EXAMINING SEXUAL RISK BEHAVIOR AMONG ADOLESCENTS IN GHANA:

APPLYING THE THEORY OF PLANNED BEHAVIOR

By

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ABSTRACT

Sixty-three percent (63%) of youth who have HIV/AIDS live in sub-Saharan Africa. There is a lack of published data on sexual behaviors among sub-Saharan African youth. This study targets a segment of the Ghanaian population that has not been addressed prior to this research study. The purpose of this study is to examine sexual behaviors among 3rd year senior secondary school students in the Greater Accra and Volta regions of Ghana, West Africa using the Theory of Planned Behavior. Data were collected from 11 Senior Secondary Schools in Ghana. Sixty-three percent (63%) of the sample was from the Greater Accra region, while 37% was from the Volta region (N = 902). The data were weighted based on region and gender so that the resulting sample may represent the estimated population of students in the schools. The sample consisted of 510 boys (56.6%) and 391 girls (43.4%). Age ranged from 16 to 19 years, with 33.2% being 17 years old.

Girls were less likely to intend to use condoms than boys (X^2 = 18.3, df = 2, p<.001). In the logistic regression analysis, the model was able to explain 45.9% of the variation in *intention to use condoms* (R^2 = 0.459). Participants with positive a*ttitudes toward condom use* were more likely to intend to use condoms in the next three months compared to participants with *negative or neutral* attitudes toward condom use. Participants who thought important people closest to them would *approve* of their condom use were more

likely to intend to use condoms in the next three months than participants who thought most people important to them were neutral toward their condom use. *Perceived behavioral control* provided inconclusive results as a predictor of participants' intention to use condoms.

Overall, this model is an effective model for explaining intention to use condoms among Ghanaian adolescent boys and girls. Future recommendations include designing and implementing sexual risk behavior interventions in Ghana utilizing the Theory of Planned Behavior and conducting similar research in the remaining eight geographical regions of Ghana.

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CHAPTER I

INTRODUCTION

There are one billion youth ages 15-24 years around the world and of that number, approximately 10 million are living with HIV/AIDS (United Nations Population Fund, 2005). Of the latter number, 63% live in sub-Saharan Africa (UNAIDS Inter-Agency Task Team on Young People, 2004). Youth in sub-Saharan Africa are disproportionately affected by HIV/AIDS. Yet, there is a lack of published data on sexual behaviors of African youth. Therefore, research based on theory must be conducted to better serve this age group.

Theory of Reasoned Action vs. Theory of Planned Behavior

Much research has been conducted on HIV/AIDS using the Theory of Reasoned Action (TRA). Since the inception of TRA, it has been modified to add a very important concept called Perceived Behavioral Control (PBC). The theory of planned behavior (TPB) is an extension of the theory of reasoned action because it expands upon the TRA's inability to account for behavior that is not under the complete control of the individual. PBC was added to include behavior that may or may not be under the total control of the individual (Ajzen, 1991). These behaviors could include condom use when studying the sexual behaviors of adolescent boys and girls. Perceived behavior control allows for the intertwining of the concept of self-efficacy and the concepts of intrinsic and extrinsic locus of control. Perceived behavioral control along with the original

concepts of TRA (attitudes, subjective norms, and intentions) have been combined to create the Theory of Planned Behavior (TPB) (Ajzen, 1991; Smith & Stasson, 2000).

Attitudes toward Behavior

Attitudes toward the behavior are defined as personal appraisal toward the possible the negative or positive consequences of planned behavior combined with the person's evaluations of those consequences. If a person has favorable attitudes toward condom use and foresees no adverse consequences to condom use, then they are likely to use condoms during sexual activity (Ajzen, 1991; Fishbein & Ajzen, 1975).

Subjective Norms

Subjective norms are defined as one's perception of social pressure involved with performing the targeted behavior along with the willingness to comply with those perceptions. Social pressure stems from a person's closest social network (e.g., parent, spouse, friend, etc.). If a person perceives that their parents want them to use condoms and the person would like to adhere to their parents' social norm, they are more likely to used condoms. However, if a person perceives that their parents want them to use condoms, but the individual rebels against their parents' social norm, they are less likely to use condoms (Fishbein & Ajzen, 1975).

Perceived Behavioral Control

Perceived Behavioral Control (PBC) is defined as one's perception of ability toward performing a specific action and if the behavior is perceived to be in his or her

control. Perceived behavioral control is unique because it can, by itself, have an impact on actual behavior (see Figure 1) (Ajzen, 1991). This concept is similar to self-efficacy. Smith & Stasson (2000) made the distinction by identifying self-efficacy as specific to the individual and general to many varying behaviors (e. g., Can *I* control the behavior?). Perceived behavioral control is applicable to specific behaviors (e. g., Is *this* behavior under my control?) (Smith & Stasson, 2000).

Intentions and Behavior

Intentions are essential to both the theory of reasoned action and the theory of planned behavior because intentions are believed to capture motivation relating to human behavior. Intentions encapsulate how much effort individuals are willing to put toward performing a behavior. Generally, the stronger an individual's intention to perform a behavior, the more likely the individual is to perform the behavior. So, when future behavior cannot be measured (i.e., in a cross-sectional study), intentions are deemed sufficient to predict future behavior. The theory of planned behavior postulates that attitudes toward the behavior, the subjective norms of the people closest to the individual, and the individual's perceived behavioral control over the behavior all predict the individual's intention to perform the behavior (see Figure 1)(Ajzen, 1991).

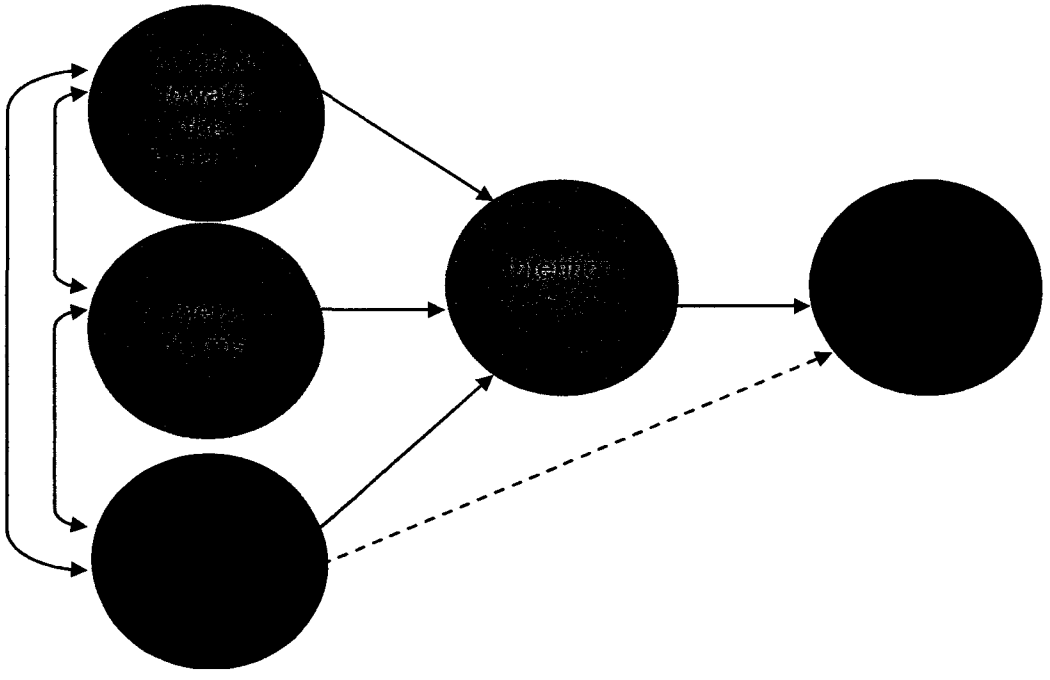

Figure 1. Theory of Planned Behavior Concepts

Note: Permission was granted to reproduce TPB model by Icek Ajzen.

Adolescence: A Pivotal Time in Development

Adolescence is a very important time in studying human behaviors. Young people are at the center of the HIV/AIDS crisis and should be treated as valuable targets for preventative measures (United Nations Children's Fund (UNICEF), Joint United Nations Programme on HIV/AIDS (UNAIDS), & World Health Organization (WHO), 2002). Extrapolating from global HIV/AIDS burden borne by African youth, every day approximately 3,150 to 3,780 young people ages 15-24 years old in Africa contract

HIV/AIDS (UNAIDS Inter-Agency Task Team on Young People, 2004). Individuals under the age of 25 account for more than half of all new infections (UNAIDS Inter-Agency Task Team on Young People, 2004). Although Ghana has a 3% generalized AIDS rate, young girls are disproportionately affected compared to boys (1.4% female and 0.4% male) (World Health Organization (WHO), Joint United Nations Programme on HIV/AIDS (UNAIDS), & United Nations Children's Fund (UNICEF), July 2008). This suggests the need for different STI interventions for adolescent boys and girls. The possible need for different approaches to interventions indicates the need for further research. The research study uses the theory of planned behavior to examine what effect attitudes toward the behavior, subjective norms and perceived behavioral control have on adolescent intention to practice safer sexual behavior among 3rd year senior secondary school students in Ghana, West Africa.

Previous Research

Although there are a number of studies that focus on the Sub-Saharan African population and HIV/AIDS, a large number of the studies focusing on sexual risk behavior draw their participant sample from Southern Africa (Boer & Mashamba, 2005; Buseh, Glass, McElmurry, Mkhabela, & Sukati, 2002; Giles, Liddell, & Bydawell, 2005; Heeren, Jemmott III, Mandeya, & Tyler, 2007; Jemmott III et al., 2007; Norr, Norr, McElmurry, Tlou, & Moeti, 2004; Trinitapoli & Regnerus, 2006).There is a critical gap of information and published research data on West African adolescents, in particular Ghanaian adolescents (Bosompra, 2001).

Sexual Behavior among Ghanaian University Students

In 2001, Bosompra examined the predictability of the Theory of Reasoned Action (TRA) using a sample of university students in Ghana. The aim was to examine the applicability of TRA away from its Western origin and apply it to an African culture. Two hundred and one students participated of which 62% were male. Participants' age ranged from 19-29 with a mean of 24.36. Most (89.1%) of the participants had been sexually active in the past. The results showed that the study model was supported and 33% of the variance in intention to use condoms was explained by the variables in the model (i.e., attitudes toward condom use and subjective norms). Participants who intended to use condoms during their next sexual encounter along with participants who did not intend to use condoms during their next sexual encounter were equally motivated to comply with their subjective norms (i.e., attitudes of sexual partners, close friends, parents and medical doctors). The participants who intended to use condoms during their next sexual encounter ("intenders") differed from those who did not intend on using condoms during their next sexual encounter ("non-intenders") by one factor. Intenders believed more strongly than non-intenders that the people closest to them approved of condom use (Bosompra, 2001). Subjective norms in a Ghanaian population were shown to have a significant effect on whether or not people chose to use condoms.

Condom Use among African Young Adults

In a research study conducted in South Africa, the theory of planned behavior was used to predict condom use among young Zulu adults living in a remote rural location.

Participants' mean age was 20.3 years. The sample consisted of 152 participants; 52% female and 48% male. Eighty-one percent (81%) of the participants reported having sexual intercourse at least once in their lifetime. Of these participants, 60% used a condom at least once before, but only 45% used a condom during their last sexual encounter. The researchers were able to statistically show that the constructs in the Theory of Planned Behavior were significantly related to the participants' intentions to use condoms. This model was able to predict 67% of the variation in intention. Self-efficacy was the most significant predictor, which was measured separately in this study from the concept of perceived behavioral control. Self-efficacy and subjective norms contributed most of the variation in the model. Neither attitudes toward condom use nor perceived behavioral control significantly contributed to the prediction of intention. The three most significant control beliefs were as follows: "The fear of contracting HIV/AIDS", "Not knowing where to get [condoms]", and "One's cultural beliefs" (Giles et al., 2005, p. 734). The researchers suggest that self-efficacy should be used along with the other concepts in the TPB model because of the overwhelming significance found in this study.

Participants' actual condom use was measured one week after the initial administration of the Theory of Planned Behavior questionnaire. The researchers hypothesized that the significance of subjective norms was due to the rural living conditions of the participants. This assumes that people living in rural areas place more value upon social/family influences. The Theory of Planned Behavior may be one of the

few theoretical frameworks that can explain the dynamic that exists with individual and social influences (Giles et al., 2005). Subjective norms along with self-efficacy were found to be most significant.

South African Adolescent Condom Use

Ajzen's theory of planned behavior was used to predict condom use among adolescents in South Africa. The sample's mean age was 12.1 (*SD* =1.2). Twenty five percent (25%) of the respondents reported they had sexual intercourse at least once in their lifetime, whereas only 12% reported having sexual intercourse in the previous three months. Sexual activity was significantly related to the participant's age. The older the participants' age, the more likely it was they reported having past sexual experience. Analysis indicated that each concept (i.e., attitudes toward the behavior, subjective norms, and perceived behavioral control) in the theory of planned behavior was significantly correlated with participants' intentions to use condoms (r = 0.45, 0.29, 0.57, respectively). A multiple regression showed that attitudes toward behavior and perceived behavioral control were independent predictors of intention, but the participants' subjective norms were not. The regression model was able to predict 37% of the variance in intention to use condoms. The results showed that the more positive attitudes toward using condoms and the higher perceived behavioral control, the stronger the participant's intentions were to use condoms in the next 3 months.

A separate regression analysis was performed to assess if additional concepts in the Theory of Planned Behavior (behavioral beliefs, normative and control beliefs) were able to predict the participants' intention to use condoms. This model was able to account for 24% of the variation in intention to use condoms. In an African society, it was expected that subjective norms would better predict in the model of the theory of planned behavior. This did not seem to be the case with this particular sample of adolescents (Jemmott III et al., 2007).

Conclusion of Previous Research

Two of the three studies discussed above utilized the Theory of Planned Behavior (TPB) (Giles et al., 2005; Jemmott III et al., 2007), while the third study utilized the Theory of Reasoned Action (TRA) (Bosompra, 2001). All three studies were conducted in Africa. One study was in Ghana, West Africa. The studies did show that the constructs of both TPB and TRA were able to account for much of the variance in condom use; 33%, 67% and 37% respectively). Giles (2005) and Bosompra (2001) were able to show that subjective norms were very important in intended condom use among participants who lived in rural South Africa. Jemmott III, et al., (2007) found that attitudes toward the behavior and perceived behavioral control contributed most to the model. These three contribute to the literature in different ways. Still, sexual risk behavior of the 16-19 year age group in Ghana, Africa is still missing from published literature. Adolescents around the world are often initiating their first sexual encounter during this age range, therefore

research is needed to better understand factors influencing sexual behavior among this age group (United Nations Children's Fund (UNICEF) et al., 2002).

Statement of the Problem

Researchers have not addressed the high school age group, in this case, the senior high school age group nor has it thoroughly addressed the Ghanaian population. The Theory of Planned Behavior has been used in research to explore sexual behavior; however it has not been used with Ghanaian adolescents. This study will provide new information on sexual behaviors among older adolescents in Ghana. The research study uses the theory of planned behavior to examine what effect attitudes toward the behavior, subjective norms and perceived behavioral control have on adolescent intention to practice safer sexual behavior among 3rd year senior secondary school students in Ghana, West Africa.

Purpose of Study

The purpose of this study is to examine sexual behaviors among 3rd year senior secondary school students in the Greater Accra and Volta regions of Ghana, West Africa using the Theory of Planned Behavior.

Research Questions

The following research questions are designed to explore high risk sexual behavior and the concepts within the Theory Planned Behavior.

Theoretical Research Question

Research Question 1. When controlling for gender, age and region what effect do attitudes toward condom use, subjective norms, and perceived behavioral control have on participants' intentions to practice safer sex among adolescents attending senior secondary schools in Ghana, West Africa?

Individual Research Questions

Research Question 2. When controlling for gender, age and region, what effect do attitudes toward condom use have on intentions to practice safer sex among adolescents attending senior secondary schools in Ghana, West Africa?

Research Question 3. When controlling for gender, age and region, what effect do subjective norms have on self-reported sexual behavior among adolescents attending senior secondary schools in Ghana, West Africa?

Research Question 4. When controlling for gender, age and region, what effect does perceived behavioral control have on intentions to practice safer sex among adolescents attending senior secondary schools in Ghana, West Africa?

Research Hypotheses

Theoretical Research Hypothesis

Hypothesis 1. When controlling for gender, age and region, the higher participants' attitudes toward condom use, the higher participants' subjective norms and

the higher participants' perceived behavioral control, the more likely it is that participants will intend to practice safer sex.

Individual Hypotheses

Hypothesis 2. When controlling for gender, age, region, subjective norms and perceived behavioral control, the more positive attitudes participants have toward condom use, the more likely it is that they will intend to practice safer sex.

Hypothesis 3. When controlling for gender, age, region, attitudes toward condoms use and perceived behavioral control, the higher participants' subjective norms toward their own condom use, the more likely it is that participants will intend to practice safer sex.

Hypothesis 4. When controlling for gender, age, region, attitudes toward condoms use and subjective norms, the higher participants' perceived behavioral control over their own protective sexual behavior, the more likely it is that participants will intend to practice safe sex.

Definition of Terms

The following terms have defined for the purposes of this study.

1) Attitudes toward Condom Use indicates an individual's favorable or unfavorable appraisal of condom use. This unfavorable or favorable appraisal factors into the

probability of using condoms in the near future. Attitude toward the behavior plays an important role in addressing the prediction of behavior (Ajzen, 1991).

2) Subjective Norms are a factor which refers to the perceived social pressure or social approval involved with using condoms. An individual is expected to be either motivated or not motivated to comply with the perceived norms that the people important to them have towards condom use.

3) Perceived Behavioral Control refers to one's perception of ability toward performing a specific action and if the behavior is perceived to be in his or her control. Perceived behavioral control focuses on the person's perception of using condoms.

4) Intention to Use Condoms captures an individual's motivation to use condoms. Intentions encapsulate how much effort individuals are willing to use condoms in the near future.

Basic Assumptions

The following assumptions are made by the researcher in this study.

1) Participants answered truthfully to the items on the 2008 Ghana GSHS Sexual Behavior Supplementary Questionnaire (SRBQ) (see Appendix C.2).

2) The instrument used in this study is valid and reliable for measuring the concepts in the theory of planned behavior.

Delimitations

Data were collected from two of the ten geographic regions of Ghana. The other eight regions of Ghana are not represented in this study.

Limitations

The methodological limitations are that this study does not address (1) The need for a longitudinal study on actual sexual behavior among Ghanaian adolescents, (2) The need for a research study design that could address the sexual behavior in more than one African country and (3) The study sampled 3rd year students from Ghanaian senior high schools, therefore the results of this study are applicable only to the 16-19 age group.

Significance of Study

Ghana's HIV prevalence rate has remained around 3.4% for the entire nation over the past 10 years. This epidemic has spread unevenly; disproportionately effecting women. Pregnant women have the same HIV prevalence rate as does the entire nation (3.4%). New infections are on the rise among women between the ages of 15-24 years of age. This group accounts for 30% of all new HIV infections in Ghana. Urban areas, such as Accra, have seen the biggest increase of newly diagnosed young women (Joint United Nations Programme on HIV/AIDS (UNAIDS) & World Health Organization (WHO), 2008).

Forty-one percent (41%) of Ghana's population is under the age of 15 years. The adolescent population is very important to the HIV/AIDS epidemic of this country

(Dzokoto, 2008).Understanding adolescent sexual behavior is vital to controlling threat of HIV/AIDS. In order to initiate primary prevention, the focus of research should be on the youth (United Nations Children's Fund (UNICEF) et al., 2002). This research provides new insight into sexual behavior among one of the least studied segments of the Ghanaian population. By focusing on sexual behavior among older adolescents in Ghana, this study provides relevant information relating to HIV/AIDS and other sexually transmitted infections (STIs) among Ghana's most vulnerable and most affected segment of the population.

CHAPTER II

LITERATURE REVIEW

Introduction

Fishbein and Ajzen's (1975) theory of reasoned action proposes that reasoned behavior can be predicted by one's attitudes toward the behavior and their subjective norms. Ajzen (1991) later expanded on this theory to include behaviors that the theory of reasoned action could not explain. This chapter starts off by explaining Ajzen's theory of planned behavior and the concept that separates the theory of reasoned action from the theory of planned behavior. Then the chapter explores the HIV/AIDS crisis among African adolescents and the sexual risk behavior associated with the HIV/AIDS epidemic. The chapter concludes with a summary of key points addressed throughout Chapter 2.

Theory of Planned Behavior Overview

The Theory of Planned Behavior provides a conceptual framework to predict human behavior based on three categories of beliefs: behavioral beliefs, normative beliefs, and control beliefs. These three categories of beliefs support the major constructs of the theory. Behavioral beliefs are the benefits or negative consequences of the target behavior. Behavioral beliefs are the guiding principles to *attitude toward the behavior*. Normative beliefs are the expectations that important people in one's life have concerning a behavior. Normative beliefs are directly responsible for an individual's

subjective norms toward the behavior. Control beliefs are the possible obstacles that would hinder one from performing a behavior. Control beliefs are responsible for *perceived behavioral control* over a behavior. Behavioral intention is assumed to be the direct antecedent to actual behavior. A few key assumptions are made in this theory. It is assumed that high perceived behavioral control is the biggest predictor of intention, thus it can be related directly to behavioral intention. It is also assumed that perceived behavioral control is an accurate predictor of an actual behavioral control over a particular behavior. Finally and most importantly, it is assumed that attitudes toward the behavior, subjective norms and perceived behavioral control all lead to intention which predicts actual behavior (Ajzen, 2002). The theory of planned behavior is illustrated in Figure 2 (Ajzen, 2006).

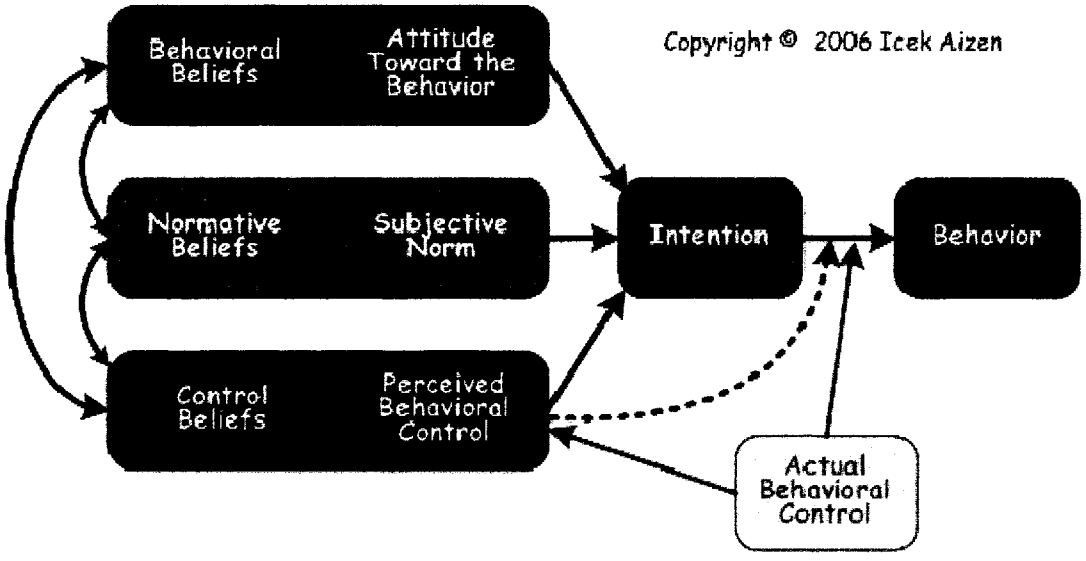

Figure 2. Ajzen's Theory of Planned Behavior (Ajzen, 2006)

Note. From "Icek Ajzen: Homepage" retrieved from http://people.umass.edu/aizen/tpb.diag.html. Copyright 2006 by Icek Aizen. Reprinted with permission.

Attitude toward the Behavior

Attitude toward behavior is a favorable or unfavorable appraisal of the targeted behavior. This favorable or unfavorable appraisal factors into the probability of performing the behavior in question. Attitude toward the behavior plays an important role in addressing the prediction of behavior (Ajzen, 1991). According to Ajzen and Fishbein (2005), there are two categories of attitudes. First, a generalization made toward objects,

groups of people, institutions, polices or other entity of interest is called *generalized attitudes*. Second, beliefs that are specific to one behavior and cannot be extended or generalized to similar behaviors are referred to as *attitudes toward the behavior*. This second type of attitude is the construct used in the theory of planned behavior (Ajzen & Fishbein, 2005). If the behavior is defined in specific terms, *attitudes toward the behavior* can remedy the vagueness often caused by predicting personality traits (e.g., extroversion). The principle of aggregation recognizes that personality traits and attitudes are implicit within human behavior. Still, attitudes cannot be solely used to predict behavior. Other factors must be entered into the proverbial equation. The theory of planned behavior deals with behavior-specific factors to develop its framework for predicting behavior. In order to effectively measure attitudes toward behavior, the target behavior must be defined as specifically as possible (Ajzen, 1991).

Subjective Norms

Subjective norms are social factors that refer to perceived social approval or acceptance expected when performing a behavior (Ajzen, 1991). An individual is expected to be either motivated or not motivated to comply with the perceived norms that the people important to them have towards a behavior. A person's attitude toward the behavior and subjective norms serve well together to predict an individual's intention to perform a specific behavior (Fishbein & Ajzen, 1975).

Perceived Behavioral Control

Perceived behavioral control (PBC) is an individual's expected ability to perform a given task (Ajzen, 2002). Perceived behavioral control is the single construct separating the Theory of Reasoned Action from the Theory of Planned Behavior. This construct plays a very important role in the theory of planned behavior. Not to be confused with *perceived locus of control*, perceived behavioral control focuses on the perception of ease or difficulty in performing a behavior. Locus of control is less specific and deals with the generalized perception which is relatively stable across various situations. Perceived behavioral control is different from the construct *expectancy of success* (Atkinson, 1964). This is defined as the perceived probability of performing a task successfully. Expectancy of success is focused on the general belief individuals carry with them from situation to situation. Perceived behavioral control only applies to a specific situation and a specific task.

Unlike *perceived self-efficacy*, perceived behavioral control (PBC) is placed within a framework that complements the constructs of the theory of planned behavior (i.e., attitudes, intentions, and subjective norms). Perceived behavioral control does not address the many aspects that Bandura's concept of *self-efficacy* is intended to encompass (e.g., optimism, psychological well-being, physical health, etc.) (Bandura, 1997). Perceived behavioral control can also predict behavior when united with behavioral intention. PBC is considered to have a strong link to intention which leads to behavioral achievement. PBC is assumed to be an accurate measure and substitute measure for

actual behavioral control. First, the Theory of Planned Behavior posits that perceived behavioral control can serve to replace actual behavioral control if individuals are less familiar with the behavior in question. Secondly, the theory posits that PBC could replace actual behavioral control when an individual's available resources change in a given period of time. These two postulates state that an individual can accurately gauge or measure their own control over behavior (Ajzen, 1991).

The constructs of attitudes toward the behavior, subjective norms, and perceived behavioral control independently contribute to the explanation of behavioral intentions. The theory of planned behavior allows for each construct to give equal or unequal weight in the prediction of intentions (Ajzen, 1991). A meta-analytic study comparing the constructs of both the theory of reasoned action (TRA) and the theory of planned behavior (TPB) found that TPB was able to account for more of the variance in condom use intention than does TRA. The researchers found that perceived behavioral control was significant in most of the studies reviewed using the TPB constructs (Sheeran & Taylor, 1999).

Intentions

Intention captures motivation to perform a specific behavior. Intention can only predict actual behavior when the behavior in question is under voluntary control (i.e., when the person can make a decision to engage or not to engage in the behavior). It is necessary to have perceived and/or actual control over the targeted behavior. The

likelihood of an individual performing a given behavior is based on availability of appropriate resources and opportunity to perform the behavior (Ajzen, 1991; Fishbein & Ajzen, 1975).

Intentions are representative of a specifically defined behavior and not a generalized behavior. Perceived behavioral control is assumed to remain stable throughout the assessment of behavioral intention. Intervening variables may cause an unexpected effect when predicting behavior. The measurement of perceived behavioral control must be accurate, but is expected to vary across situations. In most situations, if intentions are measured relatively closely to when the behavior is to be performed, they are very predictive of a the behavior being measured (Ajzen, 1991).

Beliefs

Behavioral beliefs, normative beliefs, and control beliefs are the antecedents of the theory of planned behavior's constructs. Beliefs are defined as a conviction of truth based upon previous experiences. Those previous experiences are automatically associated with new occurrences life. A negative or positive attribute applied to a previous experience is reassigned to the new experience along with the formation of a new belief. Beliefs are assumed to be different based on cultural values. It would not be wise to assume the significant beliefs of a population (Ajzen, 1991).

Role of Past Behavior

Past behavior can play an important role in predicting future behavior. Behavior tends to remain stable over time. Past behavior can be measured to predict future behavior, especially when an intervention has not influenced the behavior. Habit is defined as the repeated performance of a task. Habit could include the influence that past behavior has on future behavior. When utilizing the Theory of Planned Behavior (TPB), it is the assumption that behavior is a reasoned or planned. However, habit is seen as a reaction, rather than reason. Habit is not included in TPB because it would serve as a similar measure of *attitudes toward the behavior*. Reasoned behavior, as measured by the TPB, is not considered to be a function of habitual processes. *Perceived behavioral control* and *attitudes toward the behavior* are responsible for reconciling the effect of past behavior (Ajzen, 1991).

Sub-Saharan Africa and HIV

Sub-Saharan Africa includes all but 7 countries in the continent of Africa (see Figure 3). In 2007, 67% of the world's HIV/AIDS population resided in sub-Saharan Africa. Seventy percent (70%) of new HIV diagnoses are persons residing in sub-Saharan Africa and 75% of all deaths due to AIDS from this part of Africa. Shockingly, sub-Saharan Africa only accounts for 11-12% of the world's total population, yet bears most of the world's burden of HIV infections (The Henry J. Kaiser Family Foundation, 2008).

Figure 3. Sub-Saharan Africa

Ghana and HIV

Ghana is located on the western coast of Africa nestled between Côte d'Ivoire and Togo. Ghana's northern border is Burkina Faso and its southern border is the Atlantic Ocean. Ghana is divided into 10 regions (see Figure 4). In these 10 regions, Ghana has over 75 different ethnic groups. Approximately 70% of Ghana's population lives in the southern part of the country (Embassy of Ghana, 2008). According to the United Nations Population Division, Ghana's 2007 total population estimate was at 23,478,000 people. Ghana's urban areas contain almost half (49%) of the total population.

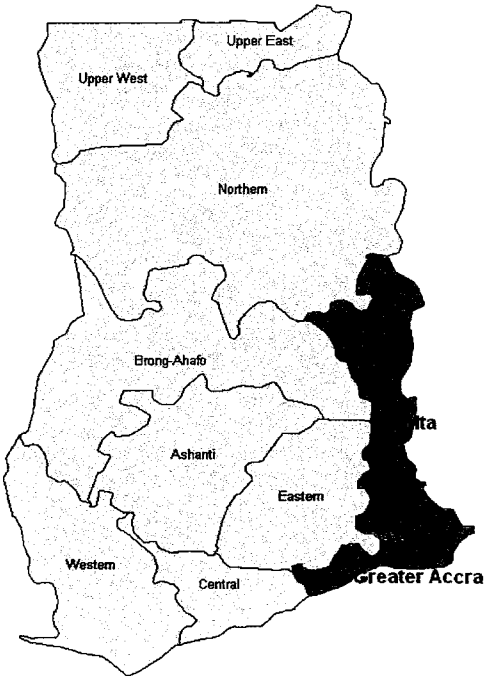

Figure 4. Ten Regions of Ghana

In 2007, approximately 21,000 Ghanaians died from HIV/AIDS. This number has risen from 2001 when approximately 15,000 people died from HIV/AIDS. Approximately 260,000 people were living with HIV in 2007. Of that number, 250,000 were over the age of 15 years. Approximately 17,000 children between the ages of 0-14 are living with HIV in Ghana. Of the 250,000 adults living with HIV in Ghana, 150,000 are women. The HIV prevalence for women between the ages of 15-24 in Ghana is 1.4%, while men in this same age group have an HIV prevalence of 0.4%. Approximately 98,000 children under the age of 17 lost their mother to HIV and approximately 93,000 lost their father to HIV (World Health Organization (WHO) et al., July 2008).

Sexual Behavior

Early age at first sexual encounter (i.e., 15 years or younger) increases the number of an individual's lifetime sexual partners. The increase in lifetime sexual partners is directly related to acquiring sexually transmitted infections (STIs), including HIV (Auvert, Carel, Males, & Ferry, 2002). A study conducted with Nigerian university students revealed the disturbing results that youth were poorly informed regarding sexual and reproductive health. Chng, Eke-Huber, Eaddy and Collins (2005) found that 72% of the sexually active adolescents never used condoms during sexual intercourse. While 60% of the youth believed condoms were effective in preventing HIV and other sexually transmitted infections, only 24% reported using condoms during every sexual encounter (Chng, Eke-Huber, Eaddy, & Collins, 2005).

Adolescent Sexual Behavior Trends

Adolescents present health educators with unique opportunities. Many behavioral nuances originate in adolescence and linger into adulthood. Approximately 70% of preventable deaths are due to health behaviors that were initiated in adolescence. United Nations Children's Fund (UNICEF) (2002) recognizes that young people are the key to fighting the world's HIV/AIDS epidemic. Sexual activity often begins in adolescence. Unmarried girls are often sexually active by the age of 15. Marriages in some parts of Africa are occurring with adult men and young adolescent girls. Adolescent boys and girls are less likely to protect themselves from sexually transmitted diseases than people in their mid to late twenties. Adolescents who have sex before the age of 15 (early sexual

initiation) are more likely to have sex with high-risk partners or multiple partners and less likely to use condoms.

With these facts in mind, researchers and health educators must make youth a priority population. Youth are at the center of the HIV epidemic, and they remain the greatest hope of combating the occurrence of new infections. Youth have the capacity and intelligence to adopt health behaviors when given the tools and the chance to do so (United Nations Children's Fund (UNICEF) et al., 2002).

Adolescent Risk

Even though knowledge of HIV/AIDS continues to rise among adolescents, they are often unsure how to adequately protect themselves from HIV/AIDS and other sexually transmitted infections. Adolescents tend to hold misconceptions about sex in general and even more misconceptions regarding the transmission of HIV. Adolescents do not perceive themselves to be at risk for contracting HIV and often harbor grandiose ideas of invincibility (Kates, Wilson, & Summers, 2004).

Transactional sex (i.e., monetary compensation for sexual favors) offers a dangerous risk for adolescent boys and girls in sub-Saharan Africa. Adolescents who engage in economically based sexual behavior place themselves at risk for HIV/STI infection. Men are less likely to practice preventative practices in their sexual activity (i.e., abstinence, limiting sex to one faithful partner, avoiding multiple partners, and

avoiding prostitutes) than women. Yet, women are less knowledgeable about condom use than men (Gupta & Mahy, 2003).

Of sub-Saharan Africa's decidedly large number of infected persons living with HIV, 75.8% of those are women between the ages of 15-24 years (Kates et al., 2004). Globally, adolescent girls are 1.6 times more likely than adolescent boys to be HIV positive. Adolescent girls are vulnerable to sexually transmitted infections due to a variety of reasons. Girls are more often coerced or forced into having sex with older men. Forced sex and the abrasions related to such violence leave adolescent girls at risk for contracting the HIV (UNAIDS Inter-Agency Task Team on Young People, 2004). In parts of Africa, including Sub-Saharan Africa, "sexual mixing" has become a major source of male – to – female STI disparities. Sexual mixing is defined as older men targeting and having sexual relationships with adolescent girls (United Nations Children's Fund (UNICEF) et al., 2002). Women are often at a greater risk for HIV infection because of the age differences between themselves and their male partners. This risk could be related to their partner's number of previous sexual encounters or to the imbalance of power in the relationship (Gregson et al., 2002).

In summary, Ajzen's Theory of Planned Behavior (TPB) provides a framework to predict reasoned behavior that may or may not be under an individual's volitional control. Condom use does involve the input of another, therefore TPB has been used to prediction condom use in adolescents and adults. Adolescents, because of numerous reasons, are at

great risk for contracting HIV/AIDS. In order to eradicate this illness, more research must be done on the adolescent population. This study discovers what effect attitudes toward condom use, subjective norms, and perceived behavioral control have on participant's intention to practice safer sex among adolescents in Ghana.

CHAPTER III

METHODOLOGY

The purpose of this study is to examine sexual behaviors among 3rd year senior secondary school students in the Greater Accra and Volta regions of Ghana, West Africa using the Theory of Planned Behavior. This research is designed to determine what effect attitudes toward condom use, subjective norms, and perceived behavioral control have on participant's intention to practice safer sex among adolescents in Ghana.

Study Design

This is a cross-sectional study on the sexual behavior of adolescents between the ages of 16-19 in senior secondary schools in Ghana.

Ghana's Global School-based Student Health Survey

Through the STEPwise approach to Risk Factor Surveillance (STEPS), the World Health Organization is working on bridging the adolescent data and information gap (World Health Organization, 2003). As part of the STEPS program in 2001, the Global School-based Student Health Survey (GSHS) was developed. The GSHS was developed in collaboration with United Nations AIDS (UNAIDS), United Nations Educational, Scientific and Cultural Organization (UNESCO), and United Nations Children's Fund (UNICEF), with technical assistance from the Centers of Disease Control and Prevention (CDC). One of the goals of the GSHS initiative is to establish trends in the prevalence of health behaviors and protective factors, including sexual activity, among youth ages 13 –

15 years. Data from GSHS can be used to evaluate school health and youth health promotion programs.

Beginning in 2006, Middle Tennessee State University (MTSU) in collaboration with, WHO and CDC have been assisting Ghana Education Service (GES) to setup a comprehensive surveillance system dedicated to monitoring health behaviors and protective factors among secondary school students. The primary instrument of the surveillance system is the GSHS. The GSHS was initially administered in Ghana in 2007, and for the first time in Ghana's history, there is comprehensive data on health behaviors such as sexual activity among junior secondary school students. However, as of the time that data was collected for this study, there were no comprehensive data on health behaviors including sexual activity among senior secondary school students in Ghana.

Population and Sampling Procedures

The eligible population for this study included 3rd level students at all senior secondary schools in the Greater Accra region and Volta region of Ghana (see Figure 4). These schools were divided into 2 groups, Volta schools and Greater Accra schools. For each group of schools, a two-stage cluster sampling design was utilized to produce a representative sample of school children in their 3rd year of senior secondary school. During the first stage, a sampling frame consisting of all eligible schools was created for each group. Schools were then selected with a probability proportional to enrollment size. That is, schools with a larger proportion of 3rd year senior secondary school students were

more likely to be selected than those with lower enrollment numbers. At the second stage, intact classes within the selected schools were randomly chosen to participate in the survey. A list of random numbers based on enrollment size was generated for the selection of classes in each participating school. The sample size for each group reflects a ± 5% margin of error. A weighting factor was applied to each student record to adjust for the varying probabilities of selection and to insure that the distributions of boys and girls in the sample were similar to the population. The sample size consisted of 902 Ghanaian students between the ages of 16 and 19 years.

Institutional Review Board Approval

Institutional Review Board approval was obtained from Middle Tennessee State University. Permission was also obtained from the Ministry of Education in Ghana, West Africa (see Appendix A).

Consent

Prior to being given the questionnaire, the students were read an informed consent form (see Appendix B.1) and signed a separate signature sheet. Parental consent was sought for the participants in the study (see Appendix B.2). School permission was obtained. Participants were informed they could stop taking the questionnaire at any time without the event of adverse consequences. The participants were informed about the general nature of the study and that the study posed no known risk to them. If students agreed to participate in the study they completed the questionnaire anonymously.

Participants were able to return the questionnaire separately from the signed consent in order to keep the form completely confidential.

Procedure

Questionnaires were completed by students during class time. Questionnaires were kept in a secure manner and separate from the informed consent form, which were kept in a secure manner as well.

Instrument

The participants were given the 2008 Ghana GSHS Sexual Behavior Supplementary Questionnaire (SRBQ). The items addressed the concepts present in the Theory of Planned Behavior. The questionnaire contains a total of 30 items. Two items obtained participant demographics (i.e., age and gender). Three items addressed participants' past sexual behavior (e.g., *Have you ever had sexual intercourse?*). One item obtained information regarding condom use (i.e., *The last time you had sexual intercourse, did you or your partner use condoms?*).

The subsequent items on the questionnaire all address concepts in the Theory of Planned Behavior and were adapted from previous research conducted with adolescents in South Africa (Jemmott III et al., 2007). Three items assess intentions to use condoms with answers ranging on a 5-point Likert-type scale from *very unlikely* to *very likely* and *disagree strongly* to *agree strongly* (e.g., *How likely is it that you will decide to use a condom if you have sex in the next 3 months?*). One item assesses attitudes towards

condom use. The answers are on a 5-point Likert-type scale ranging from *very bad idea* to *very good idea* (e.g., *How do you feel about using a condom if you have sex in the next 3 months?*). Another item assesses subjective norms with answers ranging from *disapprove strongly* to *approve strongly* (i.e., *Would most people who are important to you approve or disapprove of you using condoms in the next 3 months?*). Two items assess perceived behavioral control with answers ranging from *very hard* to *very easy* and *disagree strongly* to *agree strongly* (e.g., *How easy or hard would it be for you to use condoms?*).

Six items assess behavioral beliefs in two categories: prevention beliefs and hedonistic beliefs. The answers are on a 5-point Likert-type scale ranging from *disagree strongly* to *agree strongly* (e.g., *Condoms can prevent AIDS. & Sex still feels good if you use a condom.*). Four items assess normative beliefs with answers ranging from *disapprove strongly* to *approve strongly* (e.g., *My sexual partner would approve or disapprove of my using a condom if we had sex in the next 3 months.*).

Finally, six items assess control beliefs in two categories: negotiation skill beliefs and technical skill beliefs. The answers ranged on a Likert-type scale from *disagree strongly* to *agree strongly* (e.g., *I can get my partner to use a condom, even if my partner doesn't want to. & If I am sexually aroused, I can stop before sex to use a condom.*). A school code, the date of administration, a region code and an arbitrary participant

identification number (ID) were assigned to each questionnaire prior to administration (see Appendix C.1).

Instrument Reliability

Similar measures to those contained in the 2008 Ghana GSHS Sexual Behavior Supplementary Questionnaire (SRBQ) (see Appendix C.2) were used in each of the following studies.

Heeren, Jemmott III, Mandeya, and Tyler (2007) assessed 411 university students using items to measure constructs in the Theory of Planned Behavior. One hundred-sixty participants were from the United States, and 251 participants were from South Africa. The mean age for both samples was 22 years. Reliability was assessed for each of the items. Concerning all students in the sample, reliability was highest for the measure assessing condom use intentions (α =0.94) and lowest for the measure assessing attitude towards condom use (α = 0.80). The measures used to assess subjective norms and perceived behavioral control also reported high reliability (α = 0.86, 0.87, respectively). Concerning the American students, reliability was highest for the measure used to assess condom use intentions (α = 0.95) and lowest for the measure used to assess attitudes toward condom use (α = 0.74). The measures used to assess subjective norms and perceived behavioral control reported high reliability (α = 0.87, 0.89, respectively). Concerning the South African students, the same measures reported the highest reliability for each of the items measuring the constructs in the Theory of Planned Behavior. The

measure used to assess condom use intentions reported the highest reliability ($\alpha = 0.92$) and the measure used to assess attitudes toward condom use reported with the lowest reliability ($\alpha = 0.83$). The measure used to assess subjective norms ($\alpha = 0.85$) and perceived behavioral control ($\alpha = 0.87$) reported high reliabilities as well (Heeren et al., 2007).

In a study conducted by Villarruel, Jemmott III, Jemmott, and Ronis (2007) with sexually active Latino American adolescents, the Theory of Planned Behavior variables produced results at variance with the study noted by Heeren, et al., (2007). The study was conducted with 233 participants with a mean age of 15.4 years. The measure used to assess subjective norms were reported with high reliability ($\alpha = 0.88$). The measure used to assess control beliefs (i.e., perceived behavioral control) were reported with the lowest reliability ($\alpha = 0.65$) (Villarruel, Jemmott III, Jemmott, & Ronis, 2007).

Finally, in a study of adolescent South Africans, measures were used to assess the Theory of Planned Behavior variables among 390 participants with a mean age of 12.1 years. Control beliefs (i.e., negotiation skill) reported the highest reliability ($\alpha = .74$), while perceived behavioral control and behavioral beliefs (i.e., hedonistic beliefs) reported the lowest reliability ($\alpha = 0.63$). Reliability was not reported for the measures that only used one item to assess the construct in the study (Jemmott III et al., 2007).

These three studies were conducted using very similar measures based on the theory of planned behavior's predictor variables. These measures were not used in a

study involving the Ghanaian adolescent population. Although the three measures are similar, when it comes to the Theory of Planned Behavior, there is no particular measure that has been consistently used to assess sexual behavior.

Data Entry

Data were entered and converted to SPSS for analysis. To assist in the data entry process, computerized data entry screens were created to simulate the hard-copy data forms. The screens were developed using a Windows-based data entry program called EpiData version 3.2. Data entry programs identify and prohibit entry of data that are inconsistent with related responses or are out of the acceptable response range. Missing values were also specified and entered despite being outside the acceptable range. To minimize error due to missing data, data entry programs take into account skip patterns within the instruments and automatically record missing data for items that are skipped. Data entry logs track instruments. After data entry, quality control programs were run to check for internal consistency of related variables. Once the data were relatively clean, they were exported to SPSS for analysis.

Data Analysis

Descriptive statistics were calculated for the entire sample along with the descriptive statistics for each of the questions used in the 2008 Ghana GSHS Sexual Behavior Supplementary Questionnaire (SRBQ). A logistic regression was performed to test the predictive power of the Theory of Planned Behavior (TPB). Gender and whether

or not the participants are in boarding school were coded as dummy variables. Age was kept as a categorical variable. The variables representing TPB were also coded as categorical variables.

CHAPTER IV

RESULTS

Introduction

The purpose of this study is to examine sexual behaviors among 3rd year senior secondary school students in the Greater Accra and Volta regions of Ghana, West Africa using the Theory of Planned Behavior (TPB). This research examines what effect attitudes toward condom use, subjective norms, and perceived behavioral control have on participants' intention to practice safer sex. The instrument used in this study, the 2008 Ghana GSHS Sexual Behavior Supplementary Questionnaire (SRBQ), is a modified version of a survey based on TPB, which was administered to adolescents in South Africa (Jemmott III et al., 2007).

Data Weighting

The data were weighted so that results in the study would reflect the gender makeup of the 3rd year senior secondary school populations in both the Greater Accra and Volta regions. The original sample from the Volta region consisted of 60.4% high school boys and 39.6% high school girls. A weight of 0.9556 was applied to the boys and a weight of 1.0677 was applied to the girls in the Volta sample. The original sample of the Greater Accra region consisted of 59.3% high school boys and 40.7% high school girls. A weight of 0.9427 was applied to the boys in this region and a weight of 1.0835 was applied to the girls in the Greater Accra sample. After the weights were applied to the

data, the sample in the Volta region consisted of 57.7% boys and 42.3% girls. The sample in the Greater Accra region consisted of 55.9% boys and 44.1% girls.

Demographic Data

Table 1 presents the demographic characteristics of the participants in the study. Eleven (11) schools participated in the research study. Nine hundred and two (N = 902) participants completed the surveys administered by the researchers. Over half of the participants were boys (56.6%) and, most (63.36%) of the participants were between the ages of 17 and 18 years.

Table 1

Participant Characteristics, Ghana Adolescent Sexual Behavior (N = 902)

Characteristic	***n***	***%***
Demographics		
Gender		
Boys	510	56.60
Girls	391	43.40
Age		
16 years or younger	136	15.33
17 years old	294	33.15
18 years old	268	30.21
19 years old or older	189	21.31
Boarding School Status		
Not a Boarding School	104	11.53
Boarding School	798	88.47
Region		
Volta	336	37.25
Greater Accra	566	62.75
Intention to Use Condoms		
How likely is it that you will use a condom in the next 3 months?		
Very Unlikely	69	9.62
Unlikely	48	6.69
Neither likely nor unlikely	199	27.75
Likely	86	11.99
Very Likely	315	43.92

Table 1 (continued)

Characteristic	*n*	%
Intention to Use Condoms (continued)		
I will try my best to use condoms in the next 3 months.		
Disagree Strongly	104	12.62
Disagree	40	4.85
Neither Agree Nor Disagree	148	17.96
Agree	146	17.72
Agree Strongly	386	46.84
I plan to use condoms in the next 3 months.		
Disagree Strongly	101	12.55
Disagree	40	4.97
Neither Agree Nor Disagree	167	20.75
Agree	140	17.39
Agree Strongly	357	44.35
Attitude toward Condoms		
How do you feel about using condoms in the next 3 months?		
Very bad idea	109	13.68
Bad idea	28	3.51
Neither a bad idea nor good idea	206	25.85
Good idea	156	19.57
Very good idea	298	37.40
Subjective Norm		
Would most people important to you approve of you using condoms?		
Disapprove Strongly	131	16.31
Disapprove	57	7.10
Neither approve nor disapprove	184	22.91
Approve	151	18.80
Approve Strongly	280	34.88

Table 1 (continued)

Characteristic	*n*	%
Perceived Behavioral Control		
How easy is it for you to use condoms?		
Very hard	191	23.64
Hard	45	5.57
Neither hard nor easy	199	24.63
Easy	143	17.70
Very easy	230	28.47
I am sure I can use a condom when I have sex.		
Disagree Strongly	114	13.70
Disagree	50	6.01
Neither Agree Nor Disagree	107	12.86
Agree	244	29.33
Agree Strongly	317	38.11

Creation of the Intention Variable

Intention to use condoms was originally measured using three questions on the survey (see Table 1). A variable was then created to reflect two categories of participant intention. These two categories are *intention to use condoms* and *no intention to use condoms*. The *intention to use condoms* category was created by classifying participants who answered positively on all three questions as having *intention to use condoms*. If participants answered one or two of the questions, but not all three, they were classified as having *no intention to use condoms*. If participants answered negatively or neutrally on one, two, or all three questions, they were classified as having *no intention to use condoms*. If participants did not answer all three questions, they were classified as *missing* on the variable *intend* and were not included in further analyses (*missing, n* =

59). After the creation of this variable, 340 participants intended to use condoms in the next three months and 503 participants had no intention to use condoms in the next three months.

Collapsing the Categories of Theoretical Variables

The theoretical variables in this study were *attitudes toward condoms use, subjective norms, and perceived behavioral control.* Each question was answered in 5-point Likert-type scale with answer categories ranging from *strongly disagree* to *strongly agree, very bad idea* to *very good idea, strongly disapprove* to *strongly approve,* and *very hard* to *very easy*. These five category answer choices were collapsed into three categories by combining the positive answer choices into one category, combining the negative answer choices into another category and keeping the neutral category the same. The final answer categories ranged from *disagree* to *agree, bad idea* to *good idea, disapprove* to *approve* and *hard* to *easy*.

Initial Analysis

Crosstabs analyses showed a relationship between the independent variables in the study and the dependent variable, intention to use condoms. Table 2 shows the demographic variables (age, gender, region and boarding school status) and their relationship to participants who intend to use condoms and participants who do not intend to use condoms. Gender showed the only significant relationship ($\chi^2 = 18.30$, $df = 1$, $p < .001$). Boys were more likely to intend to use condoms than girls. Table 3 shows the

theoretical variables and their relationship to persons who intend to use condoms and participants who do not intend to use condoms. Each variable in Table 3 showed a significant relationship with participants who intend to use condoms and participants who do not intend to use condoms.

Table 2

Characteristics (%) of Participants by Intention to Use Condoms, Ghana Adolescent Sexual Behavior

Characteristic	No Intention to Use Condoms %	Intention to Use Condoms %	χ^2	*df*	*p*
Boarding School	(*n* = 502)	(*n* = 340)	0.49	1	0.486
Not Boarding School	62.89	37.11			
Boarding School	59.19	40.81			
Region	(*n* = 503)	(*n* = 340)	2.39	1	0.122
Volta	63.06	36.94			
Greater Accra	57.66	42.34			
Age	(*n* = 493)	(*n* = 336)	0.88	3	0.831
16 years or older	58.91	41.09			
17 years old	58.63	41.37			
18 years old	61.89	38.11			
19 years or older	57.87	42.13			
Gender	(*n* = 503)	(*n* = 339)	18.30	1	< .001
Boys	53.44	46.56			
Girls	68.04	31.96			

Table 3

Theoretical Variables (%) of Participants by Intention to Use Condoms, Ghana Adolescent Sexual Behavior

Characteristic	No Intention to Use Condoms %	Intention to Use Condoms %	χ^2	*df*	*p*
How do you feel about using condoms in the next 3 months?	(n = 459)	(n = 331)	257.01	2	< .001
Bad Idea	90.44	9.56			
Neither Bad Idea nor Good Idea	90.64	9.36			
Good Idea	33.70	66.30			
Would most people approve of you using condoms?	(n = 457)	(n = 333)	129.10	2	< .001
Disapprove	74.03	25.97			
Neither Approve nor Disapprove	84.15	15.85			
Approve	39.67	60.33			

Table 3 (continued)

Characteristic	No Intention to Use Condoms %	Intention to Use Condoms %	χ^2	*df*	*p*
I am sure I can use a condom when I have sex.	(*n* = 470)	(*n* = 335)	163.24	2	< .001
Disagree	93.04	6.96			
Neither Agree nor Disagree	85.71	14.29			
Agree	42.99	57.01			
Would most people approve of you using condoms?	(*n* = 457)	(*n* = 333)	129.10	2	< .001
Disapprove	74.03	25.97			
Neither Approve nor Disapprove	84.15	15.85			
Approve	39.67	60.33			
I am sure I can use a condom when I have sex.	(*n* = 470)	(*n* = 335)	163.24	2	< .001
Disagree	93.04	6.96			
Neither Agree nor Disagree	85.71	14.29			
Agree	42.99	57.01			

Table 3 (continued)

Characteristic	No Intention to Use Condoms %	Intention to Use Condoms %	χ^2	*df*	*p*
How easy is it for you to use condoms?	(n = 459)	(n = 329)	145.08	2	< .001
Hard	76.68	23.32			
Neither Hard nor Easy	79.90	20.10			
Easy	35.85	64.15			

Logistic Regression

The demographic variables and theoretical variables were entered into the logistic regression model. Interaction terms consisting of the demographic variables and the theoretical variables were entered separately into the model. Each interaction term was tested along with the main effect terms. None of the interaction terms were significant in the prediction of condom use intention. The resulting model included the study's main effects: *gender, age, boarding school status, region, attitudes toward the behavior, subjective norms*, and *perceived behavioral control.*

Main Effects Model

For Step 1 of the logistic regression, the model was able to explain 47% of the variation in *intention to use condoms* by the variables in the model ($R^2 = 0.470$) (see Table 4). This model is very effective in explaining intention to use condoms among Ghanaian adolescent boys and girls. Age, region, boarding school and gender were not significant predictors of condom use intention ($p = 0.115$, $p = 0.170$, $p = 0.372$, and $p = 0.079$, respectively). Three main effect terms were significant in the main effects model. When controlling for the other variables in the model, if a participant reported that it is a *bad idea* to use condoms in the next 3 months, the odds of intending to use a condom were significantly less than for participants who reported it was a *good idea* to use condoms in the next 3 months ($OR = 0.16$). When controlling for the other variables in the model, if a participant reported that it is *neither a good idea nor a bad idea* to use condoms in the next 3 months, the odds of intending to use a condom were significantly less than for participants who reported it was a *good idea* to use condoms in the next 3 months ($OR = 0.13$). When controlling for the other variables in the model, if a participant reported that most people important to them *neither approve nor disapprove* of them using condoms in the next 3 months, the odds of intending to use a condom were significantly less than for participants who reported most people important to them would *approve* of them using condoms in the next 3 months ($OR = 0.45$). Difficulty of condoms use was not a significant predictor for condom use intention in this model (condom use is hard, $p = 0.120$ and condom use is neither hard nor easy, $p = 0.193$). Lastly, when

controlling for the other variables in the model, if a participant reported that they disagree that they are sure they can use a condom, the odds of intending to use condoms were significantly less than for participants who agreed that they are sure they can use a condom ($OR = 0.17$). Participant reports of neither agreement nor disagreement with sure condom use were not significant predictors of condom use intention ($p = 0.260$) (see Table 4).

Variables Dropped from the Model

The four demographic variables were dropped from the model due to non-significant effect on whether participants intended to use condoms in the next 3 months. In this analysis, *intention to use condoms* was not affected by whether the participant was a boy or a girl. Also, *intention to use condoms* was not affected by whether participant was from the Volta or Greater Accra region. *Intention to use condoms* was not affected by whether the participant attended a boarding or non-boarding school. Finally, *intention to use condoms* was not affected by participants' reported age.

Reduced Model

For Step 2 in the logistic regression analysis, the model was able to explain 45.9% of the variation in *intention to use condoms* ($R^2 = 0.459$) (see Table 4). This model is an effective model for explaining intention to use condoms among Ghanaian adolescent boys and girls. This model contains one variable that held no significance in predicting intention to use condoms. The *perceived behavioral control* variable that attempted to

identify *ease of condom use* was left in the model because it was significant to the way in which perceived behavioral control was defined in the study. This variable was expected to mimic the *sure condom use* variable used to measure perceived behavioral control variable in the study. Ease of condom use did not significantly predict condom use intention for participants in the study. When controlling for the other variables in the model, if a participant reported that it is a *bad idea* to use condoms in the next 3 months, the odds of intending to use a condom were significantly less than for participants who reported it was a *good idea* to use condoms in the next 3 months ($OR = 0.15$). When controlling for the other variables in the model, if a participant reported that it is *neither a good idea nor a bad idea* to use condoms in the next 3 months, the odds of intending to use condoms were significantly less than for participants who reported it was a *good idea* to use condoms in the next 3 months ($OR = 0.13$). When controlling for the other variables in the model, if a participant reported that most people important to them *neither approve nor disapprove* of them using condoms in the next 3 months, the odds of intending to use condoms were significantly less than for participants who reported most people important to them *approve* of them using condoms in the next 3 months ($OR = 0.42$). When controlling for the other variables in the model, if a participant reported that they *disagree* that they are sure they can use a condom, the odds of intending to use a condom were significantly less than for participants who agreed that they were sure they could use a condom in the next 3 months ($OR = 0.18$) (see Table 4).

Table 4

Summary of Logistic Regression Analysis Predicting Intention to Use Condoms: Ghana Adolescent Sexual Behavior (N = 727)

Variable	*B*	*SE*	*Odds ratio*	*95% Confidence Interval*		*Wald statistic*	*p*
				Lower	*Upper*		
Step 1: Main Effects Model							
Main Effects:							
Intercept	3.64	1.91				3.62	0.057
Age	-0.16	0.10	0.85	0.69	1.04	2.48	0.115
Region	0.30	0.22	1.35	0.88	2.06	1.89	0.170
Boarding School	0.28	0.31	1.32	0.72	2.42	0.80	0.372
Gender	-0.35	0.20	0.71	0.48	1.04	3.09	0.079

Table 4 (continued)

Variable	*B*	*SE*	*Odds ratio*	*95% Confidence Interval*		*Wald statistic*	*p*
				Lower	*Upper*		
Attitudes toward Condoms							
Bad Idea	-1.85	0.37	0.16	0.08	0.33	24.42	<.001
Neither Good Idea Nor Bad Idea	-2.06	0.32	0.13	0.07	0.24	41.88	<.001
Good Idea							
Subjective Norms toward Using Condoms							
Disapprove	-0.04	0.28	0.96	0.56	1.67	0.02	0.891
Neither Approve nor Disapprove	-0.81	0.30	0.45	0.25	0.81	7.05	0.008
Approve							

Table 4 (continued)

Variable	*B*	*SE*	*Odds ratio*	*95% Confidence Interval*		*Wald statistic*	*p*
				Lower	*Upper*		
PBC Variable 1 - Easy Condom Use							
Hard	-0.42	0.27	0.66	0.38	1.12	2.42	0.120
Neither Hard nor Easy	-0.39	0.30	0.68	0.37	1.22	1.69	0.193
Easy							
PBC Variable 2 - Sure Can Use Condom							
Disagree	-1.78	0.37	0.17	0.08	0.35	22.57	<.001
Neither Agree nor Disagree	-0.44	0.39	0.64	0.30	1.39	1.27	0.260
Agree							

Table 4 (continued)

Variable	*B*	*SE*	*Odds ratio*	*95% Confidence Interval*		*Wald statistic*	*p*
				Lower	*Upper*		
Step 2: Reduced Model							
Intercept	1.05	0.13				65.44	<.001
Attitudes toward Condoms							
Bad Idea	-1.88	0.37	0.15	0.07	0.32	25.44	<.001
Neither Good Idea Nor Bad Idea	-2.01	0.32	0.13	0.07	0.25	40.48	<.001
Good Idea							
Subjective Norms toward Using Condoms							
Disapprove	-0.02	0.28	0.98	0.57	1.69	0.01	0.931
Neither Approve nor Disapprove	-0.87	0.30	0.42	0.23	0.75	8.39	0.004
Approve							

Table 4 (continued)

Variable	*B*	*SE*	*Odds ratio*	*95% Confidence Interval*		*Wald statistic*	*p*
				Lower	*Upper*		
PBC Variable 1 - Easy Condom Use							
Hard	-0.41	0.27	0.66	0.39	1.12	2.37	0.124
Neither Hard nor Easy	-0.40	0.30	0.67	0.38	1.21	1.76	0.184
Easy							
PBC Variable 2 - Sure Can Use Condom							
Disagree	-1.74	0.37	0.18	0.08	0.36	21.96	<.001
Neither Agree nor Disagree	-0.38	0.39	0.69	0.32	1.46	0.95	0.329
Agree							

Note:

For Step 1, Model Chi Square = 313,706, $df = 12$, ($p < .001$); -2 Log Likelihood = 406.161, Nagelkerke $R^2 = .470$

For Step 2, Model Chi Square = 304.765, $df = 8$, ($p < .001$); -2 Log Likelihood = 415.102, Nagelkerke $R^2 = .459$

Summary

Hypothesis 1 was partially supported by the results of this study. The more positive attitudes participants had toward condom use and the higher participants' subjective norms, the more likely it is that the participants intended to practice safer sex. Perceived behavioral control was inconclusive in the analysis. Hypothesis 2 was supported by the results in this study ($p < .001$). The more positive attitudes participants had toward condom use, the more likely it is that participants will intend to practice safer sex. Hypothesis 3 was supported by the results in this study ($p = 0.013$). The higher participants' subjective norms, the more likely it is that participants will intend to practice safer sex. Hypothesis 4 was partially supported by the results in this study. Two variables were used to measure perceived behavioral control. Only one variable was able to significantly predict intention to use condoms (*I am sure I can use a condom in the next 3 months*, $p = < .001$). The variable measuring how easy it was for participants to use a condom did not significantly predict intention to use condoms ($p = 0.201$). The final model in this study was able to predict 45.9% of the variation in intention to use condoms.

CHAPTER V

DISCUSSION

This study examines sexual risk behavior among adolescents in Ghana by applying the Theory of Planned Behavior. TPB is comprised of attitudes toward the behavior, subjective norms and perceived behavioral control. These aforementioned constructs all lead to an individual's intention to perform behavior. Intention is directly related to actual behavior, thus it is used to predict behavior in cross-sectional studies when actual behavior is not or cannot be measured. Generally, the stronger an individual's intention to perform a behavior, the more likely the individual is to perform the behavior (Ajzen, 1991, 2002; Fishbein & Ajzen, 1975; Smith & Stasson, 2000).

Demographics

The data in this study were weighted to allow generalization of results to the target population in Greater Accra and Volta regions. The sample comprised of 510 boys and 391 girls. Most (63.36%) of the participants were between the ages of 17 and 18 years. Most (62.75%) of the participants were from the Greater Accra region and almost all (88.47%) of the participants attended a boarding school. Only one school in the sample was a day school and did not have boarding students.

Initial Analysis

The crosstabs analysis showed a significant relationship between gender and participants' intention to use condoms. Girls were significantly less likely than boys to intend to use condoms. This significant relationship could give some insight into the high HIV/STI rates for adolescent girls in Ghana. Yet, this relationship does not show directionality nor does it relay causality. Also, this difference could account for the fact that boys have the separate task of putting a condom on. Girls may be less likely to intend to use condoms because most often they are not putting the condom on the penis.

Theoretical variables (attitudes toward condom use, subjective norms and perceived behavioral control) used in this analysis were significantly related to participants intention to use condoms. Each of the latter variables was significant at the .01 alpha level. If participants reported positively on these variables, they were more likely to intend to use condoms in the next three months as compared to participants who reported negatively or neutrally on the theoretical variables.

Logistic Regression Analysis

The logistic regression analysis was used to test the predictability of condom use intention based on the theoretical constructs of the Theory of Planned Behavior. The theory model was extremely effective in predicting condom use intention ($R^2 = 0.459$). Interaction terms did not significantly add to the prediction of condom use intention. The

control variables in the study did not significantly predict condom use intention. *Age, gender, region,* and *boarding school status* did not significantly impact whether Ghanaian adolescents intended to use condoms in the next three months.

Attitudes toward Condom Use

The *attitude toward condoms use* variable was a significant predictor of participants' intention to use condoms. Participants with positive attitudes toward condom use were more likely to intend to use condoms in the next three months. Attitudes toward condoms use seemed to be the strongest predictor of intention to use condoms. The results show that participants having more positive attitudes toward condoms can lead to greater willingness to use condoms during their next sexual encounters.

Subjective Norms

The *subjective norm* variable was a significant predictor of participants' intention to use condoms. Participants who thought the most important people around them would approve of their condom use were more likely to intend to use condoms in the next three months. The results show that participants' perception of approval by significant others is an essential determinant as to whether they intend to use condoms in the next sexual encounter.

Perceived Behavioral Control

The *perceived behavioral control* variable provided inconclusive results as a predictor of participants' intention to use condoms. Two variables were used to measure participants' perceived behavioral control. One variable assessed the extent to which a participant was *sure* they could use a condom if they had sex in the next three months. This variable was a significant predictor of participants' intention to use condoms. The second variable assesses if a participant thought it was *hard or easy* to use condoms if having sex in the next three months. This variable was not a significant predictor of participants' intention to use condoms. According to Jemmott III, et al., (2007) these two variables were purported to measure the construct that is perceived behavioral control. For this reason, these two variables were kept in the reduced logistic regression model. The results suggest that these two variables were not measuring the same construct. It is assumed that the observed inconsistency was due to improper item (question) construction as opposed to the lack of relevance of the construct.

Interpretations

The final model in this study was able to explain 46% of the variation in intention to use condoms among adolescents in Ghana. Previous research using the a similar instrument with South African adolescents was able to explain 37% of the variation in intention to use condoms (Jemmott III et al., 2007). The Theory of Planned Behavior

notes the importance of its constructs vary based on the behavior and population being studied (Ajzen, 1991). According to the theory and previous research, perceived behavioral control was expected to be the strongest predictor of condom use intention (Jemmott III et al., 2007; Smith & Stasson, 2000). Another study added self-efficacy, a similar construct to perceived behavioral control and found that self-efficacy was a strong predictor of condom use intention (Giles et al., 2005). However, the inconclusive or insignificant results of the perceived behavioral control/self-efficacy construct were similar to other studies conducted in Africa (Boer & Mashamba, 2005; Boer & Mashamba, 2007; Heeren et al., 2007).

Limitations

Boarding school status was removed from the model because it was insignificant in predicting condom use intention. One of the 11 schools participating in the study was classified as a day school. Meaning, students enrolled in a day school did not live on campus but returned home after the school day. Ten schools in the study were classified as boarding schools. The study sought to compare the differences in condom use intention between boarding schools (students who live on campus) and non-boarding schools. This comparison was flawed because there were too few participants classified as day students.

The current findings may not generalize to all Ghanaian adolescents. The participants of this study were third year senior high school students in two geographical regions of Ghana. It is possible that adolescents from other geographical regions present different findings related to condom use intention when applying the theory of planned behavior. Other culturally distinct areas of Ghana were not represented in this study. The researchers cannot say that the current results would generalize to the remaining eight geographical regions of Ghana, Africa.

Implications for HIV/AIDS and STI interventions

Despite the limitations of this study, the results suggest that the theory of planned behavior provides a useful theoretical framework for developing sexual risk interventions in the Ghanaian adolescent population. The results suggest that adolescent attitudes toward condom use and subjective norms are most useful for predicting intention to use condoms among boy senior high school boys and girls. It may not be necessary to focus on the skills of correctly using a condom when designing an intervention for Ghanaian adolescents. It would be more useful to focus on the behavioral and normative beliefs that underlie the use of condoms. Ultimately, researchers should focus on adolescents' attitudes toward condom use and their perception of the significant people in their lives' approval of their use of condoms.

Recommendations for Future Studies

It is recommended that future studies:

1) Develop a study examining sexual risk behaviors among younger adolescents using TPB (i.e., junior high school students, first and second year high school students).

2) Design and implement interventions for sexual health risk behavior based on TPB for adolescents in Ghana.

3) Conduct further research with the remaining eight geographical regions in Ghana using TPB.

4) Develop a study that compares boarding vs. day school students applying TPB.

Conclusion

This study demonstrated that the Theory of Planned Behavior (Ajzen, 1991, 2002) effectively predicted condom use intention among 3rd year senior high school students in the Greater Accra and Volta regions of Ghana, Africa.

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APPENDIXES

APPENDIX A.

IRB APPROVAL AND STUDY APPROVAL

APPENDIX A.1

MTSU IRB APPROVAL LETTER

Office of Compliance
P.O. Box 134
Middle Tennessee State University
Murfreesboro, Tennessee 37132
Office: (615) 494-8918 • Fax: (615) 898-5028
www.mtsu.edu/~research/compliance.html

MIDDLE TENNESSEE STATE UNIVERSITY

September 3, 2008

Dr. Andrew Owusu
Department of Health and Human Performance
Box 96

Re: Protocol Title: "Acculturation, Adaptation and Implementation of Global..."
Protocol Number: 07-024

Dear Investigator(s),

I have reviewed your research proposal identified above and your request for continuation. Approval for continuation is granted for one (1) year from the date of this letter.

Additionally, I have reviewed your requested changes and approve of the following revisions to your study:

- Increasing the age group to include students 16-19 years of age.
- The addition of questions 8., 9., 44., 52., 53., & 67. to the "2008 Ghana Senior High Global School-Based Student Health Survey."
- The addition of the 2008 Ghana GSHS Sexual Behavior Supplementary Questionnaire
- Adding six (6) focus group interviews. Please note, if your consent form changes for the focus group, you will have to send the revised form for approval.

You will need to submit an end-of-project report to the Office of Compliance upon completion of your research. Should the research not be complete by the expiration date, **September 3, 2009**, please submit a Progress Report for continued review prior to the expiration date.

According to MTSU Policy and Procedure, a researcher is defined as anyone who works with data or has contact with participants. Therefore, should any individuals be added to the protocol that would constitute them as being a researcher, please identify them and provide their certificate of training to the Office of Compliance. Any change to the protocol must be submitted to the IRB before implementing this change. Additionally, any unanticipated harms to subjects or adverse events must be reported to the Office of Compliance at (615) 494-8918.

Also, all research materials must be retained by the PI or faculty advisor (if the PI is a student) for at least three (3) years after study completion. Should you have any questions or need additional information, please do not hesitate to contact me.

Sincerely,
Tara M. Prairie
Compliance Officer

APPENDIX A.2

INVITATION FOR RESEARCH FROM GHANA EDUCATIONAL SERVICE

GHANA EDUCATION SERVICE

In case of reply the number and date of this letter should be quoted.

My Ref: GES/SHEP/GT-1/VOL 4/95

REPUBLIC OF GHANA

SHEP
Ministry Branch Post Office
P.O. Box M45
Accra
TEL: 021-244-229
20th August, 2008

Kari Campbell
Middle Tennessee State University

Dear Ms. Kari Campbell,

RE: Global School Health Survey Initiative in Ghana

In my capacity as the Director for the School Health Education Program (SHEP), I would like to invite you to Ghana for participation in the implementation of the 2nd phase of the Global School-Based Student Health Survey (GSHS) surveillance system in Ghana. This includes attending planning and coordination meetings, training of field administrators, data collection and dissemination of 2007 GSHS results.

For reference, the partnership responsible for implementation of the 2008 Ghana GSHS include, Ghana Education Service (GES [School Health Education Program unit]), the World Health Organization (WHO), the United States Centers for Disease Control and Prevention (CDC) and Middle Tennessee State University (MTSU).

As a representative from MTSU we are honored to welcome you to Ghana and sincerely appreciate MTSU's ongoing financial support for this project over the past 2 years.

If you have any questions or comments, you can reach me at +233-244-313-896 or cindysam06@yahoo.co.uk. Alternatively, you can consult with Dr. Andrew Owusu, a faculty member at MTSU and the country coordinator for the Ghana GSHS project. I understand you have the necessary contact information for Dr. Owusu.

Warm Regards,

Cynthia Bosumtwi-Sam (Mrs.)
Director, SHEP
For: Director General

APPENDIX A.3

LETTER OF INTRODUCTION FROM GHANA EDUCATIONAL SERVICE

GHANA EDUCATION SERVICE

In case of reply the number and date of this letter should be quoted.

My Ref: GES/SHEP/G-1/VOL.3/111

REPUBLIC OF GHANA

SHEP
Ministry Branch Post Office
P.O. Box M45
Accra
TEL: 021-244-229
22nd September, 2008

GLOBAL SCHOOL BASED STUDENT HEALTH (GSHS) SUPPLEMENTAL SURVEY
LETTER OF INTRODUCTION

This is to introduce to you Ms Kari Campbell, a Ph.D. student from the Middle Tennessee State University who is in the country to collect data among senior high school students in the under listed schools.

The GSHS project is a collaboration between the Ministry of Education, Science and Sports, the World Health Organization, the US Centers for Disease Control and Prevention, and Middle Tennessee State University. The questionnaire to be administered by Ms. Campbell is an off-shoot of the GSHS questionnaire. The purpose of the survey is to collect additional information to help authorities better understand behaviours and attitudes that contribute to unintended pregnancy and sexually transmitted infections among senior high school students.

We assure you of the full protection of the rights and privacy of the students involved. No personal or identifiable information will be collected.

Please accord her team the necessary support.

Thank you,

Yours faithfully,

Cynthia Bosumtwi-Sam
National Coordinator SHEP
For: Director General

HEADS OF SENIOR HIGH SCHOOLS

- **Accra Academy**
- **Accra High School**
- **Achimota School**
- **Labone Senior High School**
- **Nungua Senior High School**
- **Ada Senior High School**
- **Ghanata Senior High School**
- **Tema Senior High School**
- **Anlo Senior High School**
- **Mawuli Senior High School**
- **Three-Town Senior High School**
- **Sogakofe Senior Senior School**

APPENDIX B.

PARTICIPANT INFORMATION AND CONSENT FORMS

APPENDIX B.1

PARTICIPANT INFORMATION STATEMENT ON CONSENT

Kari M. Campbell
261 Barfield Crescent Rd., Apt. 2307
Murfreesboro, TN 37128
U.S.A

Approval No (07-024)

PARTICIPANT INFORMATION STATEMENT ON CONSENT

Examining Sexual Risk Behavior among Adolescents in Ghana: Applying the Theory of Planned Behavior

Participant selection and purpose of study
You have been invited to participate in a study designed to examine sexual behavior in senior secondary schools in Ghana. This investigation is being done in order to learn whether theory can be used to predict adolescents' intention to practice safer sex. You were selected as a possible participant in this study by virtue of you being a third year senior secondary school student.

Study Procedure
Participation in this study will involve the answering of a questionnaire (20 minutes). Completing this questionnaire is voluntary. Whether or not you answer the questions will not affect your grade in this class. If you are not comfortable answering a question, just leave it blank. In addition, no names will be required. In fact, **do not** write your name on the questionnaire.

Benefits and Risks

The benefit of this study to you is that, by virtue of being a participant, you may give important information regarding sexual behavior that could lead to effective prevention measures against HIV/AIDS infection. The results from this study will be used to develop interventions for the adolescent population in Ghana. There are no foreseeable risks to you as a participant.

Confidentiality and disclosure of information
Any information that is obtained in connection with this study and that can be identified with you will remain confidential and will be disclosed only with your permission, except as required by law. If you give us your permission by signing this document, we plan to discuss the results with other interested public health officials and possibly publish the outcome of the study in a reputable journal. In any publication, information will be provided in such a way that you cannot be identified.

Questions of issues about this study
Questions of inquiries about this study requiring contact other with, other than the principal investigator, may be directed to the Middle Tennessee State University, Office of Sponsored Programs, Suite 104 Midgett, P.O. Box 124, Murfreesboro, TN 37132. Tel (615) 898-5005 or to, Mrs. Cynthia Bosumtwi-Sam: Director, School Health Education Programmes, Ghana Education Service, P.O. Box M45, Accra, Ghana. Tel: 021244229.

Your consent
Your decision whether or not to participate will not prejudice your future relations with your school and will have no effect on your class grades. If you decide not to participate, you are free to withdraw your consent and to discontinue participation at any time without consequences.

If you have any questions, please feel free to ask us. If you have any additional questions later, you can reach me in the United States, at (001) 615-895-5857 or kmc3q@mtsu.edu. I will be happy to answer all questions.

You will be given a copy of this form to keep.

Please remember: Your participation in this research project is completely voluntary. If you do not want to participate you are free to withdraw from the study without any consequences. In addition, you can stop participating in this project at any time of your choosing even if you gave consent initially to participate.

APPENDIX B.2

PARENTAL INVITATION CONSENT FORM

Sexual Behavior Questionnaire
Parental/Guardian Permission Form

Introduction _____ school is participating in a Sexual Behavior Questionnaire.

Questionnaire This paper-and-pencil questionnaire is being given to a number of students aged 17-19 in the Greater Accra and Volta regions of the country. It asks students about sexual health behaviours and experiences. Students will not get any immediate benefit from taking part in this questionnaire. However, the results of this questionnaire will help students and other youth in the future. Questions will be asked about sexual behaviours that contribute to HIV infection, other STI, and unintended pregnancy.

Timeframe Students will be asked to fill out a paper questionnaire during regular class time and it will take about 15 to 20 minutes to complete.

Student privacy Survey procedures have been designed to protect student privacy. Students do not put their name on the questionnaire or answer sheet. No school or student is ever be mentioned by name in a report of the results. Some students may find some questions to be a little sensitive.

Voluntary participation We would like all selected students to take part in the survey, **but the questionnaire is voluntary.** No action will be taken against the school, you, or a student, if a student does not take part. Students can skip any question that they do not wish to answer. In addition, students may stop participating in the survey at any point without penalty.

Questions If you have any questions, please contact _____. Thank you for your cooperation.

Please complete and return the following permission form by [date] if you do NOT want your student to take part in the survey.

Student's name:

- I have read this form and know what the survey is about.
- [ ] My student may **NOT** take part in this survey.
- Parent/guardian signature: Date:

APPENDIX C.
SEXUAL RISK BEHAVIOR INSTRUCTIONS AND QUESTIONNAIRE

APPENDIX C.1

SEXUAL RISK BEHAVIOR QUESTIONNAIRE INSTRUCTIONS

Region ___ School ___ ___ ___ Class ___ ___

ID ___ ___ ___ Date ___ ___ / ___ ___ / 2008

2008 Ghana GSHS Senior High School Supplemental Survey

This survey is about your health and the things you do that may affect your health. Specifically, this it is about your attitudes and behavior towards sex. Students like you all over your region are completing this questionnaire. Please be aware that although the survey asks about sex, it is **NOT** promoting sex.

The information you give will be used to develop better programs to help protect young people like yourself. The information will also be used in the development of programmes designed to stop the spread of HIV among young people in Ghana.

DO NOT write your name on this questionnaire. The answers you give will be kept private. No one will know how you answer. **Please be honest.** Answer the questions based on what you really do and how you really feel. There are no right or wrong answers.

Completing the survey is voluntary. Your grade or mark in this class will not be affected whether or not you answer the questions. If you do not want to answer a question, just leave it blank.

Make sure to read every question. Circle the entire answer or statement that you choose. Use only the pencil you are given. When you are done, do what the person who is giving you the survey says to do.

Here is an example of how to answer questions on this questionnaire.

1. **Do fish live in water?**

   a. Yes

   b. No

PLEASE CIRCLE THE ENTIRE ANSWER

Thank you very much for your help

APPENDIX C.2

SEXUAL RISK BEHVAVIOR QUESTIONNAIRE

1. How old are you?
    a. 16 years old or younger
    b. 17 years old
    c. 18 years old
    d. 19 years old or older
2. What is your sex?
    a. Female
    b. Male
3. Have you **ever** had sexual intercourse (male penis in a female's vagina)?
    a. I have never had sexual intercourse
    b. Yes
    c. No
4. How old were you when you had sexual intercourse for the **first time**?
    a. I have never had sexual intercourse
    b. 11 years old or younger
    c. 12 years old
    d. 13 years old
    e. 14 years old
    f. 15 years old
    g. 16 years old or older
5. **During your life**, with how many people have you had sexual intercourse?
    a. I have never had sexual intercourse
    b. 1 person
    c. 2 people
    d. 3 people
    e. 4 people
    f. 5 people
    g. 6 or more people
6. **During the past 12 months**, have you had sexual intercourse?
    a. Yes
    b. No
7. The **last time** you had sexual intercourse, did you or your partner use condom?
    a. I have never had sexual intercourse
    b. Yes
    c. No
8. How likely is it that you will decide to use a condom **if** you have sex in the next 3 months?
    a. Very unlikely
    b. Unlikely
    c. Neither unlikely nor likely
    d. Likely
    e. Very likely

Please rate how strongly you agree or disagree with each of the following statements for items 9 and 10.

9. I will try my best to use condoms **if** I have sex in the next 3 months.
    a. Disagree strongly
    b. Disagree
    c. Neither disagree nor agree
    d. Agree
    e. Agree strongly
10. I plan to use condoms **if** I have sex in the next 3 months.
    a. Disagree strongly
    b. Disagree
    c. Neither disagree nor agree
    d. Agree
    e. Agree strongly

11. How do you feel about using a condom **if** you have sex in the next 3 months?

    a. Very bad idea
    b. Bad idea
    c. Neither a bad idea nor a good idea
    d. Good idea
    e. Very good idea

12. Would most people who are **important** to you approve or disapprove of you using condoms in the next 3 months?

    a. Disapprove strongly
    b. Disapprove
    c. Neither disapprove nor approve
    d. Approve
    e. Approve strongly

13. How easy or hard would it be for **you** to use condoms?

    a. Very hard
    b. Hard
    c. Neither hard nor easy
    d. Easy
    e. Very easy

Please rate how strongly you agree or disagree with each of the following statements for items 14 through 20.

14. I am sure that I **can** use a condom when I have sex.

    a. Disagree strongly
    b. Disagree
    c. Neither disagree nor agree
    d. Agree
    e. Agree strongly

15. Condoms **can** prevent AIDS.

    a. Disagree strongly
    b. Disagree
    c. Neither disagree nor agree
    d. Agree
    e. Agree strongly

16. Condoms help prevent STD (sexually transmitted diseases).

    a. Disagree strongly
    b. Disagree
    c. Neither disagree nor agree
    d. Agree
    e. Agree strongly

17. Condoms help prevent pregnancy.

    a. Disagree strongly
    b. Disagree
    c. Neither disagree nor agree
    d. Agree
    e. Agree strongly

18. Sex still feels good **if** you use a condom.

    a. Disagree strongly
    b. Disagree
    c. Neither disagree nor agree
    d. Agree
    e. Agree strongly

19. Sex does **not** feel good **if** you use a condom.

    a. Disagree strongly
    b. Disagree
    c. Neither disagree nor agree
    d. Agree
    e. Agree strongly

20. Condoms ruin the mood because you have to stop to put one on.

    a. Disagree strongly
    b. Disagree
    c. Neither disagree nor agree
    d. Agree
    e. Agree strongly

Please rate how strongly others would approve or disapprove with each of the following statements for items 21 through 24.

21. My **sexual partner** would approve or disapprove of my using a condom **if** I had sex in the next 3 months.

    a. Disapprove strongly
    b. Disapprove
    c. Neither disapprove nor approve
    d. Approve
    e. Approve strongly

22. My **mother** would approve or disapprove of my using a condom **if** I had sex in the next 3 months.

    a. Disapprove strongly
    b. Disapprove
    c. Neither disapprove nor approve
    d. Approve
    e. Approve strongly

23. My **father** would approve or disapprove of my using a condom **if** I had sex in the next 3 months.

    a. Disapprove strongly
    b. Disapprove
    c. Neither disapprove nor approve
    d. Approve
    e. Approve strongly

24. My **friends** would approve or disapprove of my using a condom **if** I had sex in the next 3 months.

    a. Disapprove strongly
    b. Disapprove
    c. Neither disapprove nor approve
    d. Approve
    e. Approve strongly

Please rate how strongly you agree or disagree with each of the following statements for items 25 through 30.

25. I can get my partner to use a condom, even **if** my partner doesn't want to.

    a. Disagree strongly
    b. Disagree
    c. Neither disagree nor agree
    d. Agree
    e. Agree strongly

26. I can say to my partner that we should use a condom.

    a. Disagree strongly
    b. Disagree
    c. Neither disagree nor agree
    d. Agree
    e. Agree strongly

27. I can use a condom without fumbling around.

    a. Disagree strongly
    b. Disagree
    c. Neither disagree nor agree
    d. Agree
    e. Agree strongly

28. **If** I am sexually aroused, I can stop before sex to use a condom.

    a. Disagree strongly
    b. Disagree
    c. Neither disagree nor agree
    d. Agree
    e. Agree strongly

29. I can use a condom, even **if** the room is dark.

    a. Disagree strongly
    b. Disagree
    c. Neither disagree nor agree
    d. Agree
    e. Agree strongly

30. I can use a condom without ruining the mood.

    a. Disagree strongly
    b. Disagree
    c. Neither disagree nor agree
    d. Agree
    e. Agree strongly

APPENDIX D.

DEFINITION OF VARIABLES AND CODING FOR THE SRBQ

APPENDIX D.1

DEFINITIONS OF VARIABLES AND CODING FOR THE SRBQ

*ID ----------

TYPE: NUMBER
RANGE/LEGAL: 000-999

REGION ----------

TYPE: NUMBER
VALUE LABELS: LABEL_REGION
RANGE/LEGAL: 1-2

VALUE	LABEL
1	VOLTA
2	GREATER ACCRA

*SCHOOL ----------

TYPE: NUMBER
RANGE/LEGAL: 1-11,-9

*CLASS ----------

TYPE: NUMBER
RANGE/LEGAL: 1-40,-9

*Note: No labels were assigned to this variable.

AGE ---------- HOW OLD ARE YOU?

TYPE: NUMBER
VALUE LABELS: LABEL_AGE
RANGE/LEGAL: 1-4,-9

VALUE	LABEL
1	16 YEARS OLD OR YOUNGER
2	17 YEARS OLD
3	18 YEARS OLD
4	19 YEARS OLD OR OLDER
-9	MISSING

GENDER ---------- WHAT IS YOUR SEX?

TYPE: NUMBER
VALUE LABELS: LABEL_GENDER
RANGE/LEGAL: 1-2,-9

VALUE	LABEL
1	FEMALE
2	MALE
-9	MISSING

SEXEVER ---------- HAVE YOU EVER HAD SEXUAL INTERCOURSE?

TYPE: NUMBER
VALUE LABELS: LABEL_SEXEVER
RANGE/LEGAL: 1-3,-9

VALUE	LABEL
1	I HAVE NEVER HAD SEXUAL INTERCOURSE
2	YES
3	NO
-9	MISSING

AGEFIRST --------- HOW OLD WE ARE YOU WHEN YOU HAD SEXUAL INTERCOURSE FOR THE FIRST TIME?

TYPE: NUMBER
VALUE LABELS: LABEL_AGEFIRST
RANGE/LEGAL: 1-7,-9

VALUE	LABEL
1	I HAVE NEVER HAD SEXUAL INTERCOUSE
2	11 YEARS OLD OR YOUNGER
3	12 YEARS OLD
4	13 YEARS OLD
5	14 YEARS OLD
6	15 YEARS OLD
7	16 YEARS OLD OR OLDER
-9	MISSING

LIFEPTNR --------- DURING YOUR LIFE, WITH HOW MANY PEOPLE HAVE YOU HAD SEXUAL INTERCOURSE WITH?
TYPE: NUMBER
VALUE LABELS: LABEL_LIFEPTNR
RANGE/LEGAL: 1-7,-9

VALUE	LABEL
1	I HAVE NEVER HAD SEXUAL INTERCOU
2	1 PERSON
3	2 PEOPLE
4	3 PEOPLE
5	4 PEOPLE
6	5 PEOPLE
7	6 OR MORE PEOPLE
-9	MISSING

SEXYEAR ---------- DURING THE PAST 12 MONTHS, HAVE YOU HAD SEXUAL INTERCOURSE?

TYPE: NUMBER
VALUE LABELS: LABEL_SEXYEAR
RANGE/LEGAL: 1-2,-9

VALUE	LABEL
1	YES
2	NO
-9	MISSING

CDMLAST --------- THE LAST TIME YOU HAD SEXUAL INTERCOURSE, DID YOU OR YOUR PARTNER USE A CONDOM?

TYPE: NUMBER
VALUE LABELS: LABEL_CDMLAST
RANGE/LEGAL: 1-3,-9

VALUE	LABEL
1	I HAVE NEVER HAD SEXUAL INTERCOU
2	YES
3	NO
-9	MISSING

CDMNEXT ---------- HOW LIKELY IS IT THAT YOUR WILL DECIDE TO USE A CONDOM IF YOU HAVE SEXUAL INTERCOURSE?

TYPE: NUMBER
VALUE LABELS: LABEL_CDMNEXT
RANGE/LEGAL: 1-5,-9

VALUE	LABEL
1	VERY UNLIKELY
2	UNLIKELY
3	NEITHER UNLIKELY NOR LIKELY
4	LIKELY
5	VERY LIKELY
-9	MISSING

CDMTRY --------- I WILL TRY MY BEST TO USE CONDOMS IF I HAVE SEX IN THE NEXT 3 MONTHS.

TYPE: NUMBER
VALUE LABELS: LABEL_CDMTRY
RANGE/LEGAL: 1-5,-9

VALUE	LABEL
1	DISAGREE STRONGLY
2	DISAGREE
3	NEITHER DISAGREE NOR AGREE
4	AGREE
5	AGREE STRONGLY
-9	MISSING

CDMPLAN ---------- I PLAN TO USE CONDOMS IF I HAVE SEX IN THE NEXT 3 MONTHS.

TYPE: NUMBER
VALUE LABELS: LABEL_CDMPLAN
RANGE/LEGAL: 1-5,-9

VALUE	LABEL
1	DISAGREE STRONGLY
2	DISAGREE
3	NEITHER DISAGREE NOR AGREE
4	AGREE
5	AGREE STRONGLY
-9	MISSING

CDMATT --------- HOW DO YOU FEEL ABOUT USING A CONDOM IF YOU HAVE SEX IN THE NEXT 3 MONTHS?

TYPE: NUMBER
VALUE LABELS: LABEL_CDMATT
RANGE/LEGAL: 1-5,-9

VALUE	LABEL
1	VERY BAD IDEA
2	BAD IDEA
3	NEITHER A BAD IDEA NOR A GOOD ID
4	GOOD IDEA
5	VERY GOOD IDEA
-9	MISSING

CDMNORM -------- WOULD MOST PEOPLE WHO ARE IMPORTANT TO YOU APPROVE OR DISAPPROVE OF YOU USING CONDOMS?

TYPE: NUMBER
VALUE LABELS: LABEL_CDMNORM
RANGE/LEGAL: 1-5,-9

VALUE	LABEL
1	DISAPPROVE STRONGLY
2	DISAPPROVE
3	NEITHER DISAPPROVE NOR APPROVE
4	APPROVE
5	APPROVE STRONGLY
-9	MISSING

USECDM ---------- HOW EASY OR HARD WOULD IT BE FOR YOU TO USE CONDOMS?

TYPE: NUMBER
VALUE LABELS: LABEL_Q13
RANGE/LEGAL: 1-5,-9

VALUE	LABEL
1	VERY HARD
2	HARD
3	NEITHER HARD NOR EASY
4	EASY
5	VERY EASY
-9	MISSING

SURECDM ---------- I AM SURE THAT I CAN USE A CONDOM WHEN I HAVE SEX.

TYPE: NUMBER
VALUE LABELS: LABEL_SURECDM
RANGE/LEGAL: 1-5,-9

VALUE	LABEL
1	DISAGREE STRONGLY
2	DISAGREE
3	NEITHER DISAGREE NOR AGREE
4	AGREE
5	AGREE STRONGLY
-9	MISSING

AIDS ---------- CONDOMS CAN PREVENT AIDS.

TYPE: NUMBER
VALUE LABELS: LABEL_AIDS
RANGE/LEGAL: 1-5,-9

VALUE	LABEL
1	DISAGREE STRONGLY
2	DISAGREE
3	NEITHER DISAGREE NOR AGREE
4	AGREE
5	AGREE STRONGLY
-9	MISSING

STD ---------- CONDOMS HELP PREVENT STD.

TYPE: NUMBER
VALUE LABELS: LABEL_STD
RANGE/LEGAL: 1-5,-9

VALUE	LABEL
1	DISAGREE STRONGLY
2	DISAGREE
3	NEITHER DISAGREE NOR AGREE
4	AGREE
5	AGREE STRONGLY
-9	MISSING

PREG ---------- CONDOMS HELP PREVENT PREGNANCY.

TYPE: NUMBER
VALUE LABELS: LABEL_Q17
RANGE/LEGAL: 1-5,-9

VALUE	LABEL
1	DISAGREE STRONGLY
2	DISAGREE
3	NEITHER DISAGREE NOR AGREE
4	AGREE
5	AGREE STRONGLY
-9	MISSING

FEELGD ---------- SEX STILL FEELS GOOD IF YOU USE A CONDOM.

TYPE: NUMBER
VALUE LABELS: LABEL_Q18
RANGE/LEGAL: 1-5,-9

VALUE	LABEL
1	DISAGREE STRONGLY
2	DISAGREE
3	NEITHER DISAGREE NOR AGREE
4	AGREE
5	AGREE STRONGLY
-9	MISSING

FEELBAD ---------- SEX DOES NOT FEEL GOOD IF YOU USE A CONDOM.

TYPE: NUMBER
VALUE LABELS: LABEL_FEELBAD
RANGE/LEGAL: 1-5,-9

VALUE	LABEL
1	DISAGREE STRONGLY
2	DISAGREE
3	NEITHER DISAGREE NOR AGREE
4	AGREE
5	AGREE STRONGLY
-9	MISSING

RNMOOD ---------- CONDOMS RUIN THE MOOD BECAUSE YOU HAVE TO STOP TO PUT ONE ON.

TYPE: NUMBER
VALUE LABELS: LABEL_RNMOOD
RANGE/LEGAL: 1-5,-9

VALUE	LABEL
1	DISAGREE STRONGLY
2	DISAGREE
3	NEITHER DISAGREE NOR AGREE
4	AGREE
5	AGREE STRONGLY
-9	MISSING

PTNRNM --------- MY SEXUAL PARTNER WOULD APPROVE OR DISAPPROVE OF MY USING A CONDOM IF WE HAD SEX IN THE NEXT 3 MONTHS.

TYPE: NUMBER
VALUE LABELS: LABEL_PTNRNM
RANGE/LEGAL: 1-5,-9

VALUE	LABEL
1	DISAPPROVE STRONGLY
2	DISAPPROVE
3	NEITHER DISAPPROVE NOR APPROVE
4	APPROVE
5	APPROVE STRONGLY
-9	MISSING

MTHRNM -------- MY MOTHER WOULD APPROVE OR DISAPPROVE OF MY USING A CONDOM IF I HAD SEX IN THE NEXT 3 MONTHS.

TYPE: NUMBER
VALUE LABELS: LABEL_MTHRNM
RANGE/LEGAL: 1-5,-9

VALUE	LABEL
1	DISAPPROVE STRONGLY
2	DISAPPROVE
3	NEITHER DISAPPROVE NOR APPROVE
4	APPROVE
5	APPROVE STRONGLY
-9	MISSING

FTHRNM -------- MY FATHER WOULD APPROVE OR DISAPPROVE OF MY USING A CONDOM IF I HAD SEX IN THE NEXT 3 MONTHS.

TYPE: NUMBER
VALUE LABELS: LABEL_FTHRNM
RANGE/LEGAL: 1-5,-9

VALUE	LABEL
1	DISAPPROVE STRONGLY
2	DISAPPROVE
3	NEITHER DISAPPROVE NOR APPROVE
4	APPROVE
5	APPROVE STRONGLY
-9	MISSING

FRNDNM --------- MY FRIENDS WOULD APPROVE OR DISAPPROVE OF MY USING CONDOM IF I HAD SEX IN THE NEXT 3 MONTHS.

TYPE: NUMBER
VALUE LABELS: LABEL_FRNDNM
RANGE/LEGAL: 1-5,-9

VALUE	LABEL
1	DISAPPROVE STRONGLY
2	DISAPPROVE
3	NEITHER DISAPPROVE NOR APPROVE
4	APPROVE
5	APPROVE STRONGLY
-9	MISSING

CDMNEGO -------- I CAN GET MY PARTNER TO USE A CONDOM, EVEN IF MY PARTNER DOESN'T WANT TO.

TYPE: NUMBER
VALUE LABELS: LABEL_CDMNEGO
RANGE/LEGAL: 1-5,-9

VALUE	LABEL
1	DISAGREE STRONGLY
2	DISAGREE
3	NEITHER DISAGREE NOR AGREE
4	AGREE
5	AGREE STRONGLY
-9	MISSING

CDMDISC ---------- I CAN SAY TO MY PARTNER THAT WE SHOULD USE A CONDOM.

TYPE: NUMBER
VALUE LABELS: LABEL_CDMDISC
RANGE/LEGAL: 1-5,-9

VALUE	LABEL
1	DISAGREE STRONGLY
2	DISAGREE
3	NEITHER DISAGREE NOR AGREE
4	AGREE
5	AGREE STRONGLY
-9	MISSING

FUMBCDM ---------- I CAN USE A CONDOM WITHOUT FUMBLING AROUND.

TYPE: NUMBER
VALUE LABELS: LABEL_FUMBCDM
RANGE/LEGAL: 1-5,-9

VALUE	LABEL
1	DISAGREE STRONGLY
2	DISAGREE
3	NEITHER DISAGREE NOR AGREE
4	AGREE
5	AGREE STRONGLY
-9	MISSING

STOPCDM ---------- IF I AM SEXUALLY AROUSED, I CAN STOP BEFORE SEX TO USE A CONDOM.

TYPE: NUMBER
VALUE LABELS: LABEL_STOPCDM
RANGE/LEGAL: 1-5,-9

VALUE	LABEL
1	DISAGREE STRONGLY
2	DISAGREE
3	NEITHER DISAGREE NOR AGREE
4	AGREE
5	AGREE STRONGLY
-9	MISSING

DARKCDM ---------- I CAN USE A CONDOM, EVEN IF THE ROOM IS DARK.

TYPE: NUMBER
VALUE LABELS: LABEL_DARKCDM
RANGE/LEGAL: 1-5,-9

VALUE	LABEL
1	DISAGREE STRONGLY
2	DISAGREE
3	NEITHER DISAGREE NOR AGREE
4	AGREE
5	AGREE STRONGLY
-9	MISSING

CDMRUIN ---------- I CAN USE A CONDOM WITHOUT RUINING THE MOOD.

TYPE: NUMBER
VALUE LABELS: LABEL_CDMRUIN
RANGE/LEGAL: 1-5,-9

VALUE	LABEL
1	DISAGREE STRONGLY
2	DISAGREE
3	NEITHER DISAGREE NOR AGREE
4	AGREE
5	AGREE STRONGLY
-9	MISSING