacy	.012	.764
Partner	.006	HIV/AIDS Perceived Risk	.052	.207
		HIV/AIDS Knowledge	.040	.330
		HIV/AIDS Self-efficacy	-.022	.585
Peer	.010	HIV/AIDS Perceived Risk	.094	.023*
		HIV/AIDS Knowledge	.020	.632
		HIV/AIDS Self-efficacy	-.006	.889
Internet	.001	HIV/AIDS Perceived Risk	.026	.528
		HIV/AIDS Knowledge	.004	.919
		HIV/AIDS Self-efficacy	.019	.642

*p ≤ .05; Note: Internet preference was excluded from the model

Appendix L

Women this one is for you!



Painting by: Jennifer Gibney

Are you a **full-time or part-time student** attending
University of South Florida or Florida A&M?
Then we need **YOU** to be a part of a study!

Who is eligible?

- ✓ Full-time and part-time students attending USF or FAMU.
- ✓ Aged 18-21.
- ✓ Able to speak, read, and write English.

What will I have to do?

- ✓ Complete an online survey anytime that is convenient to YOU.

How much time will this take?

- ✓ Participation will take approximately **20 minutes**.

Do I get anything for my time?

- ✓ Increase understanding of Women's Health Issues.
- ✓ Provide information that will help improve preventive messages related to Women's health.
- ✓ Be entered in a drawing for a chance to **win \$200.00**.

How can I participate?

- ✓ Just go to the link and complete the survey!!!

<http://hscem2.hsc.usf.edu/us3/Surveys/TakeSurvey.aspx?s=61529975-CFCF-4C38-8ABC-C262710A80A1&invitationid=@@invitationid>

Have more questions?

Contact: Rasheeta Chandler, RN, MS

E-mail: rchandle@hsc.usf.edu

Appendix M

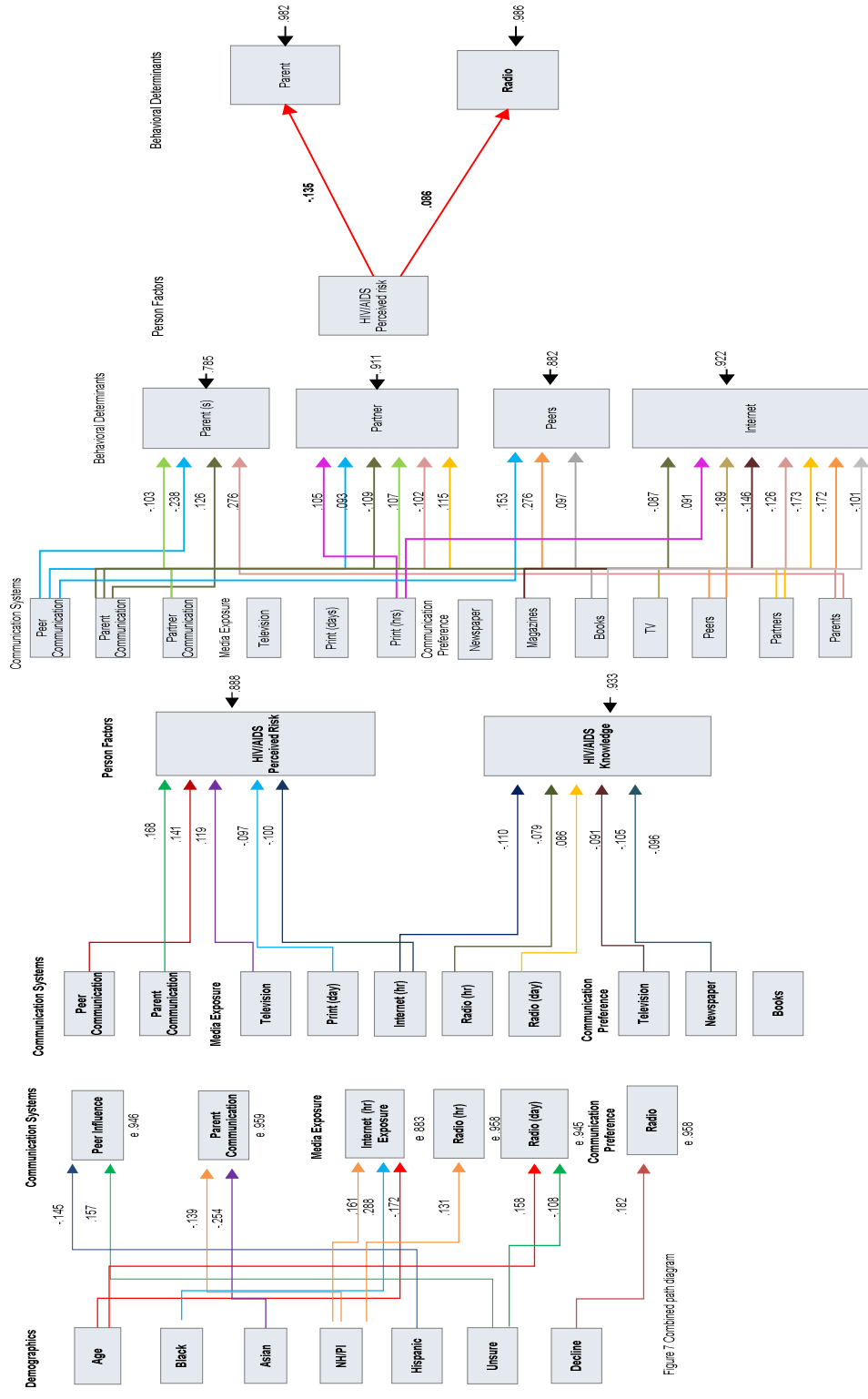


Figure 7 Combined path diagram

Appendix N



February 20, 2008

Rashaeta Chandler, ARNP, MS
College of Nursing
MDC 22

This letter supersedes the approved Modification Request dated December 14, 2007.

RE: Approved Modification Request

IRB#: 106259g

Title: *Communication Systems & HIV/AIDS Sexual Decision Making in Older Adolescents*

Study Approval Period: 10/25/07 to 10/23/08

Dear Ms. Chandler:

On November 27, 2007 the Institutional Review Board (IRB) reviewed and **APPROVED** your Modification Request. The submitted request has been approved from November 27, 2007 to October 23, 2008 for the following:

Revision to the instrument being used in study.

Please note, if applicable, the enclosed informed consent/assent documents are valid during the period indicated by the official IRB-Approval stamp located on page one of the form. Valid consent must be documented on a copy of the most recently IRB-approved consent form. Make copies from the enclosed original.

Please reference the above IRB protocol number in all correspondence to the IRB or the Division of Research Compliance. It is your responsibility to conduct this study in accordance with IRB policies and procedures and as approved by the IRB.

We appreciate your dedication to the ethical conduct of human subject research at the University of South Florida and your continued commitment to human research protections. If you have any questions regarding this matter, please call 813-974-9343.

Sincerely,

A handwritten signature in dark ink, appearing to read 'Paul G. Stiles'.

Paul G. Stiles, J.D., Ph.D., Chairperson
USF Institutional Review Board

Enclosure: (If applicable) IRB-Approved, Stamped Informed Consent/Assent Document(s)

OFFICE OF RESEARCH • DIVISION OF RESEARCH INTEGRITY & COMPLIANCE
INSTITUTIONAL REVIEW BOARDS, FWA No. 00001669

University of South Florida • 13901 Bruce B. Downs Blvd., VIN205 • Tampa, FL 33612-4799
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Appendix O



Excellence with Caring

INSTITUTIONAL REVIEW BOARD

Florida Agricultural and Mechanical University

Tallahassee, Florida 32307-3100

Telephone: (904) 412-5248
Fax: (904) 412-5012

APPROVAL MEMORANDUM

TO: Dr. Delores Lawson
School of Nursing

FROM: C. Perry Brown, DrPH 
Chair, Institutional Review Board (IRB)

DATE: October 29, 2007

RE: *Communication Systems & HIV/AIDS Sexual Decision Making in Older Adolescents* (007-73)

The Florida A&M University Institutional Review Board (IRB) has reviewed and approved the above name project and no other revisions are necessary.

The IRB has not evaluated your project for scientific merit, except to weigh the risk to the human participants and the aspects of the proposal related to potential risk and benefit. This approval does not replace any departmental or other approvals, which may be required.

If the project has not been completed by **October 29, 2008** you must request a renewed approval for continuation of this project.

You are advised that any changes in the protocol in this project must be resubmitted to the committee for approval. Also, the principal investigator must promptly report, in writing, any unexpected problems causing risks to research subjects or others.

The institution has an Assurance on file with the Office for Human Research Protection. The Assurance Number is FWA00005391.

F.A.M.U. IS AN EQUAL OPPORTUNITY/EQUAL ACCESS UNIVERSITY

About the Author

Rasheeta Chandler is a board certified Family Nurse Practitioner.

Rasheeta graduated Magna Cum Laude from Florida A & M University with a Bachelor of Science degree. In May 2005, Rasheeta graduated with honors from University of South Florida with a Master's of Science degree. Professionally, she is a member of several professional organizations. She has been recognized for her leadership and scholarship to be a nominated member to Sigma Theta Tau International, the national honor society of nursing, and one of the 1st of 20 students to be chosen as the 2006-2007 Golden Bull Award recipient. Rasheeta Chandler is a McKnight Doctoral Fellow who plans to devote her research career to understanding adolescent health risk behaviors. Her long term research objectives are to test the effects of culturally competent social marketing interventions on adolescent sexual decisions. Miss. Chandler is currently employed at University of South Florida and as a Family Nurse Practitioner.