Implications of Sexual Risk Assessment for HIV Intervention Planning:
The Utility of the Expanded AIDS Risk Reduction Model among Young Ghanaian Women

by

Edna Aryee

A thesis submitted in conformity with the requirements for the degree of Doctor of Philosophy (Ph.D.)

Department of Applied Psychology and Human Development
University of Toronto, OISE

© Copyright by Edna Aryee, 2014
Abstract ID: 10997

Edna Aryee

Implications of Sexual Risk Assessment for HIV Intervention Planning:
The Utility of the Expanded AIDS Risk Reduction Model among Young Ghanaian Women

Doctor of Philosophy (Ph.D.)
Department of Applied Psychology and Human Development
University of Toronto, OISE, 2014

Background & Study Objective(s): Increasing HIV/AIDS knowledge alone does not stem the spread of HIV among young Ghanaian women. Rather, the solution lies in enhancing the individual’s appreciation of her own risk and self-efficacy for reducing risky behaviours (Sallar, 2001). The current dissertation aims to understand the factors related to HIV/AIDS sexual risk behaviour among young Ghanaian women. In an expansion of the AIDS Risk Reduction Model (ARRM; Catania, 1990), psychological (sexual assertiveness and self-esteem), interpersonal (resiliency), and cultural variables (spirituality, cultural mistrust, gender roles, childhood sexual abuse, social health, and Africentrism) were identified to assist in the prediction of stage-specific variables at each stage (i.e., Labeling, Commitment, and Enactment) of the ARRM. Sexual risk behaviour was further examined in relationship to diverse demographic variables.

Methods: Using quantitative exploratory survey and convenience sampling methods, two hundred (N=200) female participants were recruited at three institutions in Accra, Ghana.

Results: Labeling: Labeling was positively related to Peer Norm. However, Labeling was negatively related HIV/AIDS Risk Knowledge and Susceptibility to HIV. Further, there was a positive relationship between Labeling and HIV Testing (at the Commitment Stage). The overall
regression for the expanded predictors model on Labeling was not statistically significant. Education and age accounted for the bulk of the explained variance at this stage.

**Commitment**: HIV testing intention was negatively related to age and marital status. However, it was positively related to education. Overall, neither the ARRM nor the expanded ARRM variables predicted Commitment. However, there was a positive relationship between Self-esteem and Commitment.

**Enactment**: Condom Use Self-efficacy was positively related to age. Education was positively related to Enactment. For the expanded predictors, Perception of Sexual Enjoyment, Sexual Communication, Spirituality and Self-Esteem were negatively related to Enactment. There was also a positive relationship between Sexual Assertiveness and Enactment.

**Conclusion**: Together, findings validated the Expanded ARRM as a fairly reliable model that helped in the coherent understanding of psychosocial and cultural issues that increase sexual vulnerability in young Ghanaian women. Overall, this study contributes to efforts to promote the use of culturally appropriate strategies in HIV prevention in Ghana.
Acknowledgments

Resiliency, hard work, integrity, and patience are the bedrocks of my success in life, not only because of my experiences as a young African woman who has been “thrown under the bus a couple of times” but also because attaining a Ph.D. in Psychology from a prestigious Canadian university has been a test of my perseverance, bravery, and fortitude. My faith in God has become stronger, and throughout my years of training. I’m truly thankful to God, Ghana, and Canada, as well as to the University of Toronto for this wonderful life opportunity. Several individuals are to be thanked for their assistance and contribution to my dissertation and entire academic journey. I would like to acknowledge Dr. Roy Gillis, my former advisor, for the support he gave me at the outset of my journey. To my supervisors, examiners and committee members, Drs. Njoki Wane and Margaret Schneider, I am deeply grateful for your gentle, warm, and sincere guidance and mentorship. You held my hand along a path that looked extremely challenging, hopeless, and helpless. Thank you! Thank you to my dear committee member, Dr. Niva Piran, who is known among my colleagues as “the professor with the gentle heart,” and who stood firm with me when I had no hope and thought all was lost. I am truly blessed to have you on my committee. I would like to thank Dr. Winston Husbands, my mentor, for believing in my work and inspiring me to stay focused. My deepest appreciation goes to Dr. Olesya Falenchuk for helping me with the data analyses. I would also like to express my gratitude to Prof. Doug McDougall, Prof. Andrew Allen and Dr. Ann Lopez for taking time to read and evaluate my work.

I would like to acknowledge Dr. Gill Einstein, director of the Gender and Health Collaborative Program, as well as Dr. Janice Dumont for their immense support and leadership. To all my mentors and professors in Ghana and North America, Drs. Charity Akotia, S.A. Danquah, George Sefa Dei, Joseph Amponsah, Ato Quayson, Joseph Mensah, Roy Moodley, Lana Stemac,
LaRon Nelson, Donna Ferguson, Natasha Browne, Jesmen Mendoza, Dave Simourd, Tony Eccles, Dave Simourd, and Linda Simourd, I would like to thank you for all your feedback, prayers, and wisdom.

I would like to express my deepest appreciation to my family— my sister, mother, father (demised) grandmother, nieces, nephews, uncles, aunts and cousins for their support and prayers. You have patiently watched my growth and witnessed the realization of my childhood dream. To the good friends who persistently cheered me on, words cannot thank you enough— Justine Joseph, Tsatsu Ofoe, Albert Botchway, Elizabeth Achampong, Robyn Leggee, Paul Issiaku, and Nanayaa Nyarko. Thank you for your endless understanding of my pursuits of higher education and life accomplishments. To my colleagues, particularly, Joel Babalola, Latif Rah, Phillip Baiden, Dina Buttu, Iryna Ivanova, Francis Akena, Ahmed Ilmi, and Amy Nunoo-Amarteyfio, I would like to express my appreciation for your support and kindness. To my friends and mentors at CAMH, Akwatu Khenti, Norman MacDonnell, Lew Golding, Donna Alexander, and Ayo Okpoye, I deeply appreciate your support and encouragement. I would also like to thank my entire community and church family, especially the Rev. Joseph Basie, Rev. Leeford Boahen, Nana Frimpong, the Abiw family, Osei Akoto family and Bonful for praying with me. Finally, I wish to thank the young women who participated in this study— thank you for your patience and for taking the time to help me understand the sexual behaviours of young women in Ghana.

It is also very vital for me to mention that without the involvement and support of the Director of Student Services at OISE, Dr. Carrie Cassels, and her team including Ms. Lise Watson, Ms. Margaret Brenner, and Ms. Megan McIntosh, I would not have completed this journey. They stood by my side when I thought all hope was lost. Akpe! (Ghanaian expression for thank you!). Finally, I wish to honour Professor Stephen Obeng Gyimah (departed away in 2013) for his novel
contribution to cross-cultural HIV research in Ghana and Canada. I would like to thank him for allowing me to use some of his documents prior to his passing.
# Table of Contents

Abstract .......................................................................................................................... ii-iii
Acknowledgement ......................................................................................................... iv-vi
Table of Contents .......................................................................................................... vii-xi
List of Tables ................................................................................................................. xii-xiii
List of Figures ............................................................................................................... xiv
List of Appendices ........................................................................................................ xv
Dedication ...................................................................................................................... xvi

Chapter One: Introduction ............................................................................................ 1
  1.0: Introduction ........................................................................................................... 1-3
  1.1: Personal Point ...................................................................................................... 5-7
  1.2: Background ......................................................................................................... 7-13
  1.3: Women in Ghana ................................................................................................. 13-14
  1.4: Problem Statement .............................................................................................. 14-15
  1.5: Research Question ............................................................................................... 15-16
  1.6: Relevance ............................................................................................................ 15-16
  1.7: Implications of the Study .................................................................................... 16-18
  1.8: Outline of Dissertation ......................................................................................... 18-19

Chapter Two: Literature Review .................................................................................. 20
  2.0: Introduction .......................................................................................................... 20
  2.1: Understanding HIV Risk Behaviour ................................................................. 21-22
  2.2: Understanding Safer-Sex Behaviour ................................................................. 23

Literature Review .......................................................................................................... 24
2.2.3: Sexual Behaviour and Related Factors ......................................................... 24-26

AIDS Knowledge .................................................................................. 26-28
Perceived Risk ..................................................................................... 28-32
Condom Use ......................................................................................... 32-35
Female Poverty and HIV/AIDS .............................................................. 36-37
Culture, Patriarchy, and Gender Roles .................................................... 37-39
Peer Influence ....................................................................................... 39-40
Childhood Sexual Abuse ........................................................................ 40-41

Protective factors .................................................................................... 41-42
Interpersonal factors (resiliency) ............................................................. 42
Self-Efficacy, Self-Esteem, and Assertiveness: ........................................ 42-43
Spirituality and Africentricism ................................................................. 43-45
Abstinence ............................................................................................. 45-47

2.3: Gaps in the Literature ...................................................................... 47-48
Conclusion .............................................................................................. 48-49

Chapter Three: Conceptual Framework .................................................. 50

3:0: Introduction ..................................................................................... 50
3.1: The Health Belief Model: ................................................................. 51-53
3.2: The Theory of Reasoned Action ...................................................... 53-54
3.3: Stages of Change Model (Transtheoretical Model) ............................. 54-57
3.4: The AIDS Risk Reduction Model ................................................... 57-58
3.4.1: Stage One: Labeling Stage ............................................................ 59
3.4.2: Stage Two: Commitment to Change ........................................... 60
5.1.1: Missing Values.................................................................125-126
5.1.2: Outliers.................................................................127
5.1.3: Factor Analyses.................................................................131-132
5.1.4: Reliability Analysis.................................................................134
5.2: Part Two—Data Analysis of Hypotheses.................................................134

Chapter Six: Results.................................................................................135

Part One: Descriptive Results.................................................................135
6.0: Introduction.................................................................................135

6.1 Part One—Descriptive Results/Demographic Information .........135-138
6.1.2: HIV Knowledge.................................................................139-141
6.1.3: HIV Testing Behaviour.................................................................141-143
6.1.4: Characteristics of Reported Sexual Activity.................................143-146
6.1.5: Condom Use..............................................................................146
6.1.6: Characteristics of Sexually Abstinent Participants.................150-151

6.2 Part Two—Testing Questions 1, 2 and 3.................................151-154

6.3 PART Three Specific Expanded ARRM Predictors......................156
6.7: Psychological Factors.................................................................155-156
6.8: Interpersonal Factors.................................................................156-157
6.9: Cultural Factors.............................................................................167-161
6.10: Spirituality..................................................................................158
6.11: Childhood Sexual Experiences..................................................158
6.12: Africentrism.............................................................................160
6.13: Traditional and Egalitarian Sex Roles..............................................160-161
6.4 PART Four: Testing Stage Specific Hypotheses..............................................161-166

6.4.1: Stage One—Labelling Stage.................................................................166-168

6.4.2: Stage Two—Commitment Stage..........................................................169-171

6.4.3: Stage Three—Enactment Stage............................................................172-174

Chapter Seven: Discussion.............................................................................176

7.1: Discussion of Salient Findings of the Multiple Regression Analyses...........176-180

7.2: General Discussion of Salient Findings....................................................180-184

7.3: Strengths, Limitations, and Implications for Future Research.................185-186

7.4: Theoretical Contributions.........................................................................186-187

7.5: Implications for Education, Clinical Practice and Policy..........................187-188

7.6: General Recommendation from a Culture and Gender-Sensitive Approach....189-191

7.7: Conclusion.................................................................................................191-192

References........................................................................................................193-223

Acronyms.........................................................................................................224

Appendix..........................................................................................................225-286

xii
List of Tables

Table 1: Table of ARRM and Expanded ARRM Variables with specific independent and
dependent variables at each stage of the model...............................................................4
Table 2: Outline for selected variables for each stage for the present study....................2-65
Table 3: Selected reviewed ARRM articles........................................................................78-84
Table 4: Reliability Analysis of Measures: Means and Standard Deviations of the 19 indicator
variables in the current study.........................................................................................109-110
Table 5: Specific independent and dependent variables at each stage of the model............114
Table 6: Outline for specific data analyses for each research questions and hypotheses.....120-124
Table 7: Preliminary analysis of measures......................................................................130-131
Table 8: Factor Analysis of Variables by Measures.........................................................132-134
Table 9: Demographic characteristics.............................................................................136-139
Table 10: Brief Demographic Description of HIV Knowledge in current participants............139
Table 11: Brief Demographic Description of HIV Testing Behaviour among current
participants.........................................................................................................................141-142
Table 12: Sexual activities among sexually active participants........................................143-144
Table 13: Condom use among sexually active participants...............................................145-146
Table 14: Description of current sexual relationship.........................................................146
Table 15: Getting condoms..............................................................................................147
Table 16: Frequency of vaginal sex in the past 6 months..................................................148
Table 17: Getting Condoms.............................................................................................149
Table 18: Frequency of Vaginal Sex in the past 6 months...............................................149
Table 19: Number of times condom was used in the past 6 months.................................149
Table 20: Characteristics of Sexually Abstinence Participants

Table 21: Childhood sexual experiences

Table 22: The bivariate and partial correlations of the predictor at labelling stage

Table 23: Linear model of predictors of labelling stage

Table 24: The bivariate and partial correlations of the predictor at commitment stage

Table 25: Linear model of predictors of commitment stage

Table 26: The bivariate and partial correlations of the predictor at enactment stage

Table 27: Linear model of predictors of commitment stage
List of Figures

Figure 1: Catania ARRM Stages.................................................................58

Figure 2: Proposed Expanded Conceptualized Model with Variable Interaction........64

Figure 3: Histogram and P-P Plot of Safer Sex Self-Efficacy.............................128

Figure 4: Histogram and P-P Plot of Sexual Assertiveness..................................128

Figure 5: Histogram and P-P Plot of Resiliency Scale.......................................129

Figure 6: Histogram and P-P Plot of Spirituality...............................................129

Figure 7: Histogram and P-P Plot of Childhood Sexual Abuse............................130
List of Appendices

Appendix A: Acronyms .......................................................... 224
Appendix B: Ethics Certificate—University of Toronto .................. 225
Appendix C: Ghana Health Service Ethical Review Committee ........... 226-227
Appendix D: Survey Questionnaire ......................................... 228-224
Appendix E: Letter of Support from Field Supervisor ................... 275
Appendix F: Letter of Support from PPAG ................................. 276-277
Appendix G: Introductory Letter to PPAG ............................... 278
Appendix H: Survey Poster ..................................................... 279
Appendix I: Informed Consent .................................................. 280-284
Appendix J: Debriefing Page .................................................... 285-286
Dedication

I dedicate my dissertation to all my foremothers and fathers.
Chapter One
Introduction

1.0 Introduction

The level of HIV/AIDS knowledge is high among young Ghanaian women, yet the influence of the broader gender and psycho-cultural factors has hindered the sustainability of HIV safer sex practices or prevention strategies (Akwara, Fosu, Alayon, & Hyslop, 2005; Gyimah, Tenkorang, Takyi, Adjei, & Fosu, 2010; Mill & Anarfi, 2002). According to Mill and Anarfi (2002), many young Ghanaian women will become infected with HIV unless practical ways are developed to understand current safer sexual practices and change risky behaviour. Anarfi and his colleagues (1997) postulated that young women aged 15 to 30 in Ghana are three times more likely to be HIV infected than young men. Elaborating on these statistics, Ohene and Akoto (2008) acknowledged that such high rates of infection among young Ghanaian women can be attributed to poverty, low social standing, and lack of empowerment. Researchers have also noted that the continual increase of infection in young Ghanaian women is influenced by sexual cultures, peer norms, patterns of condom use, and limited sexual negotiation skills (Akwara et al., 2003; Gyimah, Takyi, & Addai, 2006; Mill & Anarfi, 2002; Tenkorang, Adjei, & Gyimah, 2010). Further, Anarfi and Awusabo-Asare (1993) reiterated that Ghanaian women’s economic dependence on men decreases their ability to influence decisions about sex.

Based on the above-cited research, it is evident that increasing HIV knowledge alone will not stem the spread of HIV among young women in Ghana. Rather, the solution lies in enhancing the individual’s appreciation of her own risk and self-efficacy for reducing risky behaviours (Sallar, 2001). The purpose of the current dissertation is to understand the factors and/or variables that influence sexual risk behaviour of young Ghanaian women at each stage of the AIDS Risk
Reduction Model (ARRM). The study also proposed and investigated an expanded ARRM (i.e. an elaboration of the original ARRM) model that included select psychosocial and cultural variables that were not represented in the original ARRM. In addition, the study also examined demographics and how they relate to sexual behaviour.

The ARRM is a three stage conceptual framework that posits that change is a process, and that individuals move from one step to the next as a result of a given stimulus (factor or variable). In more specific terms, the model focuses on psychosocial factors hypothesized to influence the labeling of one’s high-risk behaviours as being problematic. For instance, Stage One (Labeling) is posited to be influenced by (i) knowledge of sexual activities associated with HIV transmission, (ii) belief that one is personally susceptible to contracting HIV, and (iii) belief that having HIV is undesirable. Given these factors, the present study included HIV Knowledge, Perceived Susceptibility, Peer Norms and HIV Risk Behaviour Knowledge at Stage One (Labeling). At Stage Two (Commitment to change) it is hypothesized that the next step in the process of changing high-risk behaviours involves reaching a firm decision to make behavioural changes and committing to that decision. Factors such as self-efficacy, behavioural intentions, and social influence are hypothesized to influence commitment. In the present study, the first two variables were tested.

Stage Three (Enactment) of the ARRM is known as the action-taking stage, which assumes that the individual will begin taking steps to achieve the goal of behavioural change once committed to the task of reducing high-risk sexual behaviours. This stage is hypothesized to be composed of three phases: information-seeking, obtaining remedies, and practicing safer sex strategies (e.g., use condoms always, maintain one sexual relationship). In this dissertation, condom use, perceptions of enjoyment and sexual communication were explored at stage three.
Catania’s (1990) ARRM has been identified as one of the most empirically validated models for the assessment of sexual risk behaviour (Riley & Baah-Odoom, 2010). It effectively guides investigators in designing HIV prevention programs that target the underlying factors of risky behaviours and breaks down the complexities of human behaviour into manageable stages (Catania, Kegeles, & Coates, 1990; Kowalewski, Longshore, & Anglin, 1994; McGrath et al., 1993; Morisky et al., 2004; Riley & Baah-Odoom, 2010). Due to the strengths of the model, the ARRM was selected as the conceptual framework for the present study. The ARRM has a cultural limitation in relation to measuring culturally relevant constructs in an Africa context. However, in spite of this limitation, the ARRM also creates the opportunity for or enables the inclusion of relevant cultural facets and/or variables. For this reason, the present study proposed an Expanded ARRM that elaborated on the original stage-specific variables (i.e., Stage One or Labeling Stage [HIV/AIDS Knowledge, Peer Norms, Perceived Susceptibility, and HIV/AIDS Risk Behaviour Assessment]; Stage Two or Commitment Stage [HIV Testing and Condom Use Self-efficacy]; Stage Three or Enactment Stage [Condom Use Self-efficacy, Sexual Behaviour, Perception of Enjoyment, and Sexual Communication]). These additional variables included in the Expanded ARRM are: psychological (sexual assertiveness and self-esteem), interpersonal (resiliency), and cultural variables (spirituality, cultural mistrust, gender roles, childhood sexual abuse, social health, and Africentrism) as shown in Table 1.
Table 1: Table of ARRM and Expanded ARRM Variables

Table 1 below outlines and describes the variables or factors their relationship to each ARRM stage and the Expanded ARRM.

<table>
<thead>
<tr>
<th>Demographic Information</th>
<th>Stage 1—Labeling (Original ARRM)</th>
<th>Stage 2—Commitment (Original ARRM)</th>
<th>Stage 3—Enactment (Original ARRM)</th>
<th>Psychological Factors (Expanded ARRM)</th>
<th>Interpersonal Factors (Expanded ARRM)</th>
<th>Socio-Cultural Factors (Expanded ARRM)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Family</td>
<td>Marital Status</td>
<td>Marital Status</td>
<td>Marital Status</td>
<td>Marital Status</td>
<td>Marital Status</td>
<td>Marital Status</td>
</tr>
<tr>
<td>Income</td>
<td>Age</td>
<td>Education</td>
<td>Region</td>
<td>Family</td>
<td>Income</td>
<td>Marital Status</td>
</tr>
</tbody>
</table>


1.1 Personal Standpoint

While reflecting on myself and my involvement in this type of research, I realized that my goal of being a clinician, researcher, and women’s advocate was influenced by a number of interactions between me and my environment. To begin, I was born in Uganda, educated in Nigeria, and raised in Ghana by a family that placed great emphasis on education, culture, and the empowerment of women.

Growing up in one of the suburban neighbourhoods in Accra, I soon developed an awareness of the intense demoralization that can accompany poverty, patriarchy, classism, and lack of opportunities for women. My grandmother valiantly combated these adverse influences by instilling in me a sense of personal agency in transcending obstacles. Moreover, in keeping with the traditional belief that each child is a treasured member of society, my extended family also played a significant role in my development. These experiences helped shape my practical and theoretical understanding of the numerous challenges and sociocultural issues facing African women and girls, hence my perception of women as equals in the community.

The contrast between this constructive, optimistic home environment and the bleak, restrictive atmosphere of my neighborhood helped me appreciate the intervening role of life circumstances in one’s intellectual and personal development. The influence of negative life circumstances became particularly clear to me when in my teenage years I volunteered to peer-counsel teen mothers, young women, and their families living in difficult conditions, experiencing major stresses in life, and dealing with fractious interpersonal relationships. These experiences seemed to impede the young women’s ability to continue their education, engage in protective sexual activities and/or negotiate for safer sex. Hence, I discovered the power of
positive human relations in fostering growth in these areas and recognized how research could impact the lives of these young people in a positive way.

These experiences reignited my desire to effect change in the lives of women and girls on a much larger scale. Nonetheless, I realized that while passion is an important part of my work, I needed professional and practical skills that would enable me to execute this critically important work. To this end, I sought mentorship from several resourceful women, one of whom was a graduate of a psychology program from a Canadian university. Through her mentorship I became aware of opportunities available in Canada and was able to win a scholarship to attend university in Canada.

Coming to Canada as a student in a psychology and gender health program served as a turning point in my life. I was admitted to a professional program that reinforced values congruent with the values of my Ghanaian community. Clinical/Counselling, Forensic, and Community Psychology as well as Women’s Health Education encouraged the critical thinking necessary to facilitate the implementation of gender and/or culturally appropriate interventions and empowerment of women and girls.

Research has been an important part of my undergraduate and graduate education and training. My research experiences have been progressive and I have consistently been motivated by the potential applications of research to real life. For instance, my undergraduate thesis was stimulating because of its pragmatic focus on refugee women who were sexually assaulted during the Liberian and Sierra Leonean wars in West Africa. Discovering the psychological impact of the rape on the women prompted me to contact the United Nations Population Fund. Following this, I collaborated with them on projects looking at the application of psychological interventions among refugee women in Ghana. I saw the practical implications of my research through public
presentations, publications, and community engagement.

As a graduate student, I continue to search for the link between psychology and women’s health. My MPhil thesis examined the personality characteristics of sex offenders in Ghana and my MA thesis investigated the psychosocial experiences of women living with HIV/AIDS in Ontario. My current Ph.D. dissertation, “Implications of Sexual Risk Assessment for HIV Intervention Planning: The Utility of the Expanded AIDS Risk Reduction Model among Young Ghanaian Women” stems not only from the fact that I am a young Ghanaian woman, but also from the fact that it provides a unique opportunity to learn from the sexual experiences of young women and interact with a vibrant, multilingual, and culturally diverse population. More importantly, this research will have significant implications for HIV/AIDS prevention.

1.2 Background

In the last fifteen years, the Human Immunodeficiency Virus (HIV) has assumed the status of a health pandemic that affects large populations and entire families and communities in sub-Saharan Africa—women, particularly young women and girls, being the hardest hit group (Center for Infectious Disease Prevention and Control, 2010; Oppong, Oppong, & Odotei, 2006). According to the Joint United Nations Programme on HIV/AIDS (UNAIDS, 2010), women account for more than half (56%) of the global population estimated to be living with HIV/AIDS, and reportedly young women in the 15 to 24 age group have the highest recorded rates of infection. For most of those infected, HIV/AIDS is a terminal illness that could to could shortened life span. Scholars (Andantes, et al, 2008; Anarfi, 2008) have also observed that HIV/AIDS is the leading cause of death among women of African descent between the ages of 25 and 30. With the incubation period of up to ten years, it is estimated that 1 in 5 people diagnosed with HIV/AIDS were infected during their early
adulthood years (UNAIDS, 2011). The global HIV/AIDS surveillance data also suggests that women and young girls become infected 5 to 10 years earlier than men and boys because of biological, psycho-social, socio-economic, and cultural factors that place women in more vulnerable situations (AAWORD, 2003). For instance, in terms of biological susceptibility of HIV among women, the rate of transmission from male-to-female is two to three times higher than from female-to-male. Ampofo (2006) also argued that the cells of the cervix may provide a portal of entry during heterosexual intercourse. Odotei (2002) added that vaginal inflammation or ulceration resulting from inadequately treated or unknown STIs may act as co-factors for HIV transmission. In the UNAIDS report (2012), it was suggested that girls’ first sexual encounter occurs at an earlier age than boys, and younger women tend to have sex with older men—“sugar daddies”\(^1\) for financial upkeep and support. For example, in Ghana, the median age of first sexual intercourse for girls is 16 years, and by age 20 about 85% have had sexual intercourse (Ampofo, 2006; Awusabo-Asare et al., 1993; Fayorsey, 1995). The World Health Organization (WHO, 2012) also stated that women’s powerlessness creates one of the most obdurate barriers to HIV/AIDS prevention. The subordinate status of women in many societies often makes it difficult for women and girls to negotiate for safer sex with their partners, and when they do, they are subjected to abuse and stigmatization. Ampofo (2006) again highlights that these factors shape women’s and girls’ general attitudes to sexual engagement as well as risk-taking behaviours within the specific sexual encounters. Remis and Merid (2002) cautioned that due to the association of HIV/AIDS with the youthful and active demographic segments of the population, HIV infection rates will likely double in the near future if effective and sustained action strategies are not enforced.

\(^1\) Sugar daddy refers to a man who offers money or gifts to a younger woman in return for sexual companionship.
As background, it is also worth noting that political factors in Ghana have influenced the well-being of Ghanaians generally and HIV infection specifically. Beginning in the late 15th century, Ghana was called the Gold Coast and was colonized by several countries including Portugal, Denmark, Holland, and Great Britain (Howard, 1978). However, in 1957, the Gold Coast became officially known as Ghana, at which time Ghana attained independence from the British. Colonialism, through the depletion and exploitation of resources and appropriation of land, has been identified as one of the root causes of increased poverty and poverty-related illnesses in Ghana (Aidoo, 1982; Kibirige, 1997). Anyinam (1989) argues that colonial governments built a weak foundation for the development of the health services that persisted for decades after independence. He adds that external influences and the persistent debt crisis have also impacted the health care system and subsequent health status of Ghanaians, particularly Ghanaian women (Anarfi et al., 1997).

In Ghana, HIV is a growing problem even though the prevalence rate is still relatively low compared to other countries in the sub-region. The Ghana Sentinel Surveillance report (2012) indicates that the prevalence of HIV infection is 3.1%, compared to 7.5% in sub-Saharan Africa, 1.1% globally. Nonetheless, the growing number of people living with HIV/AIDS in Ghana is posing challenges to both prevention and treatment efforts (Ghana AIDS Commission, 2010). For instance, in 2003, an estimated 30,000 Ghanaians reportedly died of HIV/AIDS (UNAIDS, 2004). As of 2010, there were an estimated 450,000 people living with HIV/AIDS (WHO, 2010).

---

2 The Republic of Ghana is centrally located on the West African coast with a population of approximately 25 million people. It is bordered by three French-speaking countries: Togo to the east, Burkina Faso to the north and northwest, and Côte d’Ivoire to the west. The word Ghana means "Warrior King" and is derived from the ancient Ghana Empire. Ghana is a Middle Income Economy and is ranked as a Lower–Middle Income Economy by the World Bank. 27% of Ghana’s population is living on less than $1.25 per day, and there is a rate of 25% youth unemployment (Ghana Health Survey, 2008; Kenny & Sumner, 2011).

3 The percentage of people infected with the disease--HIV.
A report by UNAIDS (2005) indicates that nine in ten Ghanaians are primarily concerned with the transmission of the disease and three in five (60%) Ghanaians feel that HIV/AIDS and other infectious diseases are the greatest threat to the world. A more recent study of young Ghanaians aged 15 to 24 suggested that 77% of young men and 71% of young women realized that a healthy looking person could be carrying HIV (Ghana AIDS Commission, 2010). Researchers including Aryee (2012), Oppong, Oppong, and Odotei, (2006), and Riley and Baah-Odooom (2010) have expressed concern that in spite of the relatively high level of HIV/AIDS awareness, behavioural change is somewhat low in the general population.

The primary mode of HIV transmission in Ghana is through heterosexual sex, and women account for more than half (56%) of adults estimated to be infected with HIV/AIDS (Ghana AIDS Commission, 2010). Furthermore, people between the ages of 25 and 34 are the most infected. Among young people aged 15 to 24, women are the most affected. Hence, the estimated number of young women living with HIV/AIDS is reportedly more than twice that of young men (Ghana AIDS Commission, 2010. A number of researchers (e.g., Akwara et al., 2003; Gage, 1998; Mill & Anarfi, 2002; Ohene & Akoto, 2008; Riley & Baah-Odooom, 2010) have argued that the high rates of infection among young Ghanaian women can be attributed to socio-cultural and risk-related sexual factors including poverty, high cultural value on childbearing, low social standing, lack of empowerment, peer norms, and patterns of condom use. Gender roles, cultural beliefs, and norms are factors that may significantly influence the behaviour of women, particularly the interpersonal relationships in which sexual behaviour occurs. For women, this often means that sexual behaviour occurs in the context of unequal power and in a context that socializes women to be sexually passive (Ampofo, 2006; Oppong, Oppong, & Odotei, 2006; Worth, 1989).
In the same vein, Ankomah (1998) pointed out that the inability to negotiate condom use in sexual relationships puts young women in an extremely vulnerable position. This position is supported by studies which show that heterosexual encounters are the primary mode of HIV transmission among Ghanaian women, accounting for about 75 to 80 percent of infections (Akwara et al., 2005; Karim et al., 2003; Neequaye et al., 1991). Gyimah et al. (2010) and Tenkorang, Adjei and Obeng (2010) also indicated that being involved in multiple sexual relationships (sequentially if not concurrently), inconsistent use of condoms, and vulnerability to coercion are some of the risk situations that Ghanaian women find themselves in. In addition, Worth (1989) contends that for many Ghanaian women, the nature of the social bond with a partner seems to affect sexual decision-making. Hence, the stigma of infidelity on the part of women and their partners’ lack of trust are also identified as contributory risk factors.

Another aspect of the HIV problem in Ghana has to do with the scope and effectiveness of preventive interventions. Gay et al. (2010, p. 8), in their book What Works for Women and Girls, acknowledged that while awareness education for women and girls in Ghana has been successful, there is a need for more prevention programs to be supported and implemented since the number of women and girls engaging in risky sexual activities has increased substantially. For example, the 2008 Ghana Demographic Health Survey (GDHS, 2008) reports that 23 percent of women (ages 15 to 49) are currently engaged in high-risk (i.e., non-marital and non-cohabiting partner) sexual intercourse, while only 25 percent of women are using condoms (Ghana Health Service, 2009). It is argued that most existing research on behavioural change and HIV/AIDS prevention in Ghana has been limited to HIV/AIDS knowledge and information. Sallar (2001) for instance, highlighted that increasing HIV knowledge alone will not stem the spread of HIV among young
women in Ghana; rather, the solution lies in enhancing the individual’s appreciation of her own risk and self-efficacy for reducing risky behaviours.

Despite the pervasiveness of HIV/AIDS, very few studies have comprehensively and theoretically examined the extent to which psychological, socio-cultural, and interpersonal factors shape HIV-related sexual risk behaviours among young Ghanaian women. HIV/AIDS education and prevention efforts in Ghana have been limited to the assessment and development of relevant psychosocial, gender, and culture-specific strategies that can assist young Ghanaian women at risk (Dalton, 1989; Gyimah et al., 2010; Tenkorang, Adjei, & Obeng, 2010). As such, this dissertation aims to fill a critical gap in the literature on the theory and practice of AIDS prevention strategies in Ghana by applying the AIDS Risk Reduction Model, or ARRM (Catania et al., 1992).

Data available on the sexual risk behaviours among young Ghanaian women is limited. Most of the existing research has been directed to documenting the patterns of sexual behaviour and contraceptive use of young Ghanaian women without examining the psychological and cultural factors the influence risky sexual behaviours. Also, conventional measures of HIV/AIDS prevention and behavioural change are based on frameworks that ignore gender perspectives and the social-cultural context in which sex is negotiated. A focus on the utility of the expanded ARRM among young Ghanaian women will inform our understanding of how to assess other patterns of sexual risk behaviours.

In plain words, the purpose of the current dissertation is to understand the factors or variables that influence sexual risk behaviour of young Ghanaian women at each stage of the ARRM model. The study also investigated the extent to which the ARRM variables relate to the Expanded ARRM. Lastly, the study also examined demographic variables and how they relate to risky behaviour. The long-term implications of this knowledge will be useful to sexual health
educators in teaching young women and girls how to reduce risk. It will also serve as a resource for policy makers and community organizations who oversee policy implementation on HIV/AIDS prevention in young women in Ghana (Refer to table 1 for list of variables).

1.3 Women in Ghana

According to Oppong, Oppong, and Odotei (2006), Ghanaian women tend to ascribe to traditional gender roles. It is reported that during the colonial period, Ghanaian women were primarily responsible for bearing and raising children (Oppong, Oppong, & Odotei, 2006). Given this, the ability to reproduce was the most important means by which women ensured social and economic security for themselves—especially if they bore male children (Gyimah, Takyi, & Addai, 2006; Owusu-Ansah, 1994). Hence, the childbearing ability of women was explained as the means by which lineage ancestors were allowed to be “reborn” (Anarfi, 1999; Gyimah, 2010; Owusu-Ansah, 1994).

Ghanaian women were also involved in farming, market retailing, food preparation, washing, and water collection (Oppong, Oppong, & Odotei, 2006). Financial benefits accrued from these economic activities contributed to the upkeep of the household. Men, on the other hand, invested in enterprises that were often perceived as primarily belonging to them and to their extended family. This form of tradition placed women in positions subordinate to men (Anarfi, 1993 & 1997; Gyimah, Takyi, & Addai, 2006) and further alienated them from wealth acquisition, even in conjugal relationships (Anarfi, 1993 & 1997; Owusu-Ansah, 1994). The persistence of such values in traditional Ghanaian society underlied resistance to female education (Oppong, Oppong & Odotei, 2006).
The implementation of affirmative action in Ghana has changed the picture. In modern Ghanaian society, women are reportedly employed in the same capacity of work as men and receive equal remuneration (Ghana Statistical Service, 2010). Odotei (2002) acknowledged that the role played by Ghanaian women as professionals, wives, mothers, and traders, and the impact they have on the Ghanaian society have also helped in HIV prevention through the creation of awareness and community education. In spite of their role in societal progress, Ghanaian women continue to be more susceptible to HIV infection than men because of limited economic opportunities and cultural barriers such as early marriage and patriarchy. With this in mind, it is hoped that the current study would give us more insight for future HIV/AIDS programmes for women in Ghana.

1.4 Problem Statement

When the spread of a disease like HIV/AIDS is attributed to factors beyond personal control, it suggests that information regarding the transmission, though necessary, is by no means sufficient to promote reduction in HIV-related risk behaviours. Predicting the sexual behaviour of young women presents a unique opportunity to explore alternative mechanisms that will enable us to more effectively integrate the expanded ARRM into HIV/AIDS prevention programs in Ghana specifically, and in Africa more generally. The Expanded ARRM is an elaboration of the original ARRM, which allows the inclusion of psycho-social and cultural variables. Accordingly, the main focus of the present study is to understand why young Ghanaian women do or do not engage in safe sexual activity. While a number of psychosocial models have been applied to studies of AIDS prevention, Catania’s AIDS Risk Reduction Model (ARRM, 1990) directly addresses the factors associated with risky sexual behaviours. In assessing the extent to which ARRM measures risky
sexual behaviours among young Ghanaian women, it is prudent to also examine the extent to which the Expanded ARRM explains HIV/AIDS risk behaviour in the modern young Ghanaian woman.

1.5 Research Question

The AARM conceptual framework guided the current study in addressing the following research questions:

1. What demographic variables (including age, level of education, family income, marital status, and religion) are related to risky sexual behaviour among young Ghanaian women?
2. What variables influence sexual risk behaviour at each stage of the ARRM and to which degree do we understand the hypothesized relationship between Stage 1, Stage 2 and Stage 3 variables?
3. What is the predictive value of the Expanded ARRM in relation to predicting sexual behaviour at each stage of the ARRM?

1.6 Relevance

As mentioned earlier, data available on the sexual risk behaviours among young Ghanaian women is limited. Most of the existing research has been directed to documenting the patterns of sexual behaviour and contraceptive use of young Ghanaian women without examining the psychological and cultural factors that influence risky sexual behaviours. Also, conventional

4 The questions assume the validity of ARRM in Ghana given the extensive evidence provided by researchers in similar cultural contexts.
5 Including vaginal-penile, oral, anal, kissing, fondling, and genital touching as well as abstinence.
6 The Expanded ARRM is primarily made up of selected Socio-Cultural variables/factors that were introduced in this study for the reason that the original ARRM lacks these socio-cultural factors.
measures of HIV/AIDS prevention and behavioural change are based on frameworks that ignore gender perspectives and the social-cultural context in which sex is negotiated. A focus on the utility of the expanded ARRM among young Ghanaian women will inform our understanding of how to assess other patterns of sexual risk behaviours. This knowledge will hopefully also help in designing active components of HIV intervention programs (such as safer sex negotiation, self-esteem, and sexual assertiveness) for young women. For behavioural change to be an effective tool in combating AIDS, it is critical to empower young women in the belief that empowerment will facilitate the negotiation of safer sexual practices. In sum, the use of the expanded ARRM as a framework will provide further evidence on the applicability of the ARRM model to young women in Ghana.

1.7 Implications of the Study

The ARRM will enable us to gather information on condom use and, more specifically, evaluate the underlying psychological, interpersonal, and cultural factors postulated to shape sexual risk behaviours among young women in Ghana. The use of the ARRM will also help explain why some young Ghanaian women engage or do not engage in safer sex practices. The information will be invaluable in designing and developing cultural and gender programs to promote safer sex practices to reduce the spread of HIV infection among the target population. More importantly, this study will break new ground in the sense that it explores sexual behaviour theoretically as a pattern occurring within a cultural and gendered context—a system of values, resources, and priorities—and will provide diverse opportunities and innovative means for HIV prevention. Again, from a theoretical perspective, the use of the ARRM will be a pioneering effort
to help bridge the gap in the literature on AIDS prevention in Africa and apply a psychosocial model to the study of risky sexual behaviours among young Ghanaian women.

Finally, the study will assist in the development of HIV specific programs that enhance safer-sex practice and improve the health and quality of life of young African women and other high-risk populations. A key objective of HIV prevention strategies in Ghana is to increase women's psychosocial and assertiveness skills in negotiating safer sex. By uncovering the factors that contribute to risky sexual practices, specific gender and culturally appropriate HIV/AIDS intervention programs can be developed to supplement existing prevention programs in Ghana. For example, this study will contribute to the design and implementation of specific training programs on sexual assertiveness, self-esteem, and sexual negotiation for females living with HIV/AIDS specifically and for women and girls more generally. This training would lead to greater empowerment for women and girls in negotiating safer sex given that the inability to do so appears to impede their ability to practice safer sex and to continue their education. Furthermore, the voices of the women, as captured in the study, will compel policymakers and health providers to pay more attention to the needs of Ghanaian women specifically in the areas of education, training, and financial opportunities since gender related issues such as financial dependence on men increase their vulnerability to HIV infection. Overall, the knowledge, expertise, and competence of Ghanaian women, girls, and the community at large will be geared towards a sustainable response to HIV prevention.

African researchers including Adomako (2010); Anarfi et al. (2008); Gyimah, Takyi, and Addai (2006); Tenkorang, Adjei, and Gyimah (2010) highlight the substantial role of cultural factors including spirituality and/or religiosity and gender roles in young Ghanaians. Therefore, a comprehensive understanding of the factors outlined in this study with regard to risk behaviours
and HIV prevention will inform interventions that focus on promoting healthy sexual practices among young Ghanaian women.

In summary, this chapter has shown that socio-cultural and economic factors, has impacted the healthcare of Ghanaians—particularly, women. Traditional norms and practices have also shaped the general well-being and social conditions of women by positioning them as subordinates to men. Traditionally, women were viewed as child bearers and domestic partners who could not own any property. In spite of the advancement in women’s status and condition in modern times, HIV infection is still high among Ghanaian women compared to men. Moving forward, it is important to understand the factors that shape the sexual behaviour of young Ghanaian women and how HIV can be prevented by the use of the ARRM and the Expanded ARRM.

The results will be disseminated to stakeholders (e.g., women, girls, youth, community-based groups, state and aid agencies, academics, and students) through seminars and personal contacts to fuel broader discussions around evidence-based interventions. Globally, the results should improve research, policy, and program insights into HIV/AIDS prevention, challenge clinicians and HIV health providers to expand the boundaries of their methods and theories, and stimulate further research on the theory and praxis of HIV/AIDS. The current study will fill in critical gaps in knowledge. That is, the ARRM will effectively guide investigators, Community Based Organizations (CBOs), and professionals in designing appropriate HIV prevention programs to address the underlying socio-cultural, psychological, and biological causes of sexual risk behaviour.

1.8 Outline of Dissertation
This dissertation is divided into seven chapters. Chapter One introduces the research question, contextualizes the study, specifies the research objectives, and articulates the relevance of the study. Chapter Two reviews the literature relating to HIV risk and protective factors in young Ghanaian women. Chapter Three discusses the theoretical framework adopted for the study while Chapter Four presents the methodology used in the study including the objectives, operational definitions, selection of questionnaires, sampling procedure, data collection, and data analysis procedures. Chapters Five and Six highlight the data analyses and results. The final chapter—Chapter Seven discusses the key findings, strengths, limitations, recommendations, and conclusions drawn from the research.

The next chapter presents an overview of HIV risk factors as presented in the literature.
Chapter Two
Literature Review

2.0 Introduction

While there has been some progress in the prevention of HIV within the international community, African women (including young Ghanaian women) remain one of the most vulnerable groups faced with the challenges of HIV infection (UNFPA, 2007). As described in Chapter One, poverty, limited educational opportunities, lack of personal skills to negotiate for safer sex practices, and long-standing patriarchal structures within the Ghanaian society are some of the factors that have significantly impacted and/or shaped the sexual behaviour of young Ghanaian women (Mill & Anarfi, 2002).

The primary objective of this chapter is to provide a detailed review of the risk factors identified in the literature, discuss the existing gaps related to sexual behaviour of young Ghanaian women, and bring to light the application of ARRM as a conceptual framework in the current study. The chapter begins with an introduction of sexual risk behaviour and safer sex behaviour. This overview is followed by a discussion of the factors that place young Ghanaian women at risk of HIV infection. Given the connection between the ARRM and selected variables, the following factors are discussed in this literature review in an effort to address the research goals and questions. The reviewed variables include: AIDS knowledge, perceived risk, condom use, poverty, culture, patriarchy, gender roles, peer norms, and the relationship between childhood sexual abuse and HIV infection. Further, a number of protective factors were identified in the literature (i.e.,
spirituality, Africentrism, self-efficacy, self-esteem, assertiveness, and abstinence) and their roles in HIV prevention in young Ghanaian women is also discussed. In conclusion, the chapter highlights the cultural relevance of the extended ARRM within the context of Ghana and Africa.

2.1 Understanding HIV Risk Behaviour

In an attempt to understand HIV risk behaviour, Van der Pligt (1996) described risk as, “an action that entails the possibility of a loss and generally consists of two components: (a) the probability and (b) severity of a negative outcome (p. 34).” According to Van der Pligt (1996), most health behaviour models are based on decision theory, which assumes that risk behaviours represent conscious actions while decision-making involves identifying the possible options or choices and consequences of an action. Van de Pligt also emphasized the importance of evaluating the desirability or value of each consequence associated with a specific option or action. Fisher and Fisher (2000) briefly described risk behaviour as the possible consequential pattern of behaviour that could be an action or a decision made in a risky context. Along the same line, Rhodes (1997) explained that “risk” and “risk behaviour” have become keywords in AIDS discourse; of all the risk factors relevant to understanding the determinants and distribution of the disease, risk behaviour is the most important. Further, Fishbein et al. (1991) and Odutolu (2005) suggested that HIV risk behaviour could be better understood by considering how psychological theory has been used to understand risk behaviour and predict behavioural change. It was argued that an individual’s perception of susceptibility, benefits, constraints, and intentions to behave in a particular way are significantly influenced by psychology. Thus, an individual’s belief that she or
he can effectively carry out a desired behaviour in a particular setting is fundamental to understanding her or his risk behaviour (Cavanaugh, 2004; Fishbein et al., 1991; Gyimah et al. 2010; Tenkorang, Adjei & Obeng, 2010; Tenkorang & Owusu, 2010).

Some researchers, including Ajzen (1991), Catania et al., (1997) and Fisher (2000), also suggested that in order for us to understand and prevent high risk behaviours in young people, it is particularly important to explore how one factor (e.g., gender norms, peer norms, self-efficacy, and AIDS knowledge) influences another. According to these researchers, only when we have a substantial understanding of how these factors influence sexual decisions and behaviour, can we provide effective and relevant intervention(s). Adam (1992), as well as Friedman, Des Jarlais, and Ward (1994), alluded that people are able to make changes in their lives when they understand the connection between their individual characteristics and how they interact with themselves and their social environment. In a consensus, Klovdahl (1985), Klovdahl et al. (1994), Maticka-Tyndale, and Tenkorang (2010), and Neaigus et al. (1994) concluded that the practice of social norm(s) or change are best observed and understood at the individual level. In general terms, enhancing the understanding of young people’s sexual behaviour and examining the interaction between individuals and their social environment can effect change and improve targeted interventions designed for them. Therefore, implications of the influence of one factor on another at the individual level will provide a useful starting point for effecting social change among young Ghanaian women. The knowledge gleaned from the findings will help psychologists and other service providers design interventions that will be effective in promoting safer sex behaviours among young Ghanaian women.
2.2 Understanding Safer-Sex Behaviours

Safer sex is described as a harm reduction strategy aimed at reducing and managing risky behaviour. Staras, Cook, and Clark (2009) stated that though safer sex approaches such as consistent and proper use of condoms are highly recommended, risk reduction may not be absolute because safer sex can be effective only if both parties involved in a sexual activity agree on a safer sex strategy every time they engage in a sexual activity. The authors argued that during sexual intercourse where condom use is involved, for example, the male could intentionally pull off the condom and continue penetrating without the receptive partner’s consent or notice; this they describe as a high-risk behaviour that betrays trust and potentially spreads HIV and other STIs.

The term ‘safer-sex behaviour’ has been well embraced in Ghana. Within the context of the present study, safer-sex behaviour refers to those sexual behaviours that promote a reduced risk of contracting HIV. These behaviours may include sex with a condom, abstinence, oral sex, hugging, fondling, kissing, petting, and masturbation. In Ghana, abstinence is generally presumed to take precedence for young people who are not in a relationship or young people who do not engage in premarital or non-committal sexual activities, while those who are in a relationship and are engaging in diverse sexual activities are encouraged to remain faithful to their partners or use condoms to prevent the transmission of HIV (Ghana AIDS Commission, 2010; UNAIDS, 2005; UNFPA, 2005). As such, safer-sex behaviours could be conceptualized as behaviour modifications that are effective in HIV prevention.

In the current study, it is anticipated that while young Ghanaian women are somewhat aware that unsafe sexual activities increase risk of contracting HIV, they may not necessarily understand exactly what factors directly or indirectly affects their own risk to HIV infection.
2.3  **Literature Review**

This literature review identifies interpersonal, psychological and cultural factors unique to risky sexual behaviours in young Ghanaian women. In addition, it attempts to explore some cultural and socio-economic variables that potentially influence risky sexual behaviours in young Ghanaian women. The review begins with a general overview of HIV infection and related issues within the context of young Ghanaian women in Ghana. Due to the overwhelming number of published research materials on HIV risk factors among African women, the literature review covers only studies on select factors including HIV knowledge, HIV testing, condom use, abstinence, self-esteem, and gender roles. While accepting the limitations of inferences that can be drawn from studies of other populations (e.g., Europeans with HIV/AIDS), it is assumed that there are sufficient similarities across issues (e.g., HIV risk behaviour issues, socio-economic issues, and psycho-cultural issues) in Africans and African Americans/Canadians, thus their inclusion in the review as their applicability to this research is warranted.

In summary, the current state of risky sexual behaviour in young Ghanaian women is discussed in order to understand the context in which young Ghanaian women are exposed to HIV and AIDS infection. The dynamics of HIV/AIDS in Ghana are discussed in order to understand the need for a culturally sensitive approach to HIV.

2.3.1  **Sexual Behaviour and Related Factors**

With regard to HIV risk behaviour issues in Ghana, the following information garnered from a systematic literature review suggests that most young women in Ghana are sexually active

---

8 Constructs and factors discussed in the literature were reviewed for the reason that they fit in with the conceptual framework-ARRM and expanded ARRM.
and more likely to be predisposed to HIV infection as a result of several cultural, interpersonal, and psychological factors. HIV transmission among women, and particularly young women, in Ghana is largely through heterosexual contact (80%), vertical transmission (15%), and blood transfusion (5%; GDHS, 2009; Karim et al., 2003). A report from the Ghana Demographic and Health Survey (GDHS, 2008) suggests that 23% of women (aged 15 to 49) are involved in high-risk sexual relationships including having multiple partners or non-marital and non-cohabiting partners. The survey points out that only 25% of the above reported women use condoms during sexual intercourse. Again, it was also noted that on average, men reportedly have two lifetime sexual partners while women have five lifetime sexual partners.

The factors that influence risky sexual behaviour among Ghanaian women have been extensively examined in scholarly literature by researchers including Bankole et al. (2007), Adomako (2011), Anarfi (2008), Biddlecom et al. (2009), Cofie and Gyimah (2011), Gyimah et al. (2010), Gupta and Mahy (2003), Henry and Fayorsey (2002), Karim et al. (2003), Nzioka (2001), Riley and Baah-Odoom (2010), Sallar (2001), and Stephenson (2009). These researchers are among the few who have extensively examined the psychosocial, cultural and socioeconomic factors that influence the risky sexual behaviours of Ghanaian women. They have acknowledged the realities that lead to risky sexual behaviour among young Ghanaian women, while also explaining that young Ghanaian women have been somewhat understudied. They also confirm that several factors both at the personal and structural levels as well as psychological, interpersonal, and cultural factors can put an individual at risk for contracting HIV/AIDS. With this information in mind, the current study sought to understand the factors/variables that influence sexual risk behaviour of young Ghanaian women at each stage of the ARRM three stages model.
To reiterate, for the original ARRM, the following variables and/or factors were selected for the current study (i.e., Stage One or Labeling Stage [AIDS Knowledge, Peer Norms, Perceived Susceptibility, and HIV/AIDS Risk Behaviour Assessment]; Stage Two or Commitment Stage [HIV Testing and Condom Use Self-efficacy]; Stage Three or Enactment Stage [Condom Use Self-efficacy, Sexual Behaviour, Perception of Enjoyment, and Sexual Communication]). The expanded ARRM includes variables selected outside of the original ARRM. These additional constructs include: assertiveness and self-esteem [psychological], resiliency [interpersonal], childhood sexual experiences, egalitarian gender roles, spirituality, cultural mistrust and Africentrism [socio-cultural] (see Table 1). Lastly, the study also examined demographics and how they relate to risky behaviour. To understand the variables as they pertain to the purpose of the current research, the following section presents a detailed discussion of each variable.

**AIDS Knowledge**

HIV/AIDS knowledge is generally described as the ability to have comprehensive, up-to-date information on the basics of HIV transmission, treatment, and prevention. In Ghana, knowledge of HIV and AIDS is widespread and approximately 98% of women and 99% of men are aware of the existence of HIV. Most Ghanaian women know that a healthy-looking person can have HIV and have discarded two of the most common local misconceptions about the transmission of AIDS in Ghana—that 1) AIDS can be transmitted through mosquito bites and 2) AIDS can be transmitted by supernatural means (GDHS, 2008). Studies conducted by Anarfi

---

9 Note of impetus: The variables in the Expanded ARRM were selected by the researcher in consultation with the thesis committee and advisor. The Expanded ARRM is primarily made up of selected Socio-Cultural variables/factors that were introduced in this study for the reason that the original ARRM lacks these socio-cultural factors.
Gyimah (2010), Takyi (1993), and Ridley and Baah-Odoom (2010) validate that general HIV knowledge including transmission and consequences of HIV infection is fairly high among Ghanaians. These studies suggest that approximately 87% of Ghanaians have a clear understanding of what HIV and AIDS are as well as the modes of transmission. Ghanaians also seem to have knowledge on effective modes of AIDS prevention including condom use (78%) and abstinence (61.2%). In addition, greater knowledge of HIV/AIDS is reportedly a significant predictor of higher condom use.

Despite relatively high rates of general HIV and AIDS knowledge, Ghanaian women demonstrate average knowledge of the disease. For example, the 2008 Ghana Demographic Health Survey (GDHS, 2008) showed that most Ghanaians know some basic facts about HIV and AIDS, while only one in four women (25%) and one in three men (33%) have comprehensive knowledge of HIV/AIDS transmission pathways, causative factors and prevention. In similar terms, it is reported that most Ghanaian women have limited knowledge about the consistent use of condoms during sexual intercourse. They also believe that having just one faithful HIV-negative partner can reduce the chances of getting HIV/AIDS. Furthermore, Anarfi (2006) noted that even though 85% of Ghanaian women and 78% of Ghanaian men have knowledge of HIV being transmitted during breastfeeding, only half of women and 44% of men know that the risk of mother-to-child-transmission of HIV can be reduced if a mother is treated with antiretroviral drugs during pregnancy. In addition, a study conducted by Wutoh (2006) on HIV knowledge and sexual risk behaviour of 100 Ghanaian street children between ages 11 and 19 (69 males and 31 females) showed that 80% of the participants had at least minimal knowledge of HIV with 54% perceiving themselves to be at risk for contracting HIV. The study also found that 77% (n=53) of the males and 87% (n=27) of the females were able to identify at least one mode of HIV transmission.
correctly. Forty-five percent of the entire group reported the most common mode of transmission as unprotected sex, while 25% indicated that people could get infected from both unprotected sexual activity and unsterilized objects such as infected blades. In addition, 4% of the participants also indicated HIV could be spread through contaminated needles.

On the whole, this literature review further indicates that most Ghanaians have at least a basic knowledge of HIV/AIDS, although, as other studies show, their comprehensive knowledge of HIV/AIDS is limited. Taken together, variations in comprehensive HIV knowledge among Ghanaian women are known to be influenced by a number of cultural, social, and structural barriers (e.g., patriarchy, fear of being misunderstood, community norms related to sexual behaviour, religious beliefs, and degrees of acculturation), which have been well documented by Mill and Anarfi (2002), Gyimah et al. (2010), and Oppong, Oppong, and Odotei (2003). Of note, this is an area where research is limited. For these women, HIV prevention often occurs when the entire community, including women is well educated about current HIV and AIDS prevention strategies such as the proper use of condoms. Even though basic HIV/AIDS knowledge is very high among young Ghanaian women, there is still a need for growth and improvement in their comprehensive HIV/AIDS knowledge.

**Perceived Risk**

Can we surmise that young women in Ghana perceive themselves as being susceptible to HIV infection? In an effort to address this question, several studies (e.g., Adomako, 2003; Anarfi, 2001; Gyimah et al., 2010; Odotei, 2003) were reviewed. From these studies, it was apparent that HIV risk perception in young Ghanaian women is associated with a wide range of variables including HIV and AIDS knowledge, gender norms, community perception of AIDS risk and
religiosity, fear of HIV/AIDS, and shame associated with having AIDS. Baiden and Rajulton (2011) also acknowledged that self-perceived high risk among youth in Ghana is associated with a sharp increase in condom use at time of last intercourse. A study by Wutoh et al. (2006) showed that more than half \((n=54, 54\%)\) of the street youth in Ghana considered themselves at risk for contracting HIV. Specifically, 58\% \((n=18)\) of females considered themselves at risk while 53\% \((n=36)\) of males considered themselves at risk. From the same data, it is reported that 11 \((39\%)\) of 28 males, and 10 \((43\%)\) of 23 females indicated high risk of contracting HIV. Though participants’ perceived risk of contracting HIV was fairly high, it was noted that there was a poor history of HIV testing \((n=2)\). Gyimah et al. (2010) suggested that young adults in Ghana, particularly women, perceive themselves as high risk to HIV infection.

Manu and Ven (1999) argued that the literature examining the links between perceived susceptibility and behaviour offer mixed results. According to the researchers, few studies (e.g., Adefuye et al., 2009; Sena et al., 2010) have supported the view that an increase in perceived susceptibility is related to a decrease in high risk sexual behaviour while other studies (e.g., Anarfi, 1998; Mill & Anarfi, 2002), suggesting that the perception of HIV risk is generally related to a poor appreciation of risk to HIV infection. The authors posited that most young people in Ghana continue to engage in various HIV risk behaviours in spite of high basic knowledge of HIV. This conclusion is consistent with empirical data that demonstrates that knowledge alone may not be sufficient to influence positive changes in sexual behaviours (Mill & Anarfi, 2002). The reason for this disconnection between HIV/AIDS knowledge and safer sex behaviour remains somewhat unanswered in the literature. The current research seeks to explore this gap further.

Other Ghanaian population data was collected by Tenkorang, Adjei, and Gyimah (2011), who studied perceptions of HIV/AIDS risk and sexual risk-taking among young people in Ghana.
The data suggested that young people’s vulnerability to HIV infection is attributed to risky sexual behaviours, low risk perception, and lack of access to HIV information. It was noted that young Ghanaians with at least some awareness of perceived risks are less likely to engage in risky sexual behaviours than those with no awareness. It was mentioned that most socio-economic and demographic variables were not significantly associated with sexual risk-taking. Education is noted as a significant variable in predicting risk perception in young Ghanaians. Tenkorang et al.’s research indicated that Ghanaian young women with only a primary education have higher odds of engaging in risky sexual behaviours compared to those with secondary or higher education.

Stephenson (2009) conducted a study examining the role of community, household and individual factors in the reporting of risky sexual behaviours among young people aged 15 to 24. The study analyzed demographic and health survey data from the period, 2001 through 2003 and, interestingly, community demographic profiles including family income and religious affiliation were reportedly not associated with risky sexual behaviours among young women. On the other hand, prevailing economic conditions and the behaviours and attitudes of adults in the community strongly influenced the sexual behaviours of young people in the community. For instance it was also noted that married women were significantly less likely than unmarried women to report risky sexual behaviours.

The same study discussed the influence of educational attainment, employment status, and household wealth on risky sexual behaviours and it was reported that young women with a secondary or higher level of education were less likely than were those with no education to report risky sexual behaviours. However, there was no association between a primary level education and reports of risky sexual behaviours. It was noted, however, that household wealth was significantly associated with reduced odds of reporting risky sexual behaviours among young women. In
addition, several indicators of knowledge and autonomy were associated with reports of risky sexual behaviours. Hence, young women who reported that they had the final say in decisions concerning their health were significantly less likely than were those who did not make their own health decisions to report risky sexual behaviours. These findings were replicated by Anarfi (2010), Baiden and Rajulton (2011), and Tagoe and Aggor (2011).

Furthermore, relationships between community employment and educational levels, and reports of risky sexual behaviours were explored. In Ghana, higher employment levels in young women were associated with increased reporting of risky sexual behaviours. As well, there was evidence that higher community educational levels were related to a reduction in the reporting of risky sexual behaviours. For instance, residence in a community with high male educational attainment reduced the reporting of risky sexual behaviours among young women. As per the data, the study highlights the focus on the different pathways through which the community influences sexual behaviours as intervention points to the need for HIV behavioural change. In line with this, the current research will add to the understanding of how the community impacts the sexual behaviours of young Ghanaian women, as this is one of the demographic variables in the ARRM.

Langen’s (2005) study involving South Africans noted that women who considered themselves at risk of HIV attributed their risk to their husbands’ promiscuous behaviour and were four times more likely to use condoms compared to women who did not consider themselves at risk. In a similar study involving university students in Zimbabwe and Nigeria, Ajuwon (2000) found that those who used condoms were more likely than nonusers to have an accurate perception of their HIV risk. As well, personal risk perception was also associated with increased condom use among urban youth in Cameroon (Meekers & Klein, 2001). The HIV literature also reports on the relationship between HIV risk perception and condom use among Mozambique youth aged 15 to
The study showed that 27% of women and 80% of men who considered themselves to have no risk or a small risk of contracting HIV were actually at a moderate or high risk. For both men and women, the prevalence of condom use at last sexual intercourse was more than twice as high among those who assessed their risk correctly (30% and 16%, respectively) than among those who did not (14% and 6%, respectively).

In summary, these studies suggest that one’s correct assessment of personal risk is positively associated with condom use. That is, personal knowledge of HIV transmission and accurate assessment of one’s own risk are among the key factors in implementing safer sexual practices. Using this information as a backdrop for the current dissertation provides insight into the psychological and interpersonal factors that impact risk behavior. Further, with these findings, clinicians including health care practitioners and educators can help increase young Ghanaian women's awareness of their risk of contracting HIV.

**Condom Use**

Condom use is another risk-related issue. For several reasons, limited usage of condoms among young Ghanaian women has been identified (Adomako, 2002). This is reportedly due in part to the power dynamics that play out in any sexual relationship. According to Worth (1989), condom use may carry the stigma of infidelity and lack of trust. Worth explained that a young woman’s inability to negotiate safer sex has often been attributed to powerlessness. In their research, Adih and Alexander (2003) studied the psychosocial and behaviourial factors that influenced condom use among 601 young men between 15–24 years of age. The study acknowledged that out of the 65% sexually active male respondents, only 25% had used condoms
at the time of last intercourse. With a multiple regression analysis, findings from the study revealed that perceived susceptibility to HIV infection, self-efficacy for condom use, barriers to condom use, and social support were significant predictors of condom use. Moreover, it was reported that participants who perceived a high level of susceptibility to HIV infection were almost six times as likely to have used condoms at last intercourse. On the whole, the data showed that participants who perceived a high level of self-efficacy for using condoms and few barriers to condom use were nearly three times more likely to have used condoms at last intercourse. Although the study is conducted among young men, the findings were statistically significant and general outcomes could be applied to the current study involving young women in Ghana.

Bosompra’s (2001) study on the determinants of intentions to use condoms among university students in Ghana revealed that norms as well as the perceived disadvantages of condom use were significant determinants of intention to use condoms. A critical aspect of the study showed that respondents who intended to use condoms consistently and those with no such intentions were equally motivated to comply with the wishes of their significant others (including sexual partners, close friends, parents, and medical doctors). Moreover, it was apparent that intenders consistently held a stronger belief than non-intenders that their significant others approved of condom use.

With respect to the present study, understanding and focusing simultaneously on participants’ sources of influence including their peers, sexual partners, and broader social networks will enhance perceptions of condom use in participants. For many young women, the nature of the social bond with a partner also seems to affect sexual decision-making and condom use. Five studies (Bankole et al., 2007; Akwara et al., 2003; Gage, 1998; Gyimah et al., 2010; Mill & Anarfi, 2002) implied that risk-related sexual behaviour in young Ghanaian women is
influenced by sexual cultures, peer norms, patterns of condom use, and sexual negotiation. For most women, the use of condoms with sexual partners was restricted by the high value placed on fertility, the negative association of condoms with prostitution, and the women’s limited ability to influence decision-making in this area. Neequaye-Tetteh et al. (1993) also mentioned that though knowledge of condom use is high among young Ghanaian women, most use condoms inconsistently.

Karim et al. (2003) suggested that a sizable number of contextual factors and attributes of the Ghanaian youth themselves were associated with sexual behaviours, while individual characteristics were stronger predictors of condom use. Karim et al. (2003) added that only 24% and 20% of sexually experienced young males and females, respectively, use condoms consistently. Further, although young women’s general knowledge of HIV may be increasing, it is apparent that many young women do not have good knowledge of correct usage of condoms. While this may be true, other researchers like Ridley and Baah-Odoo (2010), and Sallar (2003) posited that susceptibility to HIV/AIDS, perceived benefits or vulnerability, and perceived efficacy of condom use somewhat influenced what young people think about when purchasing condoms. Again, Akinrinola et al. (2007) indicated that younger women might find it difficult to obtain condoms for fear of being embarrassed at drug stores and family planning centers. In addition, younger women, as compared to their male counterparts, may not have the means to buy condoms. Undoubtedly, young women who had received sex education in school, attended school, and had been exposed to radio, were reported to be more likely to use condoms correctly. Ampofo (2002) also summarized that young women with education were more likely to use condoms correctly compared with their uneducated counterparts (Ampofo, 2002). Together, the above reviewed studies provide further justification for the current study; thus, targeting key contextual factors that
influence the behaviours of young Ghanaian women in addition to providing them with relevant information on sexual communication and negotiation.

Factors associated with sexually transmitted infections and HIV/AIDS among 1280 young Ghanaian women ages 15 to 25 (Akoto & Ohene, 2003) revealed that, compared to participants with no reported history of STIs, the STI group was less likely to know where to get condoms but more likely to use a condom at their last sexual encounter. In addition, it was reported that participants in the STI group were significantly less likely to discuss condom use as a family planning method with their partners but more likely to have had two or more partners in the preceding 12 months. In brief, the study suggested that factors associated with HIV risk behaviour among young Ghanaian females include not knowing where to get condoms and not discussing condom use with a partner.

While young women face challenges (including, self-esteem issues, economic and cultural perceptions of accessing condoms and negotiating their use with partners), Mason (1994) pointed out that this assertion remains valid only if there is reason to suggest that women are more motivated than men to use condoms but are unable to do so in the face of men’s opposition. Consistent with this assertion, Ampofo (2002) observed that women were more willing to use condoms and would suggest their use if they did not trust their partners. All the same, two researchers (Anarfi, 2009; Odotei, 2002) argued that women who receive financial or material rewards from sexual relationships are somewhat less likely to resist their partners’ unwillingness to use condoms.
Female Poverty and HIV/AIDS

Poverty is the condition of not having enough income to meet basic needs—food, clothing, and shelter. According to Anarfi (2001), Oppong, Oppong, and Odotei (2003), and Wyatt et al. (1997), poverty predicts early engagement in sexual intercourse in young black women and is somewhat strongly associated with multiple sexual partners, pregnancy, sexually transmitted infections, and HIV. Madise, Zulu, and Ciera (2010) examined the effects of wealth status on the sexual behaviour of adolescents in four African countries: Burkina Faso, Ghana, Malawi, and Uganda. In particular, the study explored the influence of poverty on age of first intercourse, condom use, and multiple relationships. The results showed that the wealthiest girls in Burkina Faso, Ghana, and Malawi became sexually active later than their poorer counterparts. Wealthier adolescents were also reported to be most likely to use condoms at the time of last sexual intercourse. Nevertheless, wealth status was not associated with the number of sexual partners. Overall, the researchers argued that although the link between wealth status and sexual behaviour is not consistent, there is evidence that poor females are more vulnerable to HIV infection because of non-use of condoms and early sexual engagement.

Mill and Anarfi (2002), in a study of Ghanaian women, found that women’s vulnerability might be influenced by factors such as poverty, gender, and unequal power relationships. It was noted that the poverty experienced by many of the women during their childhood years, coupled with societal beliefs that favoured the education of males, restricted them from attaining their educational and career goals. Therefore, women became dependent on men and in some instances took entered into intimate relationships to assist them with the purchase of food, clothing, and shelter, as a strategy for survival. Three additional studies (Awusabo-Asare, Anarfi, & Agyeman, 1993; Awusabo-Asare & Anarfi, 1997; Turmen, 2003) supported these findings. The researchers
concluded that poverty can limit young women’s ability to access resources and HIV prevention information, and can also propagate sexual inequality in their relationships. According to the researchers, young women living in poverty tend to have very little power in their relationships and most times are unable to negotiate condom use or question their partner’s sexual fidelity.

Gyimah (2010) also mentioned that, “obtaining financial favours from men appeared to be common in a society where sexuality has become a commodity with a price that can be negotiated for, and women bargain to their advantage (p.41).” Four studies (Anarfi, 1997; Ankomah, 1992, 1999; Henry & Fayorsey, 2002; Mill & Anarfi, 2002) revealed that young females from poor homes are more likely to be exposed to the temptation of seeking financial favours from wealthy men. They explained that in such situations, young women are less likely to negotiate for safer sex since the relationship is primarily transactional or contractual in nature. On the other hand, young women from wealthy households were somewhat shielded from the temptations of receiving financial favours from sexual partners in return for sex. The current study will explore the impact of family income on sexual activities or risky sexual behaviours.

**Culture, Patriarchy and Gender Roles**

The United Nations has stated that gender roles and gender inequalities are major driving forces behind the AIDS epidemic in Africa and the rest of the developing world (UNAIDS, 2013). Figuera (2002), Gupta et al. (1996), and Whitehead (2001) have reported that the literature on social inequalities and economic dependency on HIV vulnerability among women is empirically supported and therefore cannot be underestimated. They further explained that certain social and cultural norms that deny women sexual health knowledge and control over their bodies make women more susceptible to HIV infection (UNAIDS, 2013). According to Feldman (2008),
African societies’ demand for sexual fidelity and docile sexual behaviour from women infringes on their ability to negotiate for safer sex with their partners. Due to culture-based sex or gender roles, most women are unable to implement this practice.

The literature on the relationship between culture, gender roles, and HIV/AIDS risk behaviour in Africa and particularly Ghana has been widely discussed by researchers including Ampofo (2001), Anarfi (1993), Gyimah et al. (2010), Oppong, Oppong, and Odotei (2003). As a case in point, Ampofo (2001) surveyed two communities in Ghana for the kinds of attitudes expressed with regard to specific gender roles and sexual and reproductive behaviour. The data from the study showed that, with few exceptions, patriarchal attitudes prevailed across age, sex, and lineage type. De Ciman and Abib (2010) also examined the relationship between gender and HIV/AIDS in Ghana and suggested that, in both institutional and community settings, cultural and social norms had an impact on sexual behaviour. As well, two studies (Ankomah, 1999; Mill & Anarfi, 2002) analyzing heterosexual relationships using social exchange theory found that “when resources are limited, women discuss their sexual relationships with men as being in the interest of their own material gain, often leading to obligations to have unprotected sex, even when male partners are known to have other partners” (Rosenthal & Levy, 2010, p. 3). Diawara (2003) mentioned that limited access to economic opportunities and autonomy might also contribute to a woman’s vulnerability.

In sum, six studies (Agyei-Mensah, 2001; Anarfi, 2003; Awusabo-Asare, 1995; Gyimah et al., 2011; Oppong, Oppong, & Odotei, 2003) agreed that women who play any active role in the negotiation of safer sex are traditionally perceived as being promiscuous and not expected to take the initiative in demand for sex. While this might be true, it is also reported that women are often concerned about their husbands’ or boyfriends’ infidelity and the possibility of them being infected
with HIV/AIDS. This is also partly due to the fact that it is culturally acceptable for men to have more than one sexual partner, while women are expected to be monogamous. Moving forward, it is apparent that there is a need for continued cultural education on women’s rights, and women will need to participate in sexual health education at the macro and micro levels.

**Peer Norms and Influence**

Peer influence affects the decision to use condoms, to abstain and to some extent engage in risky sexual behaviours. Several studies on young Ghanaian women (Adomako, 1991; Anarfi, 2001; Gyimah, 2010; Henry & Fayorsey, 2002) have documented the effects of peer influence on young women’s sexual activity. Data from these studies suggested that young women whose friends are sexually active or who perceive their friends to be sexually active are more likely to be sexually active themselves. For example, in Bingenheimer’s (2013) study, it was concluded that a young woman is less likely to practice safer sex when inconsistent condom use is the norm in her peer group, as that might attract sanctions or disapproval from the group. Santelli et al. (2004) explored potential psychosocial predictors for initiation of sexual intercourse among youth. The results suggested that personal and perceived peer norms about refraining from sex were a strong and consistent protective factor.

In another study, Wolf and Pulerwitz (2003) explored the impact of interpersonal communication about reproductive health information among Ghanaian youth and it was noted that young people who spoke with both peers and adults were 2.08 times more likely to report taking some action to protect themselves from AIDS than those who spoke to no one. Surprisingly, it was noted that young people who only spoke with peers were 1.71 times more likely to have done something to protect themselves from AIDS. Further, young people who only spoke with
adults were not significantly more likely to protect themselves from AIDS than young people who only spoke with peers. This finding, an important outcome of the study, suggests that sexually active youth are more than twice as likely to talk to peers as adults. Seven studies (Adomako, 2001; Anarfi, 2003; Buhi & Goodson, 2007; Gyimah et al., 2010; Mill & Anarfi, 2002; Santelli et al., 2004) acknowledged that young women who perceived their friends as having a general positivity towards safer sex were more likely to sexually abstain or to delay sexual initiation.

**Childhood Sexual Abuse**

In many countries, sexual violence such as rape or childhood sexual abuse, has long been ignored in the HIV/AIDS literature. Psychologists, including Stermac, Piran, and Sheridan (1993) have argued that it is not just the act of sexual assault that affects the survivor, but also the after-effects that place them at risk. As they explained, for instance, some women tend to engage in indiscriminate, unprotected sexual activities to help them cope with the emotional sequelae of childhood sexual abuse. Allers and Benjack (1991) and Scott, Gilliam, and Braxton (2005) also mentioned that a woman’s history of child abuse predicts greater sexual risk-taking as an adult. They stated that in a study by Perrino, Fernández, Bowen, and Arheart (2006) involving low-income African American women, childhood emotional, physical, and sexual abuse were each reported as independently related to failure to use condoms with a main partner. A similar study (Johnsen & Harlow, 1996) among college women found that childhood sexual abuse predicted reduced ability to demand condom use or to refuse sex. In addition, Paxton, Myers, Hall, and Javanbakht’s (2004) research on American women from diverse racial and ethnic backgrounds found that women who were HIV-positive were more likely to have experienced childhood sexual assault than women who were HIV-negative. In Haiti, it was also found that women’s experiences
of forced sex were related to their rates of sexually transmitted infection diagnoses (Kershaw et al., 2006). Further, Pauw and Brener (2003) reported that female sex workers in Cape Town, South Africa, often discussed the common experience of being forced to have unprotected sex in childhood. Erulkar (2004), in a study on sexual behaviour among sexually experienced respondents, found that 21% of females and 11% of males had experienced coercive sex by boyfriends, girlfriends, and husbands. Findings from the study suggest that sexual coercion was associated with having multiple sexual partners and with having had a reproductive tract infection.

Cofie’s (2010) study on young Ghanaian women suggested that women who have experienced any form of intimate partner violence tend to have continued sexual relationships with that partner in order to avoid being hurt again. Similarly, (Gyimah, 2008) added that women living in poverty who are in sexually abusive relationships are at an added disadvantage, including being vulnerable to HIV infection (Adomako, 1993; Anarfi, 1992; Anarfi & Antwi, 1995; Gyimah, 2008, 2010, 2011; Koop, 1987; Misovich, Fisher, & Fisher, 1997; UNAIDS, 2010). In reviewing the literature, it is clear that childhood sexual abuse or partner violence has an impact on HIV infection in young women. However, reports and literature on the topic are limited; this creates an opportunity for the current research to explore the influence of childhood sexual abuse on sexual risk behaviours in the context of young Ghanaian women.

**Protective Factors**

On the other end of the spectrum are variables that are described in the context of protective factors in HIV risk prevention. According to Simmel (2007) “protective factors are conditions or attributes including skills, strengths, resources, supports or coping strategies in individuals or communities that help people deal more effectively with stressful events and
mitigate or eliminate risk in families and communities (p. 2).” In the context of the current study, cultural factors are considered to be key variables that are more likely to help young Ghanaians engage in safe sex practices, as compared to conventional constructs that target primarily individual attitudes related to HIV. The section that follows reviews five protective variables selected for the current study.

**Interpersonal factors**

Humans are instinctually drawn to seek relationships with one another and for the most part with the “self” (Anarfi, 2003). Pearson (2006), in a study on whether or not personal control and self-efficacy in sexual negotiation are associated with safer sex practices among youth, indicated that personal control and self-efficacy in sexual negotiation are significantly associated with safer sex practices including condom use. According to Pearson (2006), young people who believe in the efficacy of their own actions may be more likely to abstain from sex or to use condoms. Furthermore, Pearson (2006) hypothesized that young women with a stronger sense of personal control may be more likely to negotiate effectively within sexual relationships. Three studies (Anarfi, 2003; Oppong, Oppong, & Odotei, 2003; Soler et al., 2000) also discussed how a sense of self-efficacy in HIV prevention is significantly correlated with safer sex practices including abstaining from sex and using condoms consistently. On the whole, a sense of personal control and sexual self-efficacy is critical in promoting safer sex in young women.

**Self-Efficacy, Self-Esteem and Assertiveness**

According to Bandura (1977), self-efficacy is defined as people’s belief that they can exert control over their own motivations, thoughts processes, emotional state, and patterns of behaviour. As such, positive self-efficacy gives assurance and confidence and promotes positive behaviour.
For instance, a woman’s perception of herself can greatly influence her sexual interactions and behaviour. Jemmott et al. (1992) and Odutolu (2005) mentioned that perceived self-efficacy to buy and use condoms correctly predicts safer sex in female adolescents. Additionally, Wyatt et al. (1997) noted that good self-esteem as well as religious involvement is associated with lowered sexual risk-taking among Black women. On the whole, they acknowledged that positive self-esteem is associated with lowered sexual risk-taking among young women. Despite the above statement, Wyatt et al. (1997) cautioned that psychological well-being can be impaired by a history of physical and/or sexual abuse during childhood. Wyatt et al. (1997) further posited that childhood sexual abuse has been found to impair a child’s sexual development and is also associated with early sexual intercourse, low sexual self-esteem, and high-risk sexual behaviours (Wyatt et al., 1997). From the perspective of these researchers, sexual, psychological, and/or physical abuse during childhood can also lead to vulnerability in sexual relationships.

Lastly, Santelli et al. (2008) explored potential psychosocial predictors for initiation of sexual intercourse among youth. In the study, 52% of the respondents were female, 51% black, 30% Hispanic, 9% white, and 3% Asian. At baseline, 13% of girls and 39% of boys reported already having initiated sexual intercourse. The result suggested that self-efficacy showed a mixed effect. That is, both psychosocial factors and demographic variables provided independent explanatory power. However, psychosocial factors, particularly norms about having sex as measured in the current study are deemed crucial factors in the initiation of sexual intercourse.

**Spirituality and Africentricism**

Spirituality is an important practice in Ghanaian society, particularly among women (Anarfi, 2003; Gyimah et al. 2013; Odotei, 2002; Oppong & Agyei-Mensah, 2004). Ghanaians
view spirituality or religiosity as the degree to which individuals endorse a relationship with God or an ancestral being who possesses a supernatural force. Findings from Oppong, Oppong, and Odotei (2003) showed that spiritual and religious beliefs among young Ghanaian women are viewed to be protective factors against sexual risk behaviours.

Addai (2000) studied religious differences in sexual initiation among Ghanaian women aged 15 to 49, and found that religious affiliation is an important predictor of premarital sexual engagement among ever married women but not among women who have never married. Additionally, the data showed that women belonging to liberal religious groups are more likely to experience premarital sex than those from more conservative groups. It was also noted that participants with no religion were significantly more likely to report premarital sex compared to counterparts ascribing to traditional religions (e.g., Christians groups). For example, Addai (2000) argued that Ghanaian Pentecostal, Baptist, and other Evangelical Churches tend to be strict and uncompromising in enforcing sexual and moral ethics; individuals found to be involved in premarital sexual acts, such as those who got pregnant without a church wedding, risk expulsion from such sectarian congregations.

In another attempt to understand the relationship between religious involvement and HIV infection in Ghana, Takyi (2001) explored whether or not a woman’s knowledge of HIV/AIDS is associated with her religious affiliation, and whether or not religious affiliation influences AIDS prevention (i.e., protective) attitudes. Findings from the study indicated that religious affiliation has a significant effect on AIDS knowledge. However, the study did not find religious affiliation to be associated with changes in specific protective behaviour, particularly in the use of condoms.

Similarly, Takyi (2003) explored how churches in Ghana are involved in preventing the spread of HIV/AIDS. From their analysis it is evident that churches in Ghana enforce pre-marital
HIV testing as well as abstinence before marriage as part of the HIV prevention strategy. Gyimah et al., (2010) also found that Muslim and traditionally religious men in Ghana were less likely to engage in risky sexual activity (including multiple sexual partners). However it was noted that there was no relationship between religion and sexual practices when economic and other social factors were accounted for. In general, Gyimah et al. (2010) found that certain sex related norms as espoused in different religions make sexual intercourse in premarital sexual relationships more tolerable, but religion did not have any influence on the sexual behaviour of these young people.

**Abstinence**

Abstinence is quite different from the other factors cited above. It is a behavior while the other factors are social and psychological, which one might assume would affect abstinence behavior. The usefulness of abstinence as a protective factor is highly debated. At the outset of the HIV prevention campaign in Africa, the ABC model (a sex education policy based on harm reduction techniques) was introduced to Africans by the US government in response to the growing epidemic of HIV/AIDS (UNFPA, 2011). Abstinence-based sex education included issues of human relationships, the basic biology of human reproduction, safer sex methods and contraceptives, HIV/AIDS information, and masturbation in place of sex. This model recommends sexual abstinence outside of marriage and having only a single long-term sexual partner as ideal (CDC, 2010). The use of condoms and other safer sex practices are also advocated only if it is not possible to remain with a single sexual partner. Although pragmatically ineffective, the ABC approach is palatable to many African governments and relief agencies (Stanford University, 2009).
A study on the factors associated with sexual abstinence among young people was explored in four sub-Saharan African contexts: Burkinabé, Ghanaian, Malawian, and Ugandan (Kabiru & Ezeh, 2009). The researchers specifically examined differences among four groups of never married, 15–19 year olds: primary abstainers (sexually inexperienced), secondary abstainers (last had sexual intercourse more than 12 months prior to the survey), recent abstainers (sexually active in the last year but not in the last 3 months), and sexually active (had sexual intercourse in the last 3 months). In general, a greater proportion of females than males were identified as primary abstainers; of note, primary abstainers were younger than sexually experienced adolescents. In addition, it was reported that current involvement in a romantic relationship was a significant predictor of sexual status, with primary abstainers being the least likely to be romantically involved. Overall, findings suggest that adolescents’ gender, prior sexual experiences, and contextual circumstances, such as romantic partnerships, should be considered when designing abstinence promotion programs.

A different study exploring abstinence and safer sex HIV risk-reduction interventions for African American adolescents in a randomized controlled trial (Jemmott, Jemmott, & Fong, 2010) showed that abstinence intervention participants were less likely to report having sexual intercourse in the 3 months after intervention than were control group participants. However, the researchers found that the differences between the control and participant group were not maintained at 6- or 12-month follow-up. Safer sex intervention participants reported significantly more consistent condom use than did control group participants at 3 months, and higher frequency of condom use at all follow-ups. Among adolescents who reported sexual experiences at baseline, the safer-sex intervention group reported less sexual intercourse in the previous 3 months at the 6- and 12-month follow-up than did the control and abstinence intervention groups, and less
unprotected intercourse at all follow-ups than did the control group. There were no differences in intervention effects with adult facilitators as compared with peer co-facilitators. It is clear that both abstinence and safer-sex interventions can reduce HIV sexual risk behaviours, but safer-sex interventions may be especially effective with sexually experienced adolescents and may have longer-lasting effects.

Awusabo-Asare, Abane, Badasu, and Anarfi’s (2008) study reported that 80% of the young people in their study considered abstinence as a protection against HIV and STDs, while 20% think that they had been pressured to have sex and never able to follow what they considered the right course of action. Perhaps that is why they do not take other protective measures when engaging in sexual behaviour.

2.3 Gaps in the Literature

It was noted in the above literature discussion that while HIV infection among young Ghanaian women is growing rapidly, very few reports on wide-ranging HIV risk factors are documented. Thus, there are only a few identified scientific studies that vigorously discuss psychological, interpersonal, and cultural factors related to HIV risk behaviour even though HIV/AIDS infection rates among young Ghanaian women is increasing. It was surprising to learn that even though there was minimal data, the literature did not explicitly make a distinction between young women and older women. Also, most of the studies were conducted among Ghanaian women with higher socioeconomic status in urban communities compared to the rural Ghanaian population. Evidently, the mode of recruitment presented some concerns. It was apparent that participants were mostly recruited from educational institutions or as a part of a national survey. For the most part, this literature review showed that most Ghanaian young women have at
least a basic knowledge of HIV/AIDS; however, comprehensive HIV/AIDS knowledge is limited. It was also noted that HIV prevention often occurs when the entire community, including women, are well educated about current HIV and AIDS prevention strategies including proper use of condoms. Furthermore, it was also evident that the disconnection between HIV/AIDS knowledge and safer sex behaviour remains somewhat unanswered in the literature. Nonetheless, the review highlights that young people’s vulnerability to HIV infection is attributed to risky sexual behaviours, low risk perception, and lack of access to HIV information. In terms of perceived risk behaviour, it was noted that young Ghanaians with at least some awareness of perceived risks are less likely to engage in risky sexual behaviours than those with no awareness. Education was also noted as a significant variable in predicting risk perception in young Ghanaians.

From a psycho-cultural standpoint, it is noted that most of the Ghanaian studies appear to be funded by multinational agencies that support policies believed to primarily benefit the most vulnerable, particularly women and children. However, these studies do not speak to the cultural attributes and cultural dynamics of surrounding sexual engagement with male partners (i.e., the role of men in sexual relationships) among Ghanaian women; this has been overlooked for a long time. To reiterate, is there a better approach to understanding HIV risk factors that can be comprehensively utilized in Ghana? With this in mind, the ARRM is used as a framework for understanding sexual behaviours as people progress from one stage of the ARRM to the next (i.e., progression from unsafe to safe behaviours).

**Conclusion**

In summary, many gender-related, cultural, social, and structural factors have been identified as factors that influence sexual risk behaviour among young Ghanaian women in Ghana.
Findings from this review highlighted the HIV-related factors preventing young women from practicing safer sex. The evidence also suggested that many of the structural barriers to practicing safer sex can be overcome through interventions that aim to inform and empower women or increase young women’s awareness of and opportunities to access HIV services. It was also identified that there is an urgent and continuous need for community education on HIV related factors. Additionally, there are substantial gaps in the literature and more research is needed for the most part on the applicability of the HIV behaviour change models, particularly the ARRM, in Ghana. The way forward is to develop and adapt frameworks or models that will aid the understanding and reduction of interpersonal, personal, gender, and cultural barriers (especially HIV related risk behaviours) in Ghana. Overall, from this review, one can conclude that literature on specific causal factors of HIV is quite limited and in some cases non-existent (e.g. childhood sexual abuse, peer influence, and psychological factors). A large part of this disparity may be accounted for by the relatively limited research interest in these causal factors. Given the connection between the ARRM and selected variables, the variables identified literature include AIDS knowledge, perceived risk, condom use, poverty, culture, patriarchy, gender roles, peer norms, and the relationship between childhood sexual abuse and HIV infection. All the variables listed were explored in the current study for the reason that it provided a baseline for better understanding of the research problem and also an avenue to address the research goals and questions (refer to table 1 for list of variables).
Chapter Three
Conceptual Framework

3.0 Introduction

According to the Andrew Darnton Centre for Sustainable Development (2008), “models of behaviour facilitate the understanding of specific behaviours by identifying the underlying factors which influence them, while theories of change show how behaviours change over time” (Andrew Damton Center, 2008, p. 1). The Centre explained that behavioural theory is diagnostic and is designed to explain the determinant factors underlying behaviour, whereas change theory is more pragmatic and is developed to support interventions for changing current behaviours or encourage the adoption of new behaviours. Although these two bodies of theory have distinct purposes, they complement each other and play critical roles in developing effective risk interventions. The following sections outline the components of the study’s overarching conceptual framework in relation to behaviour change. To reiterate, the current study sought to understand the variables that influence sexual risk behaviour of young Ghanaian women at each stage of the ARRM three stages model (see details in table 1a above). Lastly, the study also examined demographics and how they relate to risky behaviour.

The study was guided by an integrated theoretical framework for HIV/sexually transmitted disease (STD) prevention research -- the AIDS Risk Reduction Model (ARRM) and the Expanded ARRM. The core principles of ARRM are based on other traditional behaviour change models that predated the ARRM. These models include the Health Belief Model, The Theory of Reasoned Action/The Theory of Reasoned Action, and Stages of Change Model/Transtheoretical Model.
3.1 The Health Belief Model

The health belief model (HBM, Becker et al., 1970) is one of the first and possibly the most widely used of the health behaviour models. It was developed in the 1950s by a group of Public Health Service social psychologists in the United States who wanted to explain why very few people were interested in disease prevention programs. Generally, the model postulates that health-seeking behaviour is influenced by a person’s perception of the threat posed by a health problem, and the value associated with actions aimed at reducing the threat. In other words, a person’s health-related behaviour depends on the individual’s perception of six critical areas: (1) perceived susceptibility (referring to a person’s perception that a health problem is personally relevant or that a diagnosis of illness is accurate), (2) perceived severity (even when one recognizes personal susceptibility, action will not occur unless the individual perceives the severity to be high enough to have serious organic or social complications), (3) perceived benefits (referring to the person’s belief that a given treatment will cure the illness or help to prevent it), (4) perceived costs (referring to the complexity, duration, and accessibility of the treatment), (5) motivation (including the desire to comply with a treatment and the belief that people should do so), and (6) modifying factors (including personality variables, patient satisfaction, and socio-demographic factors; Bandura, 1989; Croyle, 2005).

Of notable significance, the HBM has been used to explore a variety of health behaviours in diverse populations. For example, Rosenstock et al. (1994) reviewed studies on the HBM in the United States involving people from the general population, homosexual men, adolescents, and pregnant women. Significant HBM dimensions identified were perceived benefits and perceived susceptibility, with perceived severity identified as the least significant variable. Similarly, a study by Lux and Petosa (1994) used the HBM to predict safer sex intentions of
incarcerated youth (n = 452) between the ages of 13 to 18 years from a midwestern state. HBM constructs were measured with an instrument tested for face, content, and construct validity as well as internal reliability. HBM constructs accounted for 28% of the variance in safer sex intentions. On the whole, the study supported the use of the HBM in understanding HIV risk behaviour in the study population. Although, it was concluded that 28% of the variance is accounted by the HBM constructs, Carmel (1991) argued that the predictive validity of HBM varies across populations therefore findings should be interpreted with caution. Carmel (1991) also stated that the model ignores the underlying importance of cultural values and social norms in decision-making. Aggleton and Rivers (1996) stated, “People do not behave in isolation from their particular social context, including their normative environment and interpretations that group attaches to behaviour” (p. 241).

Within the Ghanaian context, the Health Belief Model constructs have been examined in HIV related studies. For example, in their study on factors influencing condom use among women in Ghana, Baiden and Rajulton (2011) pointed out that with the exception of perceived severity, the HBM can be effectively applied to understanding condom use in young Ghanaians, more particularly with condom negotiation skills. Bosomprah (2001), in a HBM study, stated that although women acknowledge safer-sex practices to reduce risk of HIV infection, they do not adopt them if they cannot exercise control in sexual relations. According to Gage (1998), the decision to not have sex by a young woman in a developing country such as Ghana is not influenced only by fear of the consequences but also by strong cultural values on sexual relationships. Gyimah et al. (2011) concluded that in spite of the limitations of HBM, the constructs or components are useful tools for empowering condom negotiation skills in Ghanaian women. Taken together, the studies on the HBM suggest that it can predict some risk
behaviours, more especially safer sex intentions with young Ghanaian women. It can be concluded that “the inability of the HBM to make tangible provision for the social environment where behaviour takes place has created a gap concerning its application in Africa where traditions are held in high esteem” (Odutolu, 2005; p.242). In contrast, the ARRM allows for the incorporation of cultural variables above and beyond the variables touched on by the HBM. Consequently, the utilization of the expanded ARRM in the current research is deemed most appropriate at this point.

3.2 The Theory of Reasoned Action

One other notable theory prior to the introduction of ARRM is the Theory of Reasoned Action (TRA). The TRA was introduced by Ajen and Fishbein (1980) and it is based on the premise that humans are rational and that the behaviours being explored are under volitional control (Fishbein, Middlestadt, & Hitchcock, 1994). In other words, the model supports a linear process in which changes in an individual’s behavioural and normative beliefs also known as cognitive structures ultimately affect the individual’s actual behaviour (a person’s intention remains the best indicator that the desired behaviour will occur). According to Fishbein et al. (1994), these underlying cognitive structures often have varied influence over a person’s intention and vary across cultures and age groups. Thus, it is important to determine which variables and corresponding cognitive structures exert the greatest influence on a selected research group (Fishbein, Middlestadt, & Hitchcock, 1994). For example, results from a study of northern Thai men revealed that their perceptions of peer norms were the best predictor of condom use (Van Landingham et al., 2007). Additionally, in a study of college females in the
United States, attitudinal beliefs exerted greater influence on the intent to use condoms by sexually inexperienced females (Middlestadt & Fishbein, 1990). Further, studies conducted in Zimbabwe applied the theory to research on condom usage by females and males (Wilson, Zenda & Lavelle, 1992) and the results showed a relationship between peer norms and condom use.

Similar to the HBM, a major limitation of the TRA is the inability of the theory (due to its individualistic approach) to consider the role of environmental and structural issues (Kippax & Crawford, 2003). In some instances, individuals may first change their behaviour and then their beliefs and attitudes about their newly adopted behaviour. “For example, studies on the impact of seatbelt laws in the United States revealed that people often changed their negative attitudes (after 6-months duration) about the use of seatbelts as they grew accustomed to the new behaviour.”

Overall, it can be argued that the TRA is insufficient for studying individuals including the current research participants, who appear to be influenced by societal values and norms. As such, the ARRM appears to be the most suitable model as it considers contextual variables from a cultural perspective.

### 3.3 Stages of Change Model/Transtheoretical Model

The Stages of Change Model also known as the Transtheoretical Model is among the most extensively used models to classify individuals with regard to their adoption of safe behaviours across multiples health domains (Prochaska, DiClemente, & Norcross, 1992). Five components of the model were developed (Prochaska et al., 1992) and was postulated that

---

individuals can be classified in one of the five stages of movement across stages. The model was initially introduced by Prochaska et al. in 1982, as they were interested in comparing smokers in therapy with self-changers along a behaviour change continuum -- a process also referred to as “staging.” Specifically, Prochaska and colleagues (1982) were attempting to determine whether therapy could be tailored to meet the specific needs of individuals at a particular stage in the process of change. Grossman et al. (2008) described the model as an approach that helped explain why and how individuals change and how the change can be predicted and facilitated (Grossman, et al., 2008).

The specific stages and processes of change, as described by Prochaska, DiClemente, and Norcross (1992) are:

Stage 1 (Pre-contemplation): An individual seems to have a problem (whether he/she recognizes it or not) but has no intention of changing and identify more negativity associated with their behaviour (Grossman et al, 2008).

Stage 2 (Contemplation): An individual recognizes the problem and is seriously thinking about changing; at this stage the individual is involved in the processes of self-reevaluation (Grossman et al, 2008).

Stage 3 (Preparation for action): The individual recognizes the problem and intends to change the behaviour within the next month. Some behaviour change efforts may be reported, such as inconsistent condom usage. However, the defined behaviour change criterion has not been reached (i.e., consistent condom usage). The processes involve self-liberation, that is, the commitment or belief in the ability to change. Together, individuals in stages one through three “may or may not be considering engaging in the target behaviour” (Grossman et al, 2008; p.914).
**Stage 4 and Stage 5 (Action and Maintenance):** These stages occur when the individual has enacted consistent behaviour change (i.e., consistent condom usage) for less than six months. The processes at this stage involve reinforcement of overt and covert rewards. These two final stages, according to Grossman et al. (2008), are marked by consistent engagement in and intention to continue behaviour. Hence, individuals at this stage perceive greater pros of engaging in the behaviour (Grossman et al, 2008).

A stimulus control study using the stages of change theory in an HIV/AIDS counselling and testing study at sexually transmitted disease (STD) clinics revealed that the counselling provided to participants was based on the client’s particular stage of change (CDC, 1993). In another American study (Prochaska, 1994), data was collected from men who have sex with men but do not identify as homosexual; the findings supported the stages of change theory as a method for characterizing individuals along a change continuum with the intent of enhancing the effectiveness of HIV/AIDS interventions. Furthermore, a study of sex workers in Bolivia, uncovered that few participants in the study were in the precontemplative or contemplative stages in regard to using condoms with their clients (Posner, 1995; Prochaska, DiClemente & Norcross, 1992), which suggests that the majority of participants in the study identified more disadvantages for using condoms. This could also suggest that participants were crossing over to the stages of preparation, action and maintenance. A longitudinal study (Courneya et al., 2001; Malotte et al., 2000) also acknowledged that individuals who identified more downsides to safer sex behaviour (such as condom use) progressed to later stages and regressed to earlier stages of the model. Furthermore, Polacsek et al. (1999), Stark et al. (1998), and Bowen & Trotter (1995) also identified the same pattern of movement or change across the model in young women and college students.
As is the case for all of the stage models or theories, validation of the Stages of Change model (i.e., Transtheoretical model) is far from complete. Some have argued that the stages of change model presents a descriptive rather than causative explanation of behaviour, making the relationship across or between stages ambiguous. Also, each of the stages may not be suitable for characterizing every population. Like the HBM, the stages of change model is flawed in its application to adolescents given the influence of social norms and peer influences on individual decisions regarding safer sex behaviours. In general terms, the above described psychological models failed to consider the role of socioeconomic and environmental factors in sexual decision-making (Kippax & Crawford, 1993).

3.4 The AIDS Risk Reduction Model

One of the most well-established HIV/AIDS risk behaviour and behaviour change models is Catania’s AIDS risk reduction model (ARRM; Catania, 1990). Catania’s (1990) model of behaviour change was selected for the present study because it is an eclectic model that integrates the concepts of Becker et al.’s (1970) health belief model and Fishbein and Ajzen’s (1975) theory of reasoned action. The ARRM is based on the premise that, to avoid infection, a person engaging in risk behaviour must first perceive that he/she is at risk. However, simply recognizing this risk will not lead to behaviour change unless a person also commits him or herself to change. In the course of making this commitment, one typically decides whether or not she or he is able to change the behaviour in question and whether or not the benefits of change outweigh the costs. Once a commitment to change is made, the person must then be able to act upon it. Such enactment is contingent on factors such as perceived social support and external

Catania’s (1990) conceptualization suggests that behaviour change is a process occurring in three stages (refer to Figure 1): (1) labeling one’s behaviour as problematic; (2) intending to change behaviour; and (3) taking action to accomplish that change. In general, Catania’s ARRM emphasizes the goal of understanding why people fail to progress over the change process. Catania and his colleagues believe that the ARRM has considerable utility for understanding HIV-related sexual transmission behaviours and efforts to change those behaviours with diverse populations (Catania, 1990; Fishbein, 2000; Gore-Felton et al., 2005; Noar & Zimmerman, 2005).

**Figure 1: Three Stages of the original ARRM (Catania, 1990)**
3.4.1 Stage One: Labeling Stage

Psychological models of how people cope with health problems are consistent in proposing an intervening decision-making stage between perceiving a health problem and taking action on the problem. The first stage of the ARRM describes three conditions that influence individuals’ labeling of their sexual behaviours as problematic: (1) knowledge of sexual activities associated with HIV transmission; (2) believing that one is personally susceptible to contracting HIV, and believing that having AIDS is undesirable; and, (3) perception of social norms regarding risk. “What an individual believes his or her peer group considers being risky practices influences whether he or she labels the behaviour as risky” (Catania, 1990, p. 3).

In one scenario, a person learns that HIV is sexually transmitted, examines his/her sexual behaviour, labels the behaviour as risky, and in turn begins to feel anxious about and susceptible to contracting HIV. Given the existence of these conditions, it is hypothesized that individuals will label their behaviour as problematic. On the contrary, it is also hypothesized that when level of HIV knowledge is low, an individual is less likely to label her or his behaviour as high risk and is more susceptible to HIV infection. An individual with high HIV knowledge is more likely to accurately label her or his sexual behaviour as low or high risk and may be less susceptible to HIV infection (Catania, 1990; Fisher, 1997; Fisher & Fisher, 2005; Ridey & Baah-Odoom, 2010). Finally, when an individual is surrounded by peers who are well informed and able to label their sexual behaviour as risky, she or he is more likely to label his or her behaviour as risky or vice-versa.
3.4.2 Stage Two: Commitment to Change

This second stage entails making a commitment to reduce high-risk sexual contact and to increase low risk activities. In other words, changing individual high-risk behaviours involves reaching a firm decision to make behavioural changes, and strongly committing to those decisions. Generally, at this stage, the model clearly goes beyond giving HIV/AIDS information, to recognizing the importance of individual assessment of risky behaviours based on commonly accepted behaviour standards in the immediate environment of the individual (Catania, 1990; Basen-Enquist, 1994; Odutolu, 2005; Webb & Sheeran, 2006). Catania (1990) postulated that the commitment process may include: (1) an analyses of the cost and benefits of that decision; (2) an analysis of whether the changes successfully reduce one’s risk of HIV infection or the enjoyment associated with this decision process; (3) self-efficacy, that is, individual beliefs about personal capabilities to produce designated levels of performance that exercise influence over events that affect their lives; and, (4) knowledge of the healthy utility and enjoyability of a sexual practice, as well as social factors (e.g., groups, norms and social support). Then again, remaining undecided or waiting for the problem to rectify itself could mean that an individual is able to label his behaviour as problematic or high risk. However the individual may not remain undecided and will not make any commitment to practicing safer sex behaviours such as condom negotiation, consistently using of condoms, maintaining one sexual partner or practicing abstinence. Even though it is expected that people who label their behaviour as risky will make a decision to commit to safer sexual practices, it is important to emphasize that the decisions underlying a commitment to change can be quite complex.
3.4.3 Stage Three: Taking Action

Once committed to the task of reducing high-risk sexual behaviours, the ARRM posits that the individual will begin taking steps to achieve the goal of behaviour change. This final stage of the ARRM is hypothesized to be composed of three phases: (1) information-seeking; (2) obtaining remedies; and, (3) enacting solutions. During the information-seeking phase, individuals may begin gathering ideas and others’ opinions on ways to change high-risk sexual behaviours. Clearly, this process is influenced by both internal and external factors such as: (a) social networks and problem-solving choices (e.g. self-help, informal and formal help); (b) prior experiences with problems and solutions; (c) level of self-esteem; (d) resources requirements of acquiring help; and, (e) sexual partner’s beliefs and behaviours. In examining the importance of this stage in behaviour change, it is well noted that behaviour change may be more difficult to achieve relative to the goals of the earlier stages of the change process. People may be unable to achieve change because they are unsuccessful in eliciting needed information on how to solve their problems, are unable to obtain help with producing workable solutions, or lack the skills to incorporate solutions within their sexual relationships (Catania, 1990; Fishbein & Ajzen, 1975; Michie & Abraham, 2004). However, when individuals have positive prior experience to life solutions, they are more likely to implement actions that can lead to change. When young women have positive self-esteem or have the ability to communicate verbally with their sexual partner, they are better able to take actions that will lower their risk of HIV infection.

In summary, Catania (1990) emphasized factors that may facilitate or hinder an individual’s movement across the stages. In addition, Catania et al. (1991) suggested that other factors including aversive emotional state (e.g., high distress over HIV/AIDS), public education
campaigns, an image of a person dying from AIDS and informal support groups, are very much likely to influence an individual to examine and potentially change their sexual behaviour.

In describing the strengths of the ARRM model (1990), it is noted that the model stages are useful for suggesting important “markers” in the change process (Catania, 1990). It is evident that the model provides insight into the process of HIV risk reduction behaviour change and, more specifically, highlights how people move through the process of change and the factors that impact their decisions or actions across the stages (Catania et al., 1991; Fisher & Fisher, 2000). Generally, it is suggested that different intervention messages will have greater impacts on movement between stages at different stages of change. For instance, for individuals at stage one (i.e., labeling), interventions should focus on factors causing individuals to identify their behaviour as problematic (Catania, 1990). For individuals at stage two (i.e., commitment), interventions should focus on improving the perceived cost-benefit ratio of the desired change. For individuals at stage three (i.e., enactment), interventions should focus on where to get help with behaviour change and how to actually achieve it (Catania et al., 1991). Catania (1991) argued that, together, the three stages are neither unidirectional nor non-reversible. For instance, when a young woman finds great difficulty in altering her behaviour, she can re-label it as non-problematic or reduce her commitment to change. Additionally, the stages may not be invariant, as some individuals may not perceive their behaviour as problematic, but may come to change their activities because of the prodding of a highly motivated sexual partner.

Catania (1992) acknowledged that there are some factors that affect movement from stage to stage, which could be related to both internal and external factors such as emotional state and peer norms. Hence, this could also play a role in achieving a commitment to change by influencing self-efficacy. Catania (1992) argued that if one experiences a high level of distress
and other aversive emotional states such as anxiety and fear, this could perhaps increase the perceived seriousness of a problem and, over time, facilitates the continued labeling of one’s risk behaviour as problematic.

3.5 The Expanded AIDS Risk Reduction Model

In response to the above-mentioned precepts, the expanded ARRM also includes variables selected outside of the original ARRM. The following are the selected constructs and variables: assertiveness and self-esteem [psychological], resiliency [interpersonal], and childhood sexual experiences, egalitarian gender roles, spirituality, cultural mistrust and Africentrism [socio-cultural] in the current study. In simple terms, the overall purpose of the present dissertation is to comprehensively identify the factors related to risk at each stage of the ARRM model-- that is, Stage One or Labeling Stage [HIV/AIDS Knowledge, Peer Norms, Perceived Susceptibility, and HIV/AIDS Risk Behaviour Assessment], Stage Two or Commitment Stage [HIV Testing and Condom Use Self-efficacy], and Stage Three or Enactment Stage [Condom Use Self-efficacy, Sexual Behaviour, Perception of Enjoyment, and Sexual Communication] (see Table 2 and Figure 2). The present study could facilitate our understanding of whether or not the ARRM requires modification.
Figure 2

Expanded\textsuperscript{11} conceptualized A\textsc{rr}m model and the study variables at different stages\textsuperscript{12} (Refer table 1 for list of independent and dependent variables).

\textsuperscript{11} Note of impetus: The variables in the Expanded A\textsc{rr}m were selected by the undersigned in consultation with her steering committee, advisor, literature review and pilot study outcome. The Expanded A\textsc{rr}m is primarily made up of selected sociocultural variables that were introduced in this study for the reason that the original A\textsc{rr}m lacks these sociocultural factors.

\textsuperscript{12} Arrows across stages and variables suggest variable interaction.
Table 2

*Movement of behavior change across each stage in the present study*\(^{13}\)

<table>
<thead>
<tr>
<th></th>
<th>Stage 1</th>
<th>Stage 2</th>
<th>Stage 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIV Knowledge</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Do you have any plans to be retested in the next 6 months? 1=Yes, 2=No, 3=Not Sure)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Condom Use Self-Efficacy Information</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\(^{13}\)The table represents the cumulative progression across stages.
3.6 Intersectionality

One of the most complex problems related to HIV prevention is the continuous influence of socio-cultural factors and gender norm (Njiro, 2005; Preston-Whyte, et al 2000). s. The question is how does gender and culture affect the sexual behaviour of young women in Ghana? Preston-Whyte (2000, p. 256) stated that “discourses around HIV/AIDS in Africa are permeated with reference to culture or cultural practices”, which are arguably uncritically assumed in earlier medical literature to be essentially static and the primary cause of HIV vulnerability in African women. Preston-Whyte et al, (2000) added that although culture in the form of tradition may serve to justify and entrench long-standing power and gender inequalities leaving African young women more vulnerable to HIV/AIDS, it is essential to explore how Africans themselves have sometimes used culture to prevent the spread of HIV/AIDS (Preston-Whyte, et al 2000).. While acknowledging the important role of culture and gender in HIV infection in Africa, the author also added that it is important to understand that the complexities and discourses of HIV infection among African women go well beyond simplistic, undifferentiated and moncausal models of culture and traditions. As well, Njiro (2005) argued that unequal social relationships in any society put women in more vulnerable situations. Njiro attested that most women in traditional African societies depend on men for economic support, which invariably puts them at risk for HIV infection (Njiro, 2005). The author also argued that historical and colonial racism caused unstable social relationships, particularly in racist, capitalist African countries where African men were degraded and reduced to being underpaid and undervalued laborers (Njiro, 2005). Women reportedly handled most of the uneconomically productive work that the men refused to do. Both colonial practices and traditional structures put African women at greater risk of HIV infection (Njiro, 2005; Preston-Whyte, et al 2000).
In discussing the intersectional approach of ARRM, it is important to also examine the intersectional systems of the Ghanaian society (namely, gender inequalities, culture, and HIV/AIDS) given that the praxis of intersections between forms or systems of oppression, domination or discrimination is more easily appreciated if the lives of young Ghanaian women are viewed through the lenses of traditional cultural roles and societal norms. According to Bredström (2006), gender constitutes a crucial factor for understanding HIV/AIDS infection among women in Ghana. As such, different social roles and societal expectations affect the ability of young Ghanaian women to protect themselves from HIV. Thus gender inequalities between men and women impact young Ghanaian women’s vulnerability to disease. Aryee (2011) also argued that the gendered aspects of HIV/AIDS do not only apply to the daily challenges of women living with HIV/AIDS, but are perhaps more critical in the decisions surrounding safer sex negotiation and condom use among both sexually active and sexually inactive young women. She indicated that the lack of proper condom use and inability to negotiate safer sex can accelerate HIV infection in young Ghanaian women.

The literature also shows that psychologists have long studied various types of social issues such as gender, race, and HIV. However, few psychologists have espoused an intersectional approach to the discourse pertaining to HIV prevention issues in young African women (Aryee, 2011; Karim, 1998). According to Johnson and Sigler (1997), the gender inequalities or power imbalance that occur at the societal level are reproduced at the interpersonal level in the form of violence against women. Tenkorang, Adjei, and Gyimah (2010) and Gyimah, Takyi, and Addai (2006) added that gender and cultural practices including spirituality and religiosity have a substantial influence on the lives of young Ghanaian women. Feminist theory also explains that violence against women, including gender inequality, is a
behaviour that is socially and culturally learned and men who experience violence are likely to become abusive to women, particularly in a patriarchal society. While this might be true, social learning theory, on the other hand, mentions that social inequality is more or less focused on the interpersonal interactions between men and women.

The introductory section of this thesis examines the nature of culture and gender in relation to HIV. With this in mind, it is important to reiterate that socio-cultural and gender issues influence the sexual behaviour of young Ghanaian women and to recognize that resistance to behaviour change may not only be attributed to individual factors but also socially accepted gender roles and other patriarchal and non-egalitarian cultural factors. On the whole, it is important to note that to understand the influence of social, gender, and cultural tenets on HIV infection in Ghana, as well as the interactions between them, one must attend to issues of intersectionality because this will allow researchers to enhance the psychosocial and cultural validity of psychological studies (Aryee, 2011; Bredström, 2006; Wane, 2012).

In summary, it can be acknowledged that behaviour change theories including the ARRM have focused on individual level factors without addressing the gender-based inequalities and cultural norms embedded in the community. In this regard, the expanded ARRM seems to be more appropriate and could have a stronger impact on human behaviour. As such it can be used to address the growing challenges related to HIV prevention among young Ghanaian women. Understanding the psychological, cultural, and social contributing factors, as well as incorporating strategies that will enhance sexual decision-making and safer sex practices is critical in the present study. For a better understanding on the relevance of the ARRM in the current study, several studies on the ARRM were reviewed to give the reader further contextual
understanding of the model. The following sections provide a detailed discussion of the studies reviewed.

### 3.7 Application of ARRM to Sexual Risk Behaviour

In an attempt to understand the relevance and applicability of ARRM, a few researchers examined the ARRM among diverse populations including youth, heterosexual adults, drug users, and people living with HIV/AIDS. Catania, Coates, Kegeles, Peterson, Marin, and Fullilove (1990) used survey data from 1,781 unmarried participants from a multi-ethnic high-risk neighbourhood. Participants were between ages 20 and 44, 83% heterosexual, 13% homosexual, and 4% bisexual. Further, the study participants were 41% white, 26% black, 25% Hispanic, and 8% other. The aim of the study was to test Stage 1 and Stage 3 of the ARRM model. Stage 1 analyses examined predictors of labeling one’s sexual behaviour in terms of HIV risk, while Stage 3 concerned predictors of sexual behaviour (e.g., condom use). The researchers did not assess Stage 2 in their study because they did not find a difference in the stage 2 and 3 variables. With multiple regression analyses, results from the comprehensive data suggested that accurate labeling of high risk behaviour is related to high susceptibility beliefs, but unrelated to knowing someone with AIDS. From the same data, it was noted that Hispanics, compared to whites, were more likely to accurately label their behaviour. Nevertheless, the data failed to report on the specific findings of Black respondents in the study. This could be due to the researcher’s inaccurate understanding of the vulnerability and susceptibility to HIV/AIDS in Black people including complex socio-cultural and economic challenges, HIV related stigma and lack of access to support services among Black communities (Gardezi et al., 2008; Husbands et al., 2009). The study also revealed that greater condom use during vaginal or anal intercourse is
significantly related to better sexual communication skills, higher perceived benefits and lower costs of condom use, but unrelated to religiosity, self-efficacy, and ethnicity. Together, the latter results were found to essentially be the same for men and women, and for heterosexuals and gay men. Overall, the study underscores the importance of interventions that enhance communication skills and teach methods of facilitating sexual efficacy and consistent use of condoms.

In another study, Catania, Kegeles, and Coates (1990) examined the ARRM’s specific stages among unmarried heterosexual adult Americans, and reportedly, labeling one’s sexual behaviour as risky was associated with having a history of sexually transmitted diseases including genital herpes. In discussing risk behaviour across the three stages, Catania, Kegeles, and Coates (1990) noted that among people with secondary sexual partners, greater condom commitment was related to increase in labeling, supportive condom norms, and greater enjoyment. Consequently, a high level of condom use was related to greater condom commitment, supportive norms, greater enjoyment, and health protective sexual communication. It was also noted that among people with primary partners, greater condom commitment was correlated with increased supportive condom norms, greater enjoyment, and having genital herpes. On the whole, the study revealed that high levels of condom use were correlated with greater condom commitment, greater enjoyment, and health protective sexual communication (Catania, Kegeles, & Coates, 1990).

Similarly, in Los Angeles, a sample of 161 drug users (IDUs) participated in a study examining the psychosocial factors involved in adopting safer sex practices for respondents who reported having more than one sex partner in the year preceding the study (Kowalewski, Longshore, & Anglin, 1994). The study tested the first two stages of the model using a measure of perceived risk of HIV infection (for Stage 1) and intentions to use condoms constantly during
vaginal or anal sex in the next year (for Stage 2). The study also examined differences in the predictive value of the ARRM between IDUs who reported using condoms in the year prior to the study and those who reported not using them. Results identified leverage points in the model factors, which appeared to have a major influence on intentions to use condoms. For both condom users and non-users, it was evident that susceptibility to AIDS predicted perceived infection risk (Stage 1). For condom users only, the study also reported that knowledge about AIDS predicted perceived risk. Overall, both groups of participants mentioned that self-efficacy, peer norms concerning condom use, and the perceived pleasure of using condoms predicted intentions to use condoms (Stage 2). In summary, in interpreting the results in relation to the ARRM, findings garnered did not support either direct or indirect relationships between the Stage 1 and Stage 2 outcome variables for either group in the research.

Data from Alroy’s (1998) study on the impact of psycho-attitudinal variables (i.e., powerlessness, demoralization, and meaninglessness) on the efficacy ability of the ARRM to predict condom use among 286 college students indicated that 75% of the participants (students) were sexually active and reported condom use at last sexual intercourse. Reportedly, only one out of the four ARRM variables, commitment to condom use, was significantly correlated with condom use. In terms of gender differences, the data showed that men were significantly more likely than women to report the use of condoms at last sexual intercourse (64% for men and 45% for women). Additionally, the data suggested that women were significantly more likely than men to report withdrawal as contraception at last intercourse (43% for women and 29% for men). Similar findings report that females were more likely to report positive attitudes and health protective sexual communication. Again, women were significantly more likely to report the belief that they could do something if their sexual partner did not want to use condoms.
However, no significant relationships were found between each of the three psycho-attitudinal variables and condom use.

Malow and Ireland (1996), in studying the psychosocial correlates of risk among 111 heterosexual, non-injection, cocaine-dependent men in treatment, also found that having a higher number of sexual partners was associated with greater perceived susceptibility of contracting HIV, lower sexual self-efficacy, higher lifetime incidence of sexually transmitted diseases, and using alcohol or drugs during sex. Longshore, Anglin, and Hsieh (1997) also found that intentions to share injection needles were less often associated with perceived risk of HIV infection which, in turn, was predicted by participants’ knowledge of HIV transmission, perceived susceptibility to HIV, and perceived peer norms.

Furthermore, Kowalewski, Longshore, and Anglin (1994) examined ARRM stage-specific predictors of intentions to use condoms in a sample of 161 injection drug users. Findings of the study suggested that labeling oneself as at risk for HIV infection (ARRM Stage 1) was predicted by knowledge about HIV for condom users. In addition, commitment to change behaviour (ARRM Stage 2) was predicted by self-efficacy, peer norms regarding condom use, and the perceived pleasure associated with condom use.

The literature on the ARRM is again highlighted by Kline and Van Landingham (1994), who examined the use of condoms with primary partners among 214 HIV-positive women. They noted that partner-related factors were most important in predicting consistent condom use. That is, participants who had high perceived power to influence their partner’s condom use, had partners who were HIV-negative and were more likely to use condoms consistently. Two other studies (Aspinwall et al., 1991; Dolezal et al., 1997) also reported that the factors such as fear or anxiety and social norms could influence movement between the ARRM stages. In conclusion, it
is evident that social norms along with psychological factors such as fear and anxiety play a role in how women negotiate for safer sex practices.

Similarly, Gillis, Meyer-Bahlburg, Exner, and Ehrhardt (1998) examined 74 HIV positive and 45 HIV negative gay and bisexual men from New York City. Reportedly, participants in the study were predominantly white (94%), approaching their fourth decade of life (M = 39.8 years), single and never married (84.6%), middle-class (mean of 50.0 on the Hollingshead Two Factor Index; Hollingshead, 1957), and well-educated (M = 16.3 years). Findings from the study revealed no significant demographic differences between HIV+ and HIV- participants. Also, it was reported that predictors of the labeling stage were not significant. However, the overall regression for the expanded model of labeling stage was significant. The commitment stage indicator was operationalized as behavioural intentions to a) use condoms during anal sex, b) be monogamous, and c) be sexually abstinent. The hypothesized predictors of the commitment stage were also not significant. However, in spite of the discouraging results, the study supported the expansion of ARRM to include additional variables such as previous level of sexual risk behaviour.

A recent longitudinal study by Champion and Collins (2012) on the effect of ARRM versus enhanced counselling among Mexican-Americans (n=342) and African-Americans (n=67) showed that participants who received intervention experienced fewer infections. Although the study is not clear on how intervention strategies impacted change across the three stages, the data generally supported the use of ARRM as an evidence-based interventions approach for sexually transmitted infection/HIV.

In another sample of 982 heterosexual men from Switzerland (Parpan-Blaser et al., 2004), it was revealed that a significant positive correlation exists between the enactment and
commitment stages. It was also highlighted that the predictor variable not only influenced labeling but also had a direct influence on both commitment and enactment. Like most of the above-reviewed studies, when the model was comprehensively tested, no significant correlation between labeling and commitment was established. This finding could indicate participants may label their behaviour but may not progress to the next stage of the model. In discussing participants who did not belong to any of the ARRM categories, the researchers stated that participants who were convinced that they do not belong to any of the ARRM categories of those at risk rejected HIV/AIDS as an issue altogether, which to some extent led to a lack of concern about their unprotected sexual encounters. A closer examination of each of the three levels showed that there is a significant effect on only one or two predictor variables per level, that is, stereotyped health convictions (labeling level), self-efficacy expectation (commitment level), perceived readiness of the partner to use condoms and degree of amorousness (enactment level).

Although predicting the relationship of risk behaviours across all three stages is deemed a crucial component of the ARRM, information on this is somewhat limited. Clearly, there is some indication that the model was not entirely successful at providing a suitable explanation. Therefore, with a sample that has not been studied extensively using the ARRM, the present study might provide more insight into how the ARRM can be used more effectively with diverse groups and future research.

Likewise, a three-year longitudinal quasi-experimental study using participatory action research (Morisky et al., 2004) was conducted to determine the feasibility and efficiency of an expanded sexually transmitted infection (STI) HIV/AIDS prevention program, based on the ARRM, among a diverse, high risk male heterosexual populations in the southern Philippines. A total of 3,389 participants (200 males from each of 18 study groups) were recruited, and 221
were trained as peer counselors to develop educational materials and to reinforce safe sex practices among their peers. It was reported that condom usage, attitudes towards condoms, and knowledge about HIV/STI transmission increased significantly from the baseline to post-test and the 6-month follow up, respectively. In addition, there was an indication that STI incidence decreased significantly and changes differed significantly between the intervention and control group at post-test and follow-up. Generally, the findings illustrate the appropriateness of using ARRM in promoting and sustaining positive behaviour change.

In terms of studies from Ghana, Riley and Baah-Odoom (2010) tested the ARRM in relation to the factors (i.e., stigmatizing, blaming, and stereotyping attitudes) that make people feel less at risk of contracting HIV/AIDS and thus take fewer precautions in their sexual behaviour. The study involved a sample of 460 young people from Ghana, ranging in age from 15 to 28 years residing in Accra. The findings of the study supported the claims in relation to stigma and sexual risk behaviour. While the latter two were reportedly correlated, the relationship was not mediated by reduced perceptions of vulnerability. On the contrary, claims in relation to blaming and stereotyping were not supported. Furthermore, it was reported that specific blaming and stereotyping attitudes that constructed HIV/AIDS as a sexual disease were associated with safer intended sexual behaviour, and this relationship was mediated by feeling at greater risk. In summary, the researchers highlighted that stereotyping, blaming, and stigma will lead to a reduced sense of threat to safety sexual behaviours. However, they cautioned that though findings on the ARRM are fairly convincing, no study has provided evidence in support of all three stages. Hence, the current study will look further into the three stages with Ghanaian young women.
In other parts of Africa, including Uganda, McGrath et al. (1993) utilized the ARRM principles on 130 Baganda women with a mean age of 21 years (range 15-30; 65 HIV antibody positive and 65 HIV antibody negative). Participants were recruited from follow-up clinics in Kampala, Uganda. The women in the study were interviewed about cultural rules and norms for sexual behaviour and HIV-specific risk behaviours. The study found that in spite of the sexual norms that prohibited sex for women outside of marriage, there are certain circumstances in which a woman may take other partners -- when there is economic need, a desire for greater sexual satisfaction, or a desire for revenge on a husband with other partners. In general, it was noted that women were more likely to have outside partners for economic reasons than for sexual satisfaction. It was also noted that although women reportedly had a fear of contracting HIV/AIDS, they were concerned that their partners had not responded to risk reduction messages. Hence, participants felt that they remained at risk of infection despite their own behaviour change. In summary, the researchers concluded that while the potential for risk reduction is high for women, cultural norms permitting males to have multiple partners limit a woman’s ability to control her risk reduction. They argued that a focus on women’s behaviour alone is not sufficient as both partners must respond to risk reduction messages. Also, knowledge about AIDS is not sufficient to achieve change in sexual behaviour because sexual behaviour is linked to economics, gender relations, and other complex socio-cultural factors (McGrath et al., 1993).

In addition, two studies (Bertrand et al., 1992 & Schoepf, 1993) involving 494 urban and rural women in the Democratic Republic of Congo (formerly Zaire) examined factors that motivate behaviour change. It was reported that difficulty labeling one’s behaviour as problematic was related to difficulty addressing HIV/AIDS-related sexual decision-making and
behaviour. Furthermore, the utility of the ARRM was used to identify variables predicting
behaviour change in women in Kigali, Rwanda (as cited by Vallaey, 2002), and to examine
condom use in a sample of 215 HIV infected women. Like the previous study, women label their
behaviour as problematic. However, initiating safer sex practices was influenced by cultural and
socio-economic factors.

Finally, an Indian (Moon, 2002; Schneider, Dandona, Pasupneti, Lakshmi, Liao, Yeldandi, & Mayer, 2010) study on the applicability of the ARRM was reviewed. The study included truck drivers (males aged 15-46) and rural-based commercial sex workers (ages 25-42) who were both in the first stage of behaviour change -- that is, recognition of a risk behaviour problem. Reportedly, the failure to perceive HIV as a personal risk kept the truck drivers and commercial sex workers from moving to the second stage of commitment to behaviour change. Nevertheless, it was noted that both groups took action to change their behaviour (stage three) through condom use and STD treatment. Generally, the researchers concluded that the reduction of risk behaviour is improved when sexual partners recognize the sexual problem, make a commitment to change, and communicate effectively with each other.

In conclusion, it is apparent that HIV knowledge and the awareness of HIV risk factors affect decisions surrounding sexual behaviours in young women. It is also evident that people who perceive their behaviour to be risky engage in safer sex practices such as consistent condom use or negotiate for safer sex practices. Clearly, there is little exploration of change across the three stages of the ARRM and whether or not people actually progress from one stage to the next. Undoubtedly, individual factors or predictors affect the three stages independently, possibly because of individual, interpersonal, and societal factors. The evidence also highlights that low perception of personal risk acts as a barrier to condom use, perhaps as an extension of the issues
related to HIV knowledge and cultural issues. Other barriers include structural factors (for example, marital status and complicated sexual relationships), differences in cultural norms, and the impact of power in relationships. Even so, these cultural, structural, and individual barriers are often connected with poor sexual practices and decision-making. It is apparent that adequate information on HIV and risk factors could overcome barriers associated with safe sex practices and HIV infection (see Table 3 for outline of studies).

Table 3
The table below represents a synthesis of the reviewed studies of the ARRM at a glance.

<table>
<thead>
<tr>
<th>Article and Author</th>
<th>Objective/Type of Measures/Stages of ARRM/Methods</th>
<th>Listing Relevant Variables and/or Factors at the ARRM 3 Stages</th>
<th>Findings by Stages Methodological issues and Limitations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Catania, Coates, Kegeles, Peterson, Marin, &amp; Fullilove, (1990). Predicting risk behaviour with the AIDS Risk Reduction Model (ARRM) in a random household probability sample of San Franciscans: the “AMEN” study. University of California San Francisco, Center for AIDS Prevention Studies (CAPS), San Francisco, California,</td>
<td>To test Stages 1 &amp; 3 of ARRM. Stage 1 analyses examine predictors of labeling one’s sexual behaviour in terms of HIV risk; Stage 3 concerns predictors of sexual behaviour (e.g., condom use) Data was collected in a random household probability study of 1,781 white (41%), black (26%), Hispanic (25%), and other (8%) unmarried respondents, aged 20-44, residing in selected “high risk”</td>
<td>Stage 1: (Labeling)-Sexual behaviour in terms of HIV risk Stage 3: (Enactment)-Predictors of sexual behaviour (e.g., condom use)</td>
<td>Findings suggest that accurate labeling of high-risk behaviour is related to high susceptibility beliefs, but unrelated to knowing someone with AIDS, having a gay relative or being a heterosexual man. It was also evident that Hispanics, compared to whites, were more likely to accurately label their behaviour. Also, greater condom use during vaginal or anal intercourse is significantly related to better sexual communication skills, higher perceived benefits, and lower costs of condom use.</td>
</tr>
<tr>
<td>USA</td>
<td>census tracts of San Francisco (Heterosexual = 83%, homosexual = 13%, bisexual = 4%)</td>
<td>Multiple regression was used for the analyses.</td>
<td>use, but unrelated to religiosity, self-efficacy, and ethnicity. These latter results are substantially the same for men and women, and heterosexual and gay men. Stage 2 was not assessed in the study. Overall, the study suggests that the ARRM model is applicable to most social groups.</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td><strong>Parpan-Blaser, Niderost, Gredig, &amp;Deringer, (2004).</strong></td>
<td>The aim of the study is to test ARRM empirically in a sample of 982 heterosexual men from Switzerland between ages 25 and 65. Participants were surveyed in two waves of standardized, computer-aided telephone interviews at a six months’ interval. The data was analyzed by means of multi-variant analysis models.</td>
<td>Examination of each of the three levels--variables per level: Stage 1:-Stereotyped health convictions (labelling level), Stage 2: Self efficacy expectation (commitment level), Stage 3: Perceived readiness of the partner to condom use and degree of amourousness (enactment level)</td>
<td>A positive significant correlation is shown to exist between enactment and commitment. In putting the model to the test, no correlation between labeling and commitment was established. Upon closer examination of each of the three levels, there is a significant effect on only one or two predictor variables per level: stereotyped health convictions (labeling level), self-efficacy expectation (commitment level), perceived readiness of the partner to use condoms, and degree of amorousness (enactment level). However, the independence of the individual levels’ predicator variables was not shown. In</td>
</tr>
</tbody>
</table>
In conclusion, it was reported that the ARRM failed to provide a suitable explanation model for HIV protection behaviour.

| Kowalewski, Longshore, & Anglin, (1994). The AIDS Risk Reduction Model: Examining Intentions to Use Condoms Among Injection Drug Users. | The study used ARRM to examine psychosocial factors involved in adopting safer sex practices in a sample of Los Angeles injection drug users (IDUs; n = 161) who reported having more than one sex partner in the year preceding the interview. The researchers tested the first two stages of the model. Specifically, they examined differences in the predictive value of the ARRM between IDUs who reported using condoms in the year prior to the interview and those who reported not using them. | Stage 1: Measure of perceived risk of HIV infection. Stage 2: Intentions to always use condoms during vaginal or anal sex in the next year. The study identified leverage points in the model factors, which appeared to have a major influence on intentions to use condoms and which may be amenable to change through educational or other types of intervention. For both condom users and non-users, susceptibility to AIDS predicted perceived infection risk (Stage 1). For condom users, knowledge about AIDS also predicted perceived risk. For both groups, self-efficacy, peer norms concerning condom use, and the perceived pleasure of using condoms predicted intentions to use condoms (Stage 2). Overall, the findings did not support either direct or indirect relationships between the Stage 1 and Stage 2 outcome variables for either group. |

Predictors of condom use among college students: Interpersonal, attitudinal and psychosocial characteristics

This study proposed that attitudes toward condoms would increase the efficacy of the ARRM to predict condom use among college students. It also explored the extent to which predictors of condom use are consistent for both males and females. Specifically, the two research questions investigated were: (1) Does the ARRM predict condom use among college students? and (2) To what degree does attitudes toward condoms (a variable supported by research) contribute to this model?

Stage 1: Psychoattitudinal variables, perceived powerlessness, demoralization and meaninglessness

Stage 2: Commitment to condom use,

Stage 3: Health protective sexual communication

Reportedly, 75% (n = 286) of the students in the study were sexually active, and significantly more men than women reported condom use at last sexual intercourse. Only one out of the four ARRM variables, commitment to condom use, was significantly correlated with condom use.

Gender differences were also found and reportedly men were significantly more likely than women to report the use of condoms at last sexual intercourse while women were significantly more likely than men to report withdrawal as contraception at last intercourse. Similarly, females were more likely to report positive attitudes, and health protective sexual communication. Additionally, women were significantly more likely to report the belief that they could do something if their sexual partner did not want to use condoms. Given disputes over condom use, females (50%, n = 20) were not more likely to have unprotected sex than males (70%, n = 14).
Overall, no significant relationships were found between each of the three psycho-attitudinal variables—powerlessness, demoralization, and meaninglessness—with condom use. Also, contrary to expectations, demoralization was inversely associated with health protective sexual communication.

| Gillis, Meyer-Bahlburg, Exner, & Ehrhardt, (1998) | The purpose of the study was to conduct a comprehensive evaluation of the predictive ability of the ARRM and to determine the extent to which proposed stage-specific predictor variables are related to ARRM stages. | Stage 1: My sexual behaviour is putting me at risk for HIV infection or re-infection (1 item).  
Stage 2: sexual risk behaviour index  
Stage 3: Sexual risk behaviour  
Expanded ARRM model: --Previous sexual risk behaviour, the personality disposition of sensation-seeking, sex guilt, perceived threat of AIDS, barriers to the performance of safer sex, and difficulties with safer sex performance. | Findings from the study revealed that predictors on the labeling stage were not significant; however, the overall regression for the expanded model of labeling stage was significant. The predictors on the commitment stage were also not significant. Nonetheless, in spite of the discouraging results, the study supported the expansion of ARRM to include additional variables such as previous level of sexual risk behaviour. |
| Champion and Collins (2012). | To evaluate the effects of ARRM versus enhanced counselling for abused ethnic minority adolescent women on infection with sexually transmitted infection at 6 and 12 months follow-up. 409 Mexican-American (n=342) and African-American (n=67) American adolescent women with histories of abuse and sexually transmitted infection were enrolled; 90% intervention group attendance; longitudinal follow-up at 6 (93%) and 12 (94%) months. Controlled randomized trial with longitudinal follow-up. | Extensive preliminary study for intervention development was conducted including individual interviews, focus groups, secondary data analysis, pre-testing and feasibility testing for modification of an evidence-based intervention prior to testing in the randomized controlled trial. Following informed consents for participation in the trial, detailed interviews concerning demographics, abuse history, sexual risk behavior, sexual health and physical exams were obtained. Randomization into either control or intervention groups was conducted. Intervention participants received workshop, support group and individual counseling sessions. Control participants received abuse and enhanced clinical counseling. Follow-up including detailed | Reportedly, intervention (n=199) versus control (n=210) group participants experienced fewer infections at lower-upper, monthly intervals. Overall, a cognitive behavioural intervention specifically designed for ethnic minority adolescent women with a history of abuse and sexually transmitted infection was effective for prevention of infection. |
In summary, the above table reflects on the usefulness of ARRM across countries. It also shows the flexibility of the ARRM in relation to how a stage specific variable is explored among a specific target population. The data also summarizes the research design and analyses applicable to ARRM, providing a backdrop for the present research design and analyses.
Chapter Four
Methodology

4.0 Introduction

The chapter presents the methods and design of the study, including description of sampling and participants recruitment procedure(s), description of survey instruments/measure (questionnaire), and data collection procedures as well as an overview of the institutional research ethics approval process. Statistical techniques employed in analyzing the quantitative data are also described. To reiterate, this research sought to assess the extent to which proposed stage-specific predictor variables are related to the three ARRM stages in young Ghanaian women.

4.1 Operational Definitions/Definition of Terms

1. Throughout this dissertation, multiple terms were used, including young Ghanaian women, which refers to young women of Ghanaian descent who are living in Accra, Ghana and are between 16 and 29 years of age. The term young Ghanaian women is used throughout this dissertation to refer to the study population. The term was used in accordance with Erikson's (1968) notions of adolescence (ages 12-18) and young adulthood (ages 19-29) as stages of psychosocial development, as well as the WHO (2005) definition of young adult population.

2. Age is defined as the number of years a person has lived, reported on the demographic questionnaire by the participant. In the present study, the term “younger” refers to participants aged 16 to 19 while the term older refers to participants aged 20 to 29.

3. High-risk behaviour is defined as engaging in unprotected sex without condoms, serial monogamy, and the use of contaminated objects (e.g., needles).
4. Marital status is defined by the participants’ description of never married, married, divorced, widowed, or cohabitating as reported on the demographic questionnaire.

5. Geographic location is defined as where the participants currently reside-- Accra, Ghana as reported on the demographic questionnaire.

6. Educational attainment is defined by participants’ response to a question from the demographic questionnaire asking participants to report on their highest level of education from the choices of (1) did not complete high school, JSS/SSS; (2) completed high school, JSS/SSS; (3) two-year college degree; (4) 4-year college degree, university (first degree); and (5) post-graduate or professional degree (following completion of first degree). The first two categories were grouped into high school, while the latter were grouped into a post-secondary category.

7. Financial status is defined by participants’ response to an item on the demographic questionnaire asking them to report their family’s annual gross income (last year) from the choices of (1) less than $10,000-$15,000; (2) $15,000-$20,000; (3) $20,000-$30,000; and (4) $30,000 and more.\(^{14}\)

8. Religiosity is defined by church role significance and belief in traditional religion, ancestors, or Islam based on the participants’ response to two items on the demographic questionnaire.

9. HIV/AIDS status is defined by the participants’ endorsement of HIV positive or negative status.

10. An HIV/AIDS orphan is defined by the participants’ indication that their parent(s) died from HIV/AIDS.

\(^{14}\) The rate of the US dollar to the Ghanaian Cedis is $1=2Ghana Cedis.
4.2 Research Design

4.2.1 Quantitative and Self-Administered Survey

A quantitative exploratory survey method was used for the current study for the reason that quantitative research can produce quantifiable, reliable data that may be generalized to a larger population. Specific to HIV or behavioural health studies, quantitative enquiry allows researchers to test specific hypotheses for more definitive quantification of a problem and extrapolation to a larger population (Tashakkori & Teddlie, 2003; Field, 2009). Given that the study involves the collection and analyses of numerical data gathered from psychometrically standardized measures, a quantitative design was considered to be the most appropriate. Furthermore, due to the fairly large sample size (N=200) of respondents in the current study, a survey method was selected as this approach to data collection is self-administered and relatively inexpensive. More importantly, a survey approach is suitable to garnering data or information that is needed to test the statistical significance of the multiple variables in the present study (Kenny, Nolen, AppleWhite, Pan, Shamblen & Vanderhoff, 2009). It is worth mentioning that although the present study was primarily quantitative, a few of the measures provided open-ended questions that corroborated a thematic analysis of written responses from participants.15

4.2.2 Convenience Sampling Method

The present study utilized the convenience sampling method -- a non-probability sampling technique that selects research participants (N=200) based on their accessibility and proximity. Studies involving vulnerable populations tend to use a convenience sampling method

---

15A few of the measures included open-ended questions that provided an opportunity for thematic analysis of participants’ written responses. Given this outcome, a grounded theory approach was used to analyze the thematic findings. Results are provided in chapter six.
because recruiting individuals from a vulnerable population using probability sampling techniques (e.g. random sampling and stratified sampling) can be challenging and somewhat difficult to attain (Aryee, 2011; Bortot, Risser & Cromwell, 2006). This sampling technique was also employed to increase the chances of finding enough young Ghanaian females who met the study inclusion criteria (i.e. individuals were eligible for participation in the study if they were young Ghanaian women in Accra between the ages of 16-29 years old and affiliated with one of three designated research locations). It was considered important to sample from a population that both faced a significant risk from HIV and that also viewed itself as belonging to mainstream Ghanaian society. Sampling from the secondary and tertiary education systems within Ghana seemed likely to meet these criteria (Anarfi, 2002). The study hypothesized that, within this young population, the frequency and extent of sexual risk behaviour would differ depending on the context and circumstances under which the young woman participates in any sexual activities, as well as whether or not they abstained from sexual activities. All in all, administering the survey to the entire population of 46,000 students (University of Ghana, Legon, with 30,000 students; Datus Complex School with 15,000 students; and, Planned Parenthood Association of Ghana (PPAG) School with 1000 students) would have been ideal; however, due to the large population size, it would be impossible to recruit the target sample (Anarfi, 2002; Dubois-Arber, Jeannin, Konings & Paccaud, 1997).

4.2.3 Community Advisory Committee (CAC)

The early stages of the partnership involved meeting and working around specific tasks, with a well-defined work plan and schedule of meetings. As part of the initial planning process, a community advisory group meeting was organized to clarify the purpose of the study and the
role of each stakeholder in the study. The stakeholders included a peer educator, a HIV youth facilitator from PPAG, two young Ghanaian women in Accra, and two representatives each from the (1) University of Ghana (Legon), (2) PPAG and (3) Datus Complex School. All stakeholders reviewed the goals of the research, problem definition, selection of measures, provided their input on the research procedures as well as the conceptualization of approach and goals. As per the international constraints of the study, ongoing telephone and email discussions were initiated to facilitate the relationship between the researcher and the stakeholders. Altogether, the researcher visited Ghana on two occasions and met with the stakeholders prior to the data collection.

4.2.4 Selection of Research Settings

In an attempt to increase the chances of testing the hypotheses of the present study with the ARRM, it was considered important to sample participants from diverse locations that represented mainstream Ghanaian society. In other words, the purpose of research is to test hypotheses, not find supporting evidence. The point of a large N is to allow for reasonable statistical analysis and/or generalizability. Given this information, two hundred (N=200) young Ghanaian women in the Greater Accra Region (GAR) of Ghana were selected through a convenience sampling method from the University of Ghana (tertiary), Datus Complex Secondary School and Planned Parenthood of Ghana Youth Center (out of school, in-school, & tertiary). These three settings were selected as they seemed likely to serve a varied population (including, age, educational level, economic status and marital status) of young Ghanaian females who were likely to be sexually active and at risk for HIV infection. Further, the selected
sites were willing to collaborate with the researcher to advance the understanding of perceived risk factors among young Ghanaian females.  

The following is a brief description of the three settings (institutions) selected for this study.

(1) University of Ghana, Legon

The University of Ghana, Legon, is the premier university in Ghana with a student population of approximately 30,000 including over 1,000 foreign students. The current male to female student ratio is approximately 2:1.5. The University was established in 1948 as the University College of the Gold Coast, with the aim of providing university learning and research. It is one of the most prestigious postsecondary institutions in Africa and well-recognized as a center of excellence all over the world. The University has trained more than 40,000 graduates who are at the helm of affairs in Ghana and many parts of the world. During the initial years, it enjoyed a special relationship with the University of London, which supervised its academic programmes and awarded University of London external degrees to successful students. In sum, this setting was selected for the reason that more than half of the University population are females enrolled in both graduate and postgraduate programmes (including social science, engineering, science, and law to mention a few (University of Ghana, 2012).

__________________________

16 Note on impetus for the study: The researcher had worked as a volunteer with these institutions in Ghana for some time and so she had maintained a decent community partnership with the research locations. Even so, the researcher remained objective and ethical throughout the study.
(2) The Planned Parenthood Association of Ghana (PPAG)

The PPAG Young and Wise Centre is a youth centre located in Accra. The Centre is primarily managed and utilized by young people. This Centre has youth volunteers and staff of varying ages and socioeconomic backgrounds who provide sexual and reproductive health services to youth in Accra. This setting was selected because more than 25% of their clientele are young Ghanaian women. Brief background information shows that PPAG was established in 1967 as a Non-governmental Organization (NGO) affiliated with the International Planned Parenthood Federation (IPPF). It is currently the leading NGO providing Sexual and Reproductive Health (SRH) services in Ghana. The Association works to complement the efforts of government in providing healthcare and development for the nation. In line with the National Population Policy and the National Youth Policy, the association has broadened its scope from a focus on family planning to covering other sexual and reproductive health needs and providing a diverse range of related services. On the average, approximately 200 young people visit the centre per month (PPAG, 2012).

(3) Datus Complex School

The Datus Day Junior and Senior Secondary School in Tema was established by Torgbui Kwaku Amenyodu I in 1962 to mitigate the social and academic needs of children who roamed aimlessly in the suburbs of Accra due to the limited availability of schools in Accra at that time. Similar to the two research settings, Datus was selected because the school supports and promotes the sexual health education of its students. The diverse background of the female students (including Junior High and Senior High students) also contributed to the selection of this school. Datus Complex School has four sister schools in the Greater Accra Region with a
population of approximately 15,000 students. Similarly, the male to female of students at Datus was about 2:1 (Datus Complex, 2012).

Together, because the collaborating partners (i.e. the three selected sites) engage in several informal and formal public health-related prevention initiatives within their institutions, they strongly supported the recruitment efforts for this research, which contributed to the local buy-in by participating young females and students.

4.3 Questionnaire—Selection and Design of Measures

Measures or questions were selected after conducting a thorough literature review and consultation with the dissertation committee and stakeholders (including female students and youth in Ghana). At the outset, there were a few concerns with regards to the ambiguities surrounding some of the questionnaire items (e.g., the Cultural Mistrust Questionnaire, Traditional Egalitarian Sex Role Scale, HIV/AIDS Risk-Behaviour Assessment Questionnaire and HIV Testing Information). Further, while the measures had good psychometric properties (i.e., strong reliability and validity level), it was also noted that nearly all the measures had been validated within a European and/or North American context with limited cross-cultural validation within milieus germane to Africa or Ghana.

To address these shortfalls, the limitations were clarified with the dissertation committee and stakeholders. Accordingly, the “etic and emic” approaches described by Godin et al., (2008) were utilized to develop a few items and additional measures. The “etic” component involves the use of clear theoretical constructs; whilst the “emic” component involves the use of qualitative

17 Measures were selected in conjunction with ARRM stage specific variables as well as the expanded ARRM. Refer to Table 4 for the reliability analyses of each measure.
methodology to gather information about how a particular theoretical construct manifests itself in a particular cultural context. These two approaches were used to generate items or measures that aim to be theoretically valid but also sensitive to the cultural context of Ghanaian females (Godin et al., 2008). For the “emic” component, a series of steering committee meetings and six brief focus groups (two at each setting) were conducted prior to the main study. Based on the outcomes of these consultations, meetings, discussions and processes, it was concluded that new items or measures needed to be constructed based on the tenets of the chosen conceptual framework (i.e., ARRM) and should be within a cultural context that was sensitive to young Ghanaian women (i.e., in relation to the expanded ARRM). Subsequently, a brief pilot test of the entire questionnaire (including both new items and measures) was completed prior to the actual/final data collection process. The average time taken to complete the questionnaires during the pilot test was approximately two hours. The survey questionnaire and consent forms were developed at the high school reading level.

The questionnaire package used in the present study contained measures assessing two main areas: (a) sociodemographic and other relevant general variables and (b) sexual risk behaviours. In total, nineteen measures were used in this study, including:

(1) Demographic Survey;
(2) HIV Knowledge Questionnaire;
(3) HIV/AIDS Risk-Behaviour Assessment Questionnaire;
(4) HIV Testing Information;
(5) Sexual Behaviour Questionnaire;
(6) Abstinence Assessment Question;
(7) The Health Belief Model- Perceived Susceptibility (HBMP);
(8) Safer Sex Self-Efficacy- Condom Use Self-Efficacy Scale;
(9) Peer Norms Scale;
(10) Catania’s Perceptions of Enjoyment Scale;
(11) Catania’s Dyadic Sexual Communication Scale;
(12) Sexual Assertive Behaviour Scale;
(13) Rosenberg Self-Esteem Scale;
(14) Resilience Scale;
(15) Spirituality Perspectives Scale;
(16) Africentrism Scale;
(17) Cultural Mistrust Questionnaire;
(18) Traditional Egalitarian Sex Role Scale;
(19) Social Health Battery Scale; and
(20) The Childhood Experiences Scale.

(1) **Demographic Survey-20-Item**

Twenty demographic variables (e.g., Date of birth/age, ethnicity, education level, marital status, family income level, living status, city of identity, and history of drug use) were chosen to collect the participants’ biographical information. Items were ordered from least to most sensitive. The first three items related to participants’ age, relationship status (e.g., married, single), and parental status, while items four through six prompted participants to provide information on their highest level of education, financial status, and to describe the geographic location of their residence and occupation. The last nine items covered questions relating to
religiosity, personal HIV status, awareness of a friend or family member with HIV/AIDS, and reasons for knowing about HIV/AIDS (refer to Appendix D for Questionnaire).

(2) The HIV Knowledge Questionnaire (HIV-KQ-19)

The HIV-KQ-19 is a 19 item true or false questionnaire that assesses HIV knowledge. The measure was adapted from similar measures designed by Carey, Morrison-Beedy and Johnson, (1997); Carey and Schroder (2002). The original HIV-KQ-45 (Carey, Morrison-Beedy & Johnson, 1997) consisted of 45 true or false items and the Brief HIV-KQ-18 also consisted of 18 true or false items (Carey & Schroder, 2002). Example of items included: (a) most people with the AIDS virus quickly show signs of being sick, and (b) you can get HIV from oral sex. Both measures (i.e. 45 & 18) were normed and validated on a diverse population including low-income men and women and African Americans. In the current study, one item (i.e. item 19) was added to the original 18 item—summing up to 19 items (refer to appendix D for details). Together, total scores on the revised HIV-KQ-19 are calculated by summing the values of the 19 items. Items were ordered in a manner that presented the most comfortable questions first. The overall score ranges from 19-38, with higher scores indicating higher levels of HIV knowledge. In analyzing and interpreting the measure, the number of correct scores was converted to percentage correct. Reliability analyses of the original HIV-KQ-45 indicated that it is internally consistent (alpha = .91) and (r = .91). In relation to the HIV-KQ-18, there a strong internal consistency and test-retest stability across samples (alpha=.75-.89) and several intervals (r=.76-.94)—this level of reliability indicates strong associations with the original HIV-KQ-45 (r=.93-.97). The HIV-KQ-AG-Adolescent version for girls (Volpe, Nelson, Kraus, & Morrison-Beedy, 2007), a 21-item modification of the HIV-KQ and HIV-KQ-Brief (Carey, Morrison-Beedy &
Johnson, 1997; Carey & Schroder, 2002, respectively), was also designed. The HIV-KQ-AG also demonstrated adequate internal consistency reliability (alpha=.75 and .88; Volpe et al., 2007, 2009). In the present study, the reliability analysis of the 19-item measure specific to young Ghanaian women indicated a Cronbach’s α of .60. Although .60 is a poor cronbach’s alpha, it can be argued that the HIV-KQ-18 is internally consistent, stable and suitable for use with young Ghanaian women.  

(3) The HIV/AIDS Risk-Behaviour Knowledge Questionnaire (ARBKQ-11)

The ARBKQ is an 11-item true or false questionnaire that assesses potential involvement in high-risk sexual behaviours by measuring respondents’ practical understanding of risk behaviour and risk reduction steps. The measure was developed by Kelly, Murphy, Bahr, Brasfield, Davis and Hauth (1992) to determine participants’ practical understanding of HIV, risk behaviour and risk reduction strategies. The original ARBKQ \(^{19}\) consisted of 40 true or false items and was normed and validated on a diverse population including young people of African descent. Items were ordered in a manner that presented the most comfortable questions first. Total scores on the revised ARBKQ-11 are calculated by summing the values of the 11 items. The overall score goes from 11 to 22, with higher scores indicating higher levels of perceived risk. Again, for ease of analyzing and interpreting the measure, the number of correct responses was converted to percentage correct. The ARBKQ is used in the current study because it was previously tested and shown to have good internal consistency reliability (alpha = .79) and (r = ___________)

\(^{18}\) Of note, we did not conduct an item analyses in the current study. These measure(s) were used with permission from the Center for Health and Behaviour, Syracuse University. mpcarey@syr.edu

\(^{19}\) In the present the study, the ARBAQ was omitted for the reason that we had adapted the HIV-KQ-19 and more importantly the ARBAQ is used for participants in high-risk situations. Permission was sought from the Department of Psychiatry, MRC Unit on Anxiety Disorders, University of Stellenbosch, South Africa.
In the present study, a reliability analysis indicated a Cronbach’s $\alpha$ of .70. Given this finding, it can be concluded that the ARBKQ is internally consistent, stable and suitable for use with young Ghanaian women.

(4) **HIV Testing Information (HIVTI-15)**

The HIVTI is a revised measure that was adapted from Catania’s (1990) measure on HIV testing. The current HIVTI is a 15-item measure examining the history of HIV testing. The items are scored on an ordinal scale (1= yes; 2= no; 3= not sure). The original HIVTI consisted of 30 items and was normed and validated with a gay population including African American gay men. For ease of interpreting the measure, the total number of correct items was summed to generate a total score for each participant and descriptive statistics were performed. Subsequently, scores were converted to percentages and reliability and t-tests were conducted to test the associations between individual items and number of correct responses. Items 7 and 15 were analyzed thematically because they prompted opened responses; as such, a total of 13 items were statistically analyzed for the purpose of the present research. Item 8 was used as a predictor at stage 2 in the current study. The rest of the items were reversed and average values are provided as mean (Refer to Table 4 for Mean and SD).\(^{20}\) Items were ordered in a manner that presented the most comfortable questions first. In the present study, the HIVTI-15 demonstrated somewhat poor reliability (Cronbach’s $\alpha = .42$); this finding could be due to measurement error, a limitation of self-report behaviour studies. The present study showed that respondents underreported their

---

Note on impetus for the analysis and interpretation: Items 7 and 15 were coded qualitative responses. Hence, the items were coded thematically and omitted from statistical descriptive, t-test and other analyses. Adapted and used with permission from Drs. Roy Gillis and Theresa Exner (1998).
HIV testing history and more importantly very few of them had formally tested their HIV status. The literature also provided inadequate data on the reliability and validity of the measure (Catania, et al. 1990; Andersen & Broffitt, 1988).

(5) **The Sexual Behaviour Questionnaire (SBQ-19)**

The SBQ is a 19-item measure adapted from Catania’s (1992) measure assessing the sexual behaviour of participants in the past 6 months. The SBQ contains both dichotomous and continuous variables. For example, on item one, participants are asked: Have you ever had any sexual experience with boys/men in the past 6 months (Yes or No). This item is followed by a categorical variable: Type of sexual experience: vaginal (1); anal (2) oral (3) and (4) kissing, to mention a few. Another continuous variable is item 17: How many of these times did you use a form of protection such as a condom? (1) Always (2) almost always, (3) almost never and (4) never. Similar to the above scoring, the total number of each correct item was summed for each participant and descriptive statistics were performed. Subsequently, scores were converted to percentages, and reliability t-tests were conducted. Item 9 was analyzed thematically for the reason that it was an open-ended question that required a written response. A total of 18 items were statistically analyzed for the purpose of the present research. The reliability analysis for the present study showed an excellent Cronbach’s α of .81. The literature or data on this measure appears to be limited in regard to its reliability and validity (as cited by Catania, et al. 1990; Andersen & Broffitt, 1988).

22 Adapted and used with permission from Drs. Roy Gillis and Theresa Exner (1998).
(6) The Abstinence Assessment Questionnaire (AAQ-9)

The AAQ-9 was adapted from the Sexual Abstinence Behaviour Scale (SABS-4; Norris, Clark, and Magnus, (2003) and Sexual Abstinence Behavior Skills Scale (SABSS-CAM; 1994, WHO). The current measure consists of 9 items to assess delay in sexual behaviour (including kissing, rubbing bodies, genital touching, and vaginal intercourse). The response options are dichotomous (1=yes, 2= no) and reversed to produce a total score ranging from 1 to 18. Correct responses are summed with higher scores indicating the practice of abstinence among participants. Scores for the SABS ranged from 4 to 20 and psychometric analysis supported SABS reliability (alpha =.73) in African American teens (Norris, Clark, & Magnus, 2003). It is also noted that the SABS scores are moderately correlated with perceived negative consequences of teen sex (r = 0.38) and sexual abstinence self-efficacy (r = 0.48). In view of the present study, the reliability analysis shows an acceptable Cronbach’s α.90. Given this finding, it can be concluded that the AAQ is internally consistent, stable and suitable for use with young Ghanaian women. 

(7) The Health Belief Model- Perceived Susceptibility (HBMP)

The HBMP (as cited by Norris, Clark, & Magnus, 2003) is a 7-item questionnaire for assessing the perceived susceptibility of an HIV infection among vulnerable people. For the purpose of this study, the last 3 items were dropped from the original scale because they appeared to be redundant, and replaced with 4 new items. The items were scored on a 4-point Likert scale (4=Agree; 3=Mildly agree; 2=Mildly disagree; 1= Disagree). Items 4, 6, and 7 are reverse-scored for consistency with the other items on the instrument. The scores for the
individual items were summed to produce a total score. A high overall score is indicative of higher perceived vulnerability to HIV infection, while lower scores suggest low perceived vulnerability to HIV infection. The HBMP is used in the current study because it was previously tested and shown to have good internal consistency reliability with Cronbach alpha coefficient of .72 for the perceived susceptibility construct. After the modification, the present data shows a weak Cronbach’s $\alpha$ of .63, suggesting that the HBMP is internally consistent, stable and suitable for use with young Ghanaian women.

(8) The Safer Sex Self-Efficacy Scale- Condom Use Self-Efficacy (SSSES-28)

The SSSES is a 28-item scale designed to assess participants’ confidence in the mechanics of condom use, partner approval or disapproval of condom use, ability to persuade a partner to use a condom, and ability to use condoms while under the influence of drugs or alcohol. Items on the SSSES are scored on a 5-point Likert scale (5=Strongly Agree; 4=Agree; 3= Undecided; 2= Disagree; 1= Strongly Disagree). The SSSES is used in the current study because it was previously tested and shown to have good reliability and validity (Cronbach’s alpha = 0.94; Davis et al., 1998). In the present study, a reliability analysis showed that the SSSES-28 is internally consistent, stable and suitable for use with young Ghanaian women with an excellent Cronbach’s $\alpha = .89$.  

Source from Davis et al., (1998).
(9) The Peer Norm Scale (PNS-7)

The PNS is a 7-item measure adapted from Catania’s (1992) original 20-item Peer Norm Scale. The measure assesses the impact of peer influence on decisions related to sexual activities. The items are scored on a 7-point Likert Scale (Likely=1 to Unlikely=7). Sample of items include: Most people who are important to me think I should use a condom every time I engage in sex (item 1); My close friends think it is important to practice abstinence (item 4); and, My close friends think it is important to have sex with one partner (item 6). The PNS items were ordered in a manner that presented the most comfortable questions first. Total scores were calculated by reverse-scoring items 1, 3, 4, 5, and 6 were reversed then summing the total number of correct responses. A high overall score indicates lower influence of peers on sexual decision-making. A reliability analysis demonstrated that the PNS-7 is internally consistent, stable and suitable for use with young Ghanaian women (Cronbach’s α = .76).

(10) Catania’s Perceptions of Enjoyment (CPE-2)

The CPE is a 2-item brief measure adapted from the original Catania’s Perception of Enjoyment scale (Catania, 1992). The measure assesses the level of sexual enjoyment of specific sexual activities. Questions for this measure include: How much do you enjoy or think you might enjoy doing the following sexual activities? Even if you have never done the behaviour, try to imagine how much you would enjoy it. (1a) Vaginal intercourse with condom and, (1b) Vaginal intercourse without condom. The CPE items were ordered in a manner that presented the most

27 Used with permission from Drs. Roy Gillis and Theresa Exner (1998).
comfortable questions first. The items are scored on a 6-point Likert scale (1= Dislike very much; 2=Dislike somewhat; 3=Dislike slightly; 4=Enjoy slightly; 5=Enjoy somewhat; 6=Enjoy very much). Higher scores suggest higher levels of perceived enjoyment, while lower suggest lower levels of perceived enjoyment of sexual activity. A reliability analysis demonstrated that the CPE-2 is internally poor Cronbach $\alpha$ .45 in the current study.29

(11) The Catania Dyadic Sexual Communication Scale (CDSCS-6)

The CDSCS is a 6-item scale adapted from the original 13-item measure developed by Catania (1998). The measure assesses respondents’ perception of the discussion of sexual matters with their partners. Sample of questions include: (item 1) my partner rarely responds when I want to talk about sex life; and, (item2) my partner has no difficulty in talking to me about his sexual feelings and desires The CDSCS is a unidimensional scale, with items scored on a 5-point Likert scale (1=strongly disagree; 2= disagree; 3 undecided; 4=agree; 5 = agree strongly). Items 4, 5, and 6 are reverse-scored before all items are summed for a total score ranging from 1 to 30. Higher scores indicate poor communication skills. The CDSC is used in the current study because it was previously tested and shown to have good internal consistency ($\alpha=.92$). 30 A reliability analysis demonstrated that the CDSCS-6 is internally poor for the current study --Cronbach’s $\alpha = .57$(Norris, Clark, & Magnus, 2003).

(12) The Sexual Assertive Behaviour Scale (SABS-19)

29 The items were selected from the original 13-item scale developed by Catania (1998).
The SABS is a 19-item scale designed to assess women’s behaviors and motives related to initiating sexual contact (Anderson & Newton, 1995 in the Handbook of Sexuality-Related Measures, Davis, Yarber, Bauserman, 2004). The SABS is composed of six factors—Sexual Arousal, Hidden Motives, Verbal Pressure, Retaliation or Gain, Physical Force, and Exploitation. Respondents were instructed to provide written responses to questions in numerical format. For example, “How many times have you attempted to have sexual contact with a man by taking advantage of a compromising position he was in (being where he did not belong or breaking some rule)?” or “How many times have you attempted to have sexual contact with a man to get even with or hurt another man?” For ease of interpretation, total items are scored by calculating actual frequency counts elicited for each item. Responses are compiled and transformed into dichotomous scores of 0 for those who reported no experience and 1 for those who report engaging in the behaviour or motive one or more times. The SABS items were ordered in a manner that presented the most comfortable questions first (Fisher, Davis, Yarber, & Davis, 2010). The SABS is used in the current study because it was previously tested and shown to have good internal consistency reliability (Cronbach’s α = .75 [women]; Cronbach’s α = .89 for men) and test-retest reliability of .93 (Koss & Gidycz, 1985). The present reliability analysis shows an excellent Cronbach’s α.81.

(13) The Rosenberg Self-Esteem Scale (RSES-10)

The RSES is 10-item scale that measures global self-worth of both positive and negative feelings about the self. The scale is believed to be unidimensional. All items are answered using a 4-point Likert scale format ranging from strongly agree to strongly disagree. Items 2, 5, 6, 8, 9 are reverse-scored. (1) “Strongly Disagree,” (2) “Disagree,” (3) “Agree” 3, and (4) “Strongly
Agree” 4 points. All ten items were summed with higher scores indicating higher self-esteem. The RSES is used in the current study because it has demonstrated strong psychometric properties—it has an internal consistency between 0.77 and 0.90 level of coefficient. For the present study, the reliability analysis shows an excellent Cronbach α.90.

(14) The Brief Resiliency Scale (RS-25)32

The original RS questionnaire is comprised of 25 items; however the brief 14-item version was used for the present study. All the RS items are positively worded with responses on a 7-point Likert scale (1=strongly disagree; 2=somewhat disagree; 3=disagree; 4=neutral; 5=agree; 6=somewhat agree; and 7=strongly agree. Higher scores represent greater resilience (Wagnild & Young, 1993). Concurrent validity has been supported by significant correlations between RS-25 scores and measures of morale, life satisfaction, and depression (Wagnild & Young, 1993). The RS-25 is used in the current study because it has demonstrated strong psychometric properties with a Cronbach’s alpha of .91. For the present study, the reliability analysis shows an excellent Cronbach α.88 (Wagnild, & Young, 1993).

(15) Spirituality Perspectives Scale (SPS-15)

The original SPS (Reed, 1987) is a10-item scale that measures perspectives on the extent to which spirituality permeates one’s life and engagement in spiritually-related interactions. For example, participants are asked, “How often do you engage in private prayer or meditation?” The

31 Source: Rosenberg, M. (1965). The Society for Adolescent Self-image. This construct was recommended by Dr. Piran (2010).

32
measure was modified for the present study; items 11, 12, 13, 14, and 15 were added to the original 10 items. The SPS is a 6-point Likert scale. Items 1 to 4 present the following response options: 1=Not at all; 2=Less than once a year; 3= About once a year; 4=About once a month; 5=About once a week; 6=About once a day. Response options for items 5 to 15 include: 1=strongly disagree; 2= disagree; 3=disagree more than agree; 4=agree more than disagree; 5=agree; 6=strongly agree. For ease of interpreting and scoring, items are scored by calculating the mean across all items. The total scores range from 1.0 to 6.0; higher scores indicate a greater spiritual perspective. The SPS was used in the current study because it has demonstrated strong psychometric properties, with Cronbach’s alpha at .90 (Larson, 2004; Pullen, Tuck & Mix, 1996; Reed, 1992). The Korean version of the SPS (SPS-K; Kim, 2006; as cited in Kim, 2008) demonstrated a Cronbach’s alpha of .96 and .96 for the Korean and American versions, respectively (Kim, 2006). Among African Americans, it is found to have a Cronbach's alpha coefficient of .93 (Reed, 1987; Belcher, 1989). For the present study, the reliability analysis shows an excellent Cronbach α.83.

(16) The Africentrism Scale (AS-15)

The AS (Grills & Longshore, 1996) is a 15-item self-report measure that assesses the extent to which respondents endorse the Africentric worldview, based on the seven principles of the Nguzo Saba that represent African values for daily healthy living (Karenga, 1988). These principles include: unity (to strive for and maintain unity in the family, community, nation and race); self-determination (to define ourselves, name ourselves, create for ourselves and speak for ourselves); purpose (to collectively work toward building and developing of our community in order to restore our people to their traditional greatness; and, faith (to believe with all our hearts
in our parents, our teachers, our leaders, our people and the righteousness and victory of our struggle), to mention a few. The responses are coded on a 4-point Likert scale (1 = Strongly disagree, 2 = Disagree, 3 = Agree, 4 = Strongly agree) with reverse-coded responses for each positively and negatively worded item. A total score is obtained by summing the scale-coded responses. Higher scores suggest a stronger adherence to Africentric values. The AS is used in the current study because it has demonstrated strong psychometric properties with a Cronbach’s alpha of .81. Kwate (2003) reported that the AS demonstrated good internal consistency for the overall sample (α=.81), and maintained adequate to good overall internal consistency reliability for individual ethnic groups (i.e., Africans, α=.71; Caribbeans, α=.83; African Americans, α=.81); Joseph & Kuo’s (2012) study among African Canadians showed a Cronbach’s α of .75 In the present study, the AS demonstrated adequate internal consistency reliability (α = .78) for the overall sample indicating an internally consistent, stable and suitable for use with young Ghanaian women.

(17) The Cultural Mistrust Questionnaire (CMQ-4)

The CMQ-4 is a 4-item measure designed (Gillis, 2010) to assess participants’ cultural views on HIV/AIDS infection. Items are scored on a 5-point Likert scale (5= strongly agree; 4= somewhat agree; 3= agree; 2= somewhat disagree; 1 = strongly disagree). Total scores are calculated by summing the values of the 4 items. The CMQ items were ordered in a manner that presented the most comfortable questions first. Total scores ranged from 4 to 20; higher scores indicated higher levels of cultural mistrust. There is limited data on the internal consistency of this measure. For the present study, the reliability analysis shows a good Cronbach α.87.
(18) The Traditional Egalitarian Sex Role Scale (TESRS-20)

The TESRS-20 is a 20-item self-report scale designed to measure sex role ideology. The scale is broken down into 10 items that measure traditional sex role attitudes and 10 that measure egalitarian beliefs. Each item is scored using a 5-point Likert scale (5 = strongly agree; 4 = agree; 3 = not sure; 2 = disagree; 1 = strongly disagree; Larsen & Long, 1988). Total scores on the TESRS-20 were calculated by summing the scores on the 20 scale items; higher scores indicated more egalitarian beliefs and lower scores indicated more traditional beliefs. In a validation study, the TESRS-20 was found to have high concordant validity with related scales and a split-half reliability of .91 when corrected by the Spearman-Brown prophecy formula (Larsen & Long, 1988). The TESRS-20 is used in the present study because it was also found to demonstrate strong reliability (Cronbach’s α = .90). The present shows a reliability analysis of a good Cronbach’s α.74, indicating an internally consistent, stable and sensitive/suitable for use with young Ghanaian women.33

(19) The Social Health Battery (SHB-11)

The SHB an 11-item self-report scale that was developed by the RAND Corporation (1978). The measure assesses the level of social resources and social interaction including the number of friends and social interaction with friends. Items 1, 2 and 10 covers social behaviour with family, friends, and the community and uses both open-ended and forced-choice response

33 The measure was recommended by Dr. Lana Stemac (2010).
formats. Open-ended questions required the participant to respond with a number (e.g., number of friends). The rest of the items required the participant to respond on a 6-point Likert scale (1=everyday; 2= several days a week; 3=about once a week; 4=2 or 3 times in the past month; 5=once in the past month; 6: not at all in the past month). For ease of interpretation and analysis, individual scores are summed to obtain a total score; higher scores indicate more favorable social behaviour. The SHB is used in the current study because it has demonstrated strong psychometric properties with a Cronbach’s α of 0.72 for social contacts, 0.84 for group participation, and 0.68 for overall index. Corresponding one-year test-retest coefficients were 0.55, 0.68 and 0.68, respectively; coefficients for individual item ranged from 0.23-0.80. For the present study, the reliability analysis shows a good Cronbach α.74.

(20) The Childhood Experiences Scale (CES-1)

The CES is a 20-item measure originally developed by Finkelhor (1979) to assess specific childhood sexual experience that participants might have experienced. For the purpose of the current study, one item with eleven varied responses was adapted to explore the relationship between their childhood abuse and sexual risky behaviours. "For each experience [(a) an invitation or request to do something sexual; (b) kissing and hugging in a sexual way (c) another person showing his/her sex organ to you and (d) another person using force to be sexual with you, to mention a few], check yes if you were 14 years of age or younger AND the other person was at least 5 years older than you.” For the present study, the reliability analysis shows an excellent Cronbach α.94 indicating an internally consistent, stable and sensitive/suitable for use with young Ghanaian women.

34 Permission to use the CES was granted by Drs. Niva Piran and Abby Goldstein, (2010).
Table 4 presents the preliminary findings of the psychometric properties of the measures utilized in the current study.

**Table 4**

**Reliability Analysis of Measures:**

**Means and Standard Deviations of the 19 indicator variables in the current study**

**Means, Standard Deviations, and Cronbach Alphas for the Indicator Variables (N=200)**

<table>
<thead>
<tr>
<th>Indicator Variable</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Cronbach Alphas</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIV Knowledge</td>
<td>69.73</td>
<td>10.43</td>
<td>.601</td>
</tr>
<tr>
<td>HIV/AIDS Risk Behaviour</td>
<td>17.57</td>
<td>2.18</td>
<td>.701</td>
</tr>
<tr>
<td>HIV Testing Information</td>
<td>16.46</td>
<td>3.02</td>
<td>.421</td>
</tr>
<tr>
<td>Sexual Behaviour Questionnaire</td>
<td>5.79</td>
<td>4.03</td>
<td>.801</td>
</tr>
<tr>
<td>Abstinence scale</td>
<td>6.58</td>
<td>3.98</td>
<td>.909</td>
</tr>
<tr>
<td>HMBP</td>
<td>18.61</td>
<td>4.79</td>
<td>.634</td>
</tr>
<tr>
<td>Safer Sex Self-Efficacy</td>
<td>81.60</td>
<td>19.9</td>
<td>.893</td>
</tr>
<tr>
<td>Condom Use Self-Efficacy</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Peer Norms</td>
<td>14.89</td>
<td>7.94</td>
<td>.764</td>
</tr>
</tbody>
</table>

35 Expected Cronbach’s alpha of .7 is recommended (Field, 2009); however, Kline (1999) argued that when dealing with psychological constructs, values below even 0.7 can be realistically be expected because of the diversity of the construct being measured.
<table>
<thead>
<tr>
<th>Scale</th>
<th>Mean</th>
<th>Std Dev</th>
<th>Cronbach’s Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Catania’s Perception of Enjoyment</td>
<td>7.56</td>
<td>3.28</td>
<td>.453</td>
</tr>
<tr>
<td>Catania’s Dyadic Sexual Communication Scale</td>
<td>18.26</td>
<td>4.81</td>
<td>.574</td>
</tr>
<tr>
<td>The Sexual Assertive Behaviour Scale</td>
<td>71.41</td>
<td>16.00</td>
<td>.812</td>
</tr>
<tr>
<td>Rosenberg Scale</td>
<td>77.21</td>
<td>17.35</td>
<td>.896</td>
</tr>
<tr>
<td>Resiliency Scale</td>
<td>74.85</td>
<td>15.96</td>
<td>.883</td>
</tr>
<tr>
<td>Spirituality Scale</td>
<td>65.82</td>
<td>12.63</td>
<td>.825</td>
</tr>
<tr>
<td>Africentrism Scale</td>
<td>40.14</td>
<td>6.88</td>
<td>.784</td>
</tr>
<tr>
<td>Cultural Mistrust Scale</td>
<td>7.06</td>
<td>3.19</td>
<td>.874</td>
</tr>
<tr>
<td>Traditional Gender Role Scale</td>
<td>60.96</td>
<td>12.61</td>
<td>.736</td>
</tr>
<tr>
<td>Social Health Belief</td>
<td>26.02</td>
<td>7.47</td>
<td>.742</td>
</tr>
<tr>
<td>Childhood Sexual Abuse</td>
<td>27.53</td>
<td>6.10</td>
<td>.940</td>
</tr>
</tbody>
</table>
4.4  Stage specific measures

Based on the conceptual model for the current study, specific stage variables were examined. Hence, the conceptual framework guided the current study in selecting the following stage-specific measures. The rationale for the variables can be found in the literature review:

**Stage 1 Measures/Scales**

**Independent Variable:**
- The HIV Knowledge Questionnaire (HIV-KQ-19)

**Dependent Variables:**
- The HIV/AIDS Risk-Behaviour Knowledge Questionnaire (ARBKQ-11)
- The Peer Norm Scale (PNS-7)
- The Health Belief Model- Perceived Susceptibility (HBMP)

**Stage 2 Measures/Scales**

**Independent Variable:**
- HIV Testing Information (HIVTI-15)

**Dependent Variables:**
- Condom Use Self-Efficacy Scale
- The Health Belief Model- Perceived Susceptibility (HBMP)

**Stage 3 Measures/Scales**
Independent Variable:

- Condom Use Self-Efficacy Scale

Dependent Variables:

- Catania’s Perceptions of Enjoyment
- Catania Dyadic Sexual Communication Scale

Expanded ARRM Measures/Scales (All are Independent Variables)

Psychological Factors:

- The Rosenberg Self-Esteem Scale (RSES-10)
- The Sexual Assertive Behaviour Scale (SABS-19)

Interpersonal Factors:

- The Brief Resiliency Scale (RS-25)

Cultural Factors

- Spirituality Perspectives Scale (SPS-15)
- The Africentrism Scale (AS-15)
- The Cultural Mistrust Questionnaire (CMQ-4)
- The Traditional Egalitarian Sex Role Scale (TESRS-20)
- The Social Health Battery (SHB-11)
- The Childhood Experiences Scale (CES-1)

Refer to Table 1 for outline of independent and dependent variables.

4.5 Selection of Research Participants
The study received approval from the Ghana Health Services department and the University of Toronto HIV Research Ethics Board. Following ethics approval, a convenience sampling method was used to recruit participants for the present study. At the outset, consultations were conducted with various peer leaders, class leaders and youth facilitators to discuss the study, who in turn informed the potential participants about the study. For each research site, study posters or information leaflets were distributed to female students meeting the study requirements. Posters requesting volunteer research participants were displayed on various notice boards at the Young and Wise Center, the University of Ghana Campus, Legon, and the Datus Complex School. Interested individuals either contacted the researcher in person or via telephone for further information on the study. Potential participants were advised of two available options for participation: completing a survey in person or in a group setting. For the most part, participants were recruited by appealing for volunteers at the end of lectures or a youth session at youth center.

The convenience sampling approach used in this study allowed the researcher to recruit a diverse range of participants in terms of age, ethnicity, educational level and other demographic variables. Together, two hundred participants were recruited from one secondary school, one university, and a youth center located in Accra. One hundred undergraduate and graduate female students and 100 Senior and Junior High School females were participated in the study. As part of the inclusion criterion, participants were required to be females between ages 16 and 29 residing in Accra. Participants were also expected to be affiliated with the youth center or any of the two educational institutions. The expected minimum level of education was grade 10 or equivalent Junior High education. The study was also limited to heterosexual participants because any discussion or disclosure of a non-heterosexual status or sexuality is viewed as
“taboo” or a controversial issue in Ghana; for the current study, the researchers felt it would be prudent to exclude questions containing such content. Overall, the recruitment of participants was completed in close cooperation with the Matron at the Datus Complex School, faculty members at the University of Ghana, Department of Psychology and Home Science, and the youth leaders at the PPAG youth centre (refer to Table 5).

**Table 5**

*Description of site for participants and targeted/expected population*[^36]

<table>
<thead>
<tr>
<th>Research Location</th>
<th>Sample of female population</th>
<th>Number of completed surveys by respondents</th>
<th>Estimated Percentage by location</th>
</tr>
</thead>
<tbody>
<tr>
<td>University of Ghana, Legon (both undergraduate &amp; graduate students)</td>
<td>10,000</td>
<td>100</td>
<td>50%</td>
</tr>
<tr>
<td>PPAG (both J.SS &amp; SSS)</td>
<td>1200</td>
<td>23</td>
<td>11%</td>
</tr>
<tr>
<td>Datus Complex School (SSS)</td>
<td>5000</td>
<td>67</td>
<td>39%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>26,200</strong></td>
<td><strong>200</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

**4.6 Data Administration and Collection Procedure**

[^36]: Note of Impetus: The University of Ghana accounted for 50% of the population
Accra has a multi-lingual population; however, the primary and official language is English. As such, the current study was conducted in English. English is also the primary language used in the secondary and tertiary education system in Ghana and the participants appeared to be comfortable in completing a paper-and-pencil survey in English. Further, it was important to retain the English language content of the measures because the researcher wanted to maintain the content validity and the meaningfulness of the responses.

Before the survey was administered, the researcher provided each prospective participant with a general overview of the research. Afterwards, participants were given the Informed Consent Agreement (Appendix I) outlining the voluntary nature of participation and confidentiality of the study. The consent form also had the contact information of the researcher and research supervisor(s). The researcher sat with individual participants to explain the content prior to the signing of the consent. After signing the consent form, participants were allowed to voluntarily complete the survey. They were asked to read the instructions on the questionnaires carefully before providing any responses. The participants were further instructed that the questionnaires were to be completed on site and placed in a sealed envelope; consequently, it would not be possible to withdraw their data because, in order to maintain anonymity, there was no identifying information on any page of the survey or consent forms. The researcher systemically collected the surveys and ensured that each had their respective consent forms signed.  

Together, participants completed the survey at the youth center or in a classroom at the schools. Participants completed the survey in approximately 2 hours. The researcher was available to answer questions posed by the participants during and immediately after the  

---

37 Initials only, no real signatures were used.
administration. The researcher independently collected the data from the various sites. After each participant submitted her completed survey, the researcher checked it for completeness. All completed measures were collected, sealed in an envelope and placed under lock and key in a secured private office at the Department of Psychology, University of Ghana until the researcher returned to Canada.

No participants attempted to withdraw from the study or failed to complete the survey, representing 100% participation by the students or youth who entered the study. A total of 200 protocols were completed. Participants were not provided with monetary compensation for their participation. They were provided with a pamphlet on HIV/AIDS facts, snacks and drinks. Those who travelled to the youth center to participate in the study were offered $4 as compensation for transportation. The researcher also debriefed and thanked all the participants for participating in the study. The data were collected over a 3-month period spanning April 2011 to June 2011.

Completed surveys were placed in a secured suitcase under lock and key and upon arrival in Canada. Thus, surveys were stored under lock and key in a secured cabinet in the research supervisor’s research lab at the University of Toronto. Data was stored on a laptop and an external memory drive with protected passwords on all of them. Each device was kept under lock and key. All the data collected will be stored for 7 years, after which they will be destroyed.

4.7 Research Question

38 Often response rates in survey research are calculated simply by dividing the number of completed interviews by the number of individuals who were selected to participate in the research. Rarely is an interview fully completed; however, according to the American Association for Public Opinion Research, an interview is completed if the respondent was cooperative and at least 80% of the questions have been reliably and validly answered. For this study, completed survey is calculated by the number of measured at least 80% of the survey was expected to be completed by each participant.
1. What demographic variables (including age, level of education, family income, marital status, and religion) are related to risky sexual behaviour\(^{39}\) among young Ghanaian women?

2. What variables influence sexual risk behaviour at each stage of the ARRM and to which degree do we understand the hypothesized relationship between Stage 1, Stage 2 and Stage 3 variables?

3. What is the predictive value of the Expanded ARRM \(^{40}\) in relation to predicting sexual behaviour at each stage of the ARRM?

### 4.8 Research Hypotheses

Based on the conceptual mode for the current study, specific stage variables were examined—hence, the conceptual framework guided the current study in formulating the following stage specific hypotheses:

(a) **Stage Hypotheses**

**Stage 1 Hypotheses**

- Participants with higher HIV knowledge-- (independent variable) will be more likely to (a) label their behaviour sexual behaviour, and (b) perceive their level of susceptibility to HIV infections and (c) less likely to be influenced by their peers.

- Participant with higher and HIV knowledge (independent variables) will commit to HIV testing (dependent variable)

**Stage 2 Hypotheses**

- Participants with higher and HIV knowledge and perceived susceptibility-- (independent variables) to HIV infection will commit to HIV testing; and

---

\(^{39}\) Including vaginal-penile, oral, anal, kissing, fondling, and genital touching as well as abstinence.

\(^{40}\) The Expanded ARRM is primarily made up of selected Socio-Cultural variables/factors that were introduced in this study for the reason that the original ARRM lacks these socio-cultural factors.
• Participants who commit to testing their HIV--(independent variable) status are more likely to enact future condom use.

Stage 3 Hypotheses

• Participants who enact condom (independent variable) use are more likely to perceive sexual enjoyment and ) communicate with their partners;

• Participants who commit to testing their HIV status are more likely to enact condom use.

(b) Expanded ARRM Hypotheses

Interpersonal Hypothesis

• Participants who are able to perceive their susceptibility to HIV infection are more likely to be resilient.

Psychological Hypothesis

• Participants who are sexually assertive will enact better safer sex practices more than young women who are non-assertive.

Cultural Hypotheses

• Participants who embrace spiritual perspectives and identify Afrocentric values will commit and enact safer sex behaviours than young women who are not oriented with spirituality or Africentricism.

• Participants with a history of childhood sexual abuse are less likely to negotiate safer sex practices and commit to safer sex practices than young women who have not experienced childhood sexual abuse.
Chapter Five
Statistical Data Analysis

5.0 Introduction

The chapter focuses on reporting the statistical analyses for the present study. The majority of the demographic data comprised categorical variables, suitable for analysis via independent T-tests, Chi Square, ANOVA and Pearson correlation coefficient. In more specific terms, the Analysis of Variance (ANOVA) tests the statistical significance of the differences among the mean scores of two or more groups on one or more variables or factors. The independent t-test on the other hand, is an inferential statistical test that determines whether there is a statistically significant difference between the means in two unrelated groups at a time. Both are used in the present study specifically because, together, they assess the statistical significance of the relationship between categorical independent variable(s) and a continuous dependent variable (Vogt & Johnson, 2011). Finally, the Pearson correlation coefficient was used because it shows the degree of linear relationship between variables that have been measured on interval or ratio scales. Multiple regression analyses were employed for the stage-specific questions and hypotheses for the reason that it examines the correlation with more than two variables -- one of which is dependent. Hence, the goal is to measure the combined influence of two or more independent variables on a dependent variable (refer to Table 6 for details of variables and analyses).
Table 6
Outlines specific data analyses for each research questions and hypotheses

<table>
<thead>
<tr>
<th>Statistical Data Analysis for Specific Research Question(s) and Hypotheses</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Question 1</strong></td>
</tr>
<tr>
<td>What demographic variables (including age, level of education, family income, marital status, and religion) are related to risky sexual behaviour among young Ghanaian women?</td>
</tr>
</tbody>
</table>

**Analyses conducted for this question…**

- **Descriptive statistics** was conducted to provide simple summaries about the current sample and about the observations that have been made in the study.
- **T-test** was used to determine if two sets of data were significantly different from each other. The current data is normally distributed and so, the use of the t-test is applicable (e.g. education and HIV Knowledge).

<table>
<thead>
<tr>
<th><strong>Question 2</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>What variables influence sexual risk behaviour at each stage of the ARRM and to which degree do we understand the hypothesized relationship between Stage 1, Stage 2 and Stage 3 variables?</td>
</tr>
</tbody>
</table>

---

41 Including vaginal-penile, oral, anal, kissing, fondling, and genital touching as well as abstinence.
Analyses conducted for this question…

- **T-test** was used to determine if two sets of data were significantly different from each other. The current data is normally distributed and so, the use of the t-test is applicable (e.g. education and HIV Knowledge).

- **A chi square** ($X^2$) statistic is used to investigate whether distributions of categorical variables differ from one another (e.g. HIV Knowledge [yes or no] and age [younger and older women]).

- **ANOVA** is preferred when comparing three or more means or averages (e.g. age, abstinence and HIV education).

- **A Pearson product-moment correlation** was used in an attempt to draw a line of best fit through the data of two variables, and the Pearson correlation coefficient, $r$, indicates how far away all these data points are to this line of best fit.

**Question 3**

What is the predictive value of the Expanded ARRM \(^{42}\) in relation to predicting sexual behaviour at each stage of the ARRM?

Analyses conducted for this question…

- **ANOVA** is preferred when comparing three or more means or averages (e.g. age, abstinence and HIV education).

- **A Pearson product-moment correlation** was used in an attempt to draw a line of best fit through the data of two variables, and the Pearson correlation coefficient, $r$, indicates how far away all these data points are to this line of best fit.

---

\(^{42}\) The Expanded ARRM is primarily made up of selected Socio-Cultural variables/factors that were introduced in this study for the reason that the original ARRM lacks these socio-cultural factors.
through the data of two variables, and the Pearson correlation coefficient, $r$, indicates how far away all these data points are to this line of best fit.

**Stage 1 Hypotheses**

Participants with higher HIV knowledge (independent variable) will be more likely to (a) label their behaviour sexual behaviour, (b) perceive their level of susceptibility to HIV infections and (c) less likely to be influenced by their peers.

**Analyses Conducted for each question and hypotheses:**

- **Multiple Regression** analysis was used in the present research to recognize which among the independent variables (including HIV Knowledge, age, education, self-esteem, childhood education and resiliency) are related to the dependent variable, and to explore the forms of these relationships (Armstrong, 2012). In limited conditions, regression analysis can be used to infer causal relationships between the independent and dependent variables. However, according to Armstrong (2012) this can lead to illusions or false relationships, so caution is necessary for the reason that correlation does not necessarily imply causation.

- Categorical variables (including HIV knowledge and HIV testing) with two levels may be directly entered as predictor or predicted variables in a multiple regression model. At the outset, the categorical variables were recoded into a number of separate, dichotomous variables—“dummy coding” as demonstrated by Stockburger (2014).

- **ANOVA** was used when categorical variable(s) was used as the dependent variable. Albeit, it is important to emphasize that the present study involves one set of sample that move
across the three stages.

### Stage 2 Hypotheses

Participants who are likely to test their HIV status (independent variable); are more likely to have higher perceived susceptibility (dependent variable) to HIV infection (b) participants who commit to testing their HIV status (independent variable); are more likely to enact future condom use (dependent variable).

**Analyses conducted for this question…**

- Same procedure as stage 1 and 2

### Stage 3 Hypotheses

Participants who enact condom (independent variable) use are more likely to perceive sexual enjoyment and) communicate with their partners.

Participants who commit to testing their HIV status are more likely to enact condom use.

**Analyses conducted for this question…**

- Same procedure as Stage 1 and 2

### Interpersonal Hypothesis
Participants who are able to perceive their susceptibility to HIV infection are more likely to be resilient.

**Analyses conducted for this question…**

- Same procedure as Question 1 and 2 plus multiple regression analysis.

**Psychological Hypothesis**
Participants are sexually assertive will enact better safer sex practices more than young women who are non-assertive.

**Analyses conducted for this question…**

- Same procedure as Question 1 and 2 plus multiple regression analysis.

**Cultural Hypotheses**
Participants who embrace spiritual perspectives and identify Afrocentric values will commit and enact safer sex behaviours than young women who are not oriented with spirituality or Africentricism.

Participants a history of childhood sexual abuse are less likely to negotiate safer sex practices and commit to safer sexual practices than young women who have not experienced childhood sexual abuse.

**Analyses conducted for this question…**

- Same procedure as Question 1 and 2 plus multiple regression analysis.
5.1 PART ONE-Data Screening and Preparation

5.1.1 Missing Values

Like many other psychological studies involving numerous variables, missing values are expected and so in the case of the present study. Missing values are either random or non-random. Random missing values may occur because the subject inadvertently did not answer some questions. For example, the study was, or the subject may have been tired or not paying attention and simply miss the question. Random missing values may also occur through data entry mistakes. Non-random missing values may occur because participants purposefully did not answer some questions. For example, the participants may decline to answer a question they find confusing. The question may not provide appropriate response choices such as “no opinion” or “not applicable”, so the subject chooses not to answer the question. Also, participants may be reluctant to answer some questions because of social desirability concerns about the content of the question, such as questions about sensitive topics like past crimes, sexual history, prejudice or bias toward certain groups, etc.

Missing data was managed using listwise and/or pairwise deletion and mean item replacement. Thus, individual cases were excluded from the analysis if more than 20% of items were missing on any given measure. Most of the participants completed all the items on the survey; however, a small number of them (as few as one and no more than 15) missed a few items on a few scales. As recommended by Field (2012), in situations where less than 20% of

\[ \text{All data were analyzed with SPSS 18.0 software at the 0.05 level of significance.} \]
items are missing on a measure, the missing item scores can be substituted with the participant’s mean score on the measure in question and the case can be retained. Although, multiple regression analysis is the primary analytical method used in testing the predictor variable in relation to the ARRM, it is important to note that the missing data management did not affect the power level. The deletion of an item or an entire case was avoided. Missing data were only deleted when analyzing a particular scale. SPSS will either use “listwise deletion” or “pairwise deletion” of the missing values. You can select either technique when conducting analyses in SPSS (Field, 2012).

With listwise deletion, SPSS will not include cases (participants) that have missing values on the variable(s) under analysis. When analyzing one variable, listwise deletion simply analyzes the existing data. When analyzing multiple variables, listwise deletion removes cases if there is a missing value on any of the variables. The disadvantage is a loss of data because you are removing all data from participants who may have answered some of the questions, but not others (e.g., the missing data, Field, 2012).

In terms of pairwise deletion, SPSS will include all available data. Unlike listwise deletion, which removes cases (participants) that have missing values on any of the variables under analysis, pairwise deletion only removes the specific missing values from the analysis (i.e., not the entire case). In other words, all available data is included. For example, when you are conducting a correlation on multiple variables, then SPSS will conduct the linear/bivariate correlation between all available data points, and ignore only those missing values if they exist on some variables. In this case, pairwise deletion will result in different sample sizes for each correlation (Field, 2012). Field (2012) argues that the type of technique used to address missing data is not important as long as the total number of subjects does not significantly decrease. In
sum, the current sample data was complete (about 99%) with few missing items per variable (Field, 2012).

5.1.2 Outliers

Outliers are extreme values as compared to the rest of the data. The determination of values as “outliers” is subjective. Just because a value is extreme compared to the rest of the data does not necessarily mean it is somehow an anomaly, or invalid, or should be removed. The participant(s) chose to respond with that value, so removing that value is arbitrarily throwing away data simply because it does not fit an assumption. Even though there were a few items out of range in the data set for the current study, they were not extreme and do not affect the overall normal distribution of the data, as evidence by the generation of histograms and boxplots. In general terms, the data did not show any major skewness. 44 A few measures were moderately skewed; however, the graphs display normal curve and the skewness was not severe enough to effect the interpretation or usefulness of the data. In summary, the histogram shows a fairly normal distribution. If the Variance Inflation Factor (VIF) >3, there could be a multicolinearity problems (Refer to Table 7). Overall, these results show that the normality of residuals assumption is satisfied (Refer to Figures 3, 4, 5, 6 & 7).

Figures below include a few examples of the analyzed data (normal distribution of constructs or variables.

44 To detect skewness the data must not be >-2 and not <+2) among the variables.
Figure 3
Represent the Histogram and P-P Plot of Safer Sex Self-Efficacy

Figure 4
Represent the Histogram and P-P Plot of Sexual Assertiveness
Figure 5

Histogram and P-P Plot of Resiliency Scale:

Figure 6

Represents the Histogram and P-P Plot of Spirituality:

Figure 7

Represents the Histogram and P-P Plot of Childhood Sexual Abuse:
Table 7

Below is also a preliminary analysis of measures. From the data it appears multicollinearity is not a concern because the VIF\textsuperscript{45} scores were less than 3.

<table>
<thead>
<tr>
<th>Analyses by Variables</th>
<th>VIF (Variance Inflation Factor)</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIVKQ</td>
<td>1.161</td>
</tr>
<tr>
<td>ARBAQ</td>
<td>1.266</td>
</tr>
<tr>
<td>HIV Testing</td>
<td>1.546</td>
</tr>
<tr>
<td>SBQ</td>
<td>1.222</td>
</tr>
<tr>
<td>Abstinence Scale</td>
<td>1.387</td>
</tr>
<tr>
<td>HMBP</td>
<td>1.637</td>
</tr>
<tr>
<td>Self-Efficacy</td>
<td>1.338</td>
</tr>
<tr>
<td>Peer Norm</td>
<td>1.133</td>
</tr>
<tr>
<td>Catania’s Perception of Enjoyment</td>
<td>1.369</td>
</tr>
</tbody>
</table>

\textsuperscript{45} The variance inflation factor (VIF) “quantifies the severity of multicollinearity in an ordinary least squares regression analysis. It provides an index that measures how much the variance (the square of the estimate’s standard deviation) of an estimated regression coefficient is increased because of collinearity (Hair, Anderson, Tatham & Black, 2006 p. 2).
5.1.3 Factor Analyses

The data was screened for entry errors (e.g., missing or incorrect entries; Kline, 2005). In conducting the multiple regression analyses for the present study, the specified relationships between variables were explored using factor analysis, which required the assumption of normal distribution and multicollinearity (i.e., variables that are highly correlated are interrelated; Field, 2012). The assumption is that if the test questions measure the same underlying dimensions, then we would expect them to correlate with each other. Preliminary analyses of the present data suggested that the R-Matrix was normal. The determinant for each variable was also greater than the necessary value of .001 (Field, 2005). The scree plot also showed a fairly normal curve.

<table>
<thead>
<tr>
<th>Analyses by Variables</th>
<th>VIF (Variance Inflation Factor)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Catania Dyadic Sexual Communication Scale</td>
<td>1.342</td>
</tr>
<tr>
<td>Rosenberg Self-Esteem Scale</td>
<td>1.150</td>
</tr>
<tr>
<td>Sexual Assertiveness Scale</td>
<td>1.282</td>
</tr>
<tr>
<td>Resiliency Scale</td>
<td>1.526</td>
</tr>
<tr>
<td>Spirituality Perspective Scale</td>
<td>1.374</td>
</tr>
<tr>
<td>Africentrism Scale</td>
<td>1.415</td>
</tr>
<tr>
<td>Cultural Mistrust</td>
<td>1.471</td>
</tr>
<tr>
<td>Traditional Egalitarian Sex Role Scale</td>
<td>1.407</td>
</tr>
<tr>
<td>Social Health Battery</td>
<td>1.249</td>
</tr>
<tr>
<td>Childhood Experience Scale</td>
<td>1.222</td>
</tr>
</tbody>
</table>
the whole, all the questions seemed to correlate fairly well and none of the coefficients were particularly large.

The most critical component of the factor analysis is the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy and the Bartlett’s Test of Sphericity. The KMO statistic has a value between 0 and 1. A value of 0 indicates the sum of partial correlation is large relative to the sum of correlation, indicating diffusion in the pattern of correlation; a value close to 1 indicates that pattern of correlations are relatively compact and so factor analysis should yield distinct and reliable factors (Field, 2012). Kaiser (1974) recommended that KMO values be interpreted as follows: 0.5 is acceptable, 0.5-0.7 is moderate, 0.7-0.8 is good, and 0.8-0.9 is great and 0.9 and above as superb. The Bartlett’s test of Sphericity is highly significant (p<0.001) which suggest that the factor analyses are deemed suitable for the current study. On the whole, careful consideration and resolution of these issues were fundamental to an honest analysis and interpretation of the data. The results from the KMO and Bartlett’s Test are presented in Table 8.

**Table 8**

Factor Analysis of Variables by Measures:

<table>
<thead>
<tr>
<th>Kaiser-Meyer-Olkin (KMO) and Bartlett’s Test</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Factor Analyses by Variables</strong></td>
</tr>
<tr>
<td>HIVKQ</td>
</tr>
</tbody>
</table>

---
<table>
<thead>
<tr>
<th>Scale</th>
<th>Reliability</th>
<th>Mean</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARBAQ</td>
<td>.76 (good)</td>
<td>55</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>HIV Testing</td>
<td>.66 (moderate)</td>
<td>36</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>SBQ</td>
<td>.75 (good)</td>
<td>120</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Abstinence Scale</td>
<td>.92 (superb)</td>
<td>28</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>HMBP</td>
<td>.60 (moderate)</td>
<td>21</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Self-Efficacy</td>
<td>.90 (superb)</td>
<td>378</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Peer Norm</td>
<td>.55 (moderate)</td>
<td>21</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Catania’s Perception of Enjoyment</td>
<td>.50 (moderate)</td>
<td>1</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Catania Dyadic Sexual Communication Scale</td>
<td>.63 (moderate)</td>
<td>15</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Rosenberg Self-Esteem Scale</td>
<td>.69 (moderate)</td>
<td>45</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Sexual Assertiveness Scale</td>
<td>.72 (good)</td>
<td>21</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Resiliency Scale</td>
<td>.90 (superb)</td>
<td>91</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Spirituality Perspective Scale</td>
<td>.85 (great)</td>
<td>105</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Africentrism Scale</td>
<td>.80 (great)</td>
<td>105</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Cultural Mistrust</td>
<td>.64 (moderate)</td>
<td>6</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Traditional Egalitarian Sex Role Scale</td>
<td>.84 (great)</td>
<td>190</td>
<td>&lt;.001</td>
</tr>
</tbody>
</table>
5.1.4 Reliability Analysis

In addition to the factor analysis, the reliability analysis was conducted to determine how questionnaire items correlated with total scores. Cronbach’s alphas were examined and values in the range of .7 to .8 or above were interpreted as indicators of good reliability (Kline, 1979). However, when dealing with psychological constructs, values below 0.7 can be expected because of the diversity of the construct being measured (Kline, 1999). The outcome of the reliability analyses are presented in Table 4.

<table>
<thead>
<tr>
<th></th>
<th>Cronbach’s Alpha</th>
<th>N</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social Health Battery</td>
<td>.76 (good)</td>
<td>28</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Childhood Experience Scale</td>
<td>.94 (superb)</td>
<td>126</td>
<td>&lt;.001</td>
</tr>
</tbody>
</table>

5.2 PART TWO - Description of statistical data analyses for proposed Hypotheses and Research Questions

The majority of the demographic data comprised categorical variables, suitable for analysis via T-tests, Chi-Square, ANOVA and Pearson. Multiple regression was used to analyze the rest of the hypotheses to understand which variables are correlated with the criterion and also correlated among each other. Using block entry, the predictive ability of the specified variables can be assessed and the strength of the relationship and the direction can be determined by examining the standardized or unstandardized regression coefficient. The order of entry for each block was based on theoretical and logical approach indicated by the salient demographic information (e.g. age and education, refer to Table 9 for details).
Chapter Six

Findings

6.0 Introduction

This chapter focuses on reporting the results of the current study. A description of the demographic data is provided, followed by specific variable information. The findings of the stage specific variables and their interaction with the ARRM and expanded ARRM variables are also summarized.

6.1 Part One--Descriptive Results/Demographic Information

Two hundred female participants took part in this study. Ages of the participants ranged between 16 and 29 years, with the average age of participants being 20.5 years of age and the mode being 17 years of age. The majority of the participants identified themselves as Ghanaians living in Ghana (90.5%), while the rest identified themselves as non-Ghanaians (mostly from Liberia, Ivory Coast, Togo and Nigeria) living in Ghana (9.5%). English was the primary language spoken by the participants; 32.5% spoke more than one language, while 23.5% spoke only English. In addition, 23% could communicate in Twi, while 9.5% and 10% spoke Ewe and Ga respectively. A small proportion (1%) of the participants spoke one or more African language including Yoruba and Hausa (refer to Table 9).

In terms of education, 53% of the participations held a master’s and bachelor’s level degree, while the remaining participants (47%) held a high school level of education. The following is the breakdown of the educational level of participants: Junior High (.5%), Senior High 1 (13.5%), Senior High 2 (12.5%), Senior High 3 (20.5%), Level 100 (7.0%), Level 200 (8.5%), Level 300 (13%), Level 400 (20%), and Postgraduate (4.5%).
With respect to work history, only 12.5% indicated that they are currently or have been previously employed. In terms of household annual income, 22% reported income above $30,000 (at an exchange rate of USD$1 = 2 Ghana cedis), 13% also reported $20,000-$30,000 as household income, 8% reported income in the range of $15,000-$20,000, and 23.5% reported $10,000-$15,000 as their household income. The remainder of the participants (33.5%) reported no household income. About 89% of the participants identified as being single, while 10% indicated that they were married. The remainder said they were separated/divorced (.5%) or cohabiting (.5%). All but 9% of participants indicated they did not have children.

Although most of the participants (64%) were living on campus at the time of the study, 78% identified their parents’ home as their primary residence; 15% lived in rented accommodations, while 6% owned their residence. Additionally, approximately 26% indicated that they were peer educators, 15% indicated they were youth leaders, and 8.5% identified themselves as facilitators. Furthermore, 66% of the participants identified themselves as Christians, 8% identified themselves as Orthodox Muslims, and .5% indicated that they were atheist. In terms of substance use, one participant (.5%) reported use of recreational drugs while 46 (23%) indicated only alcohol consumption in their life time (refer to Table 9).

Table 9
Below describes the demographic information.

<table>
<thead>
<tr>
<th>Demographic Characteristics (N =200)</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Females</td>
<td>200</td>
<td>100</td>
</tr>
</tbody>
</table>
Age (*Mean* =21, *Mode*=17, *SD*=3.517)

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Younger women (16-19)</td>
<td>89</td>
<td>45</td>
</tr>
<tr>
<td>Older women (20-29)</td>
<td>111</td>
<td>56</td>
</tr>
</tbody>
</table>

*Primary Language*

<table>
<thead>
<tr>
<th>Language</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>English</td>
<td>47</td>
<td>24</td>
</tr>
<tr>
<td>Twi</td>
<td>46</td>
<td>23</td>
</tr>
<tr>
<td>Ewe</td>
<td>19</td>
<td>10</td>
</tr>
<tr>
<td>Ga</td>
<td>20</td>
<td>10</td>
</tr>
<tr>
<td>Other (e.g. French, Yoruba and Hausa)</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>More than one of these languages</td>
<td>65</td>
<td>33</td>
</tr>
</tbody>
</table>

*Completed Education* (Mean =14, *Mode*=16, *SD*=2.56)

<table>
<thead>
<tr>
<th>Level</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>High School</td>
<td>94</td>
<td>47</td>
</tr>
<tr>
<td>Post-secondary (College &amp; University)</td>
<td>106</td>
<td>53</td>
</tr>
</tbody>
</table>

*Employment Status*

<table>
<thead>
<tr>
<th>Status</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>25</td>
<td>13</td>
</tr>
<tr>
<td>No</td>
<td>168</td>
<td>84</td>
</tr>
<tr>
<td>Missing</td>
<td>7</td>
<td>4</td>
</tr>
</tbody>
</table>

*Household Income*

<table>
<thead>
<tr>
<th>Income Range</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>c 10,000-15,000</td>
<td>47</td>
<td>24</td>
</tr>
<tr>
<td>c 15,000-20,000</td>
<td>16</td>
<td>8</td>
</tr>
<tr>
<td>c 20,000-30,000</td>
<td>26</td>
<td>13</td>
</tr>
<tr>
<td>c 30,000 and more</td>
<td>44</td>
<td>22</td>
</tr>
</tbody>
</table>

---

\(^{48}\) Cedis=Ghanaian Currency
Reported no income/Missing 67 34

**Marital Status**
- Single 179 90
- Married 19 10
- Separated/Divorced 1 .5
- Cohabiting 1 .5

**Have Children**
- Yes 18 9
- No 180 90
- Missing 2 1

**Leadership/Community Engagements**
- Peer Educator 51 26
- Youth Leader 30 15
- Facilitator 17 9
- Others (e.g. HIV counselor, Member of youth club, youth advocate) 24 12
- N/A 78 39

**Family HIV Status**
- Yes 13 7
- No 183 92
- N/A 3 2
- Missing 1 .5

**HIV Orphan**
- Yes 1 .5
- No 199 99.5

**Religious Affiliation**
- Pentecostal/Charismatic 132 66
6.1.1 HIV Knowledge

Table 10

<table>
<thead>
<tr>
<th>N</th>
<th>%</th>
<th>Descriptive Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>134 of the</td>
<td>67%</td>
<td>…indicated that blood, semen, vaginal fluids and breast milk are the only fluids that can transmit HIV.</td>
</tr>
<tr>
<td>participants</td>
<td></td>
<td></td>
</tr>
<tr>
<td>148 of the</td>
<td>74%</td>
<td>…believe that HIV antibodies can take up to 10 years to be detected. Encouragingly, the majority of the participants know that most babies born to HIV positive mother are not HIV positive.</td>
</tr>
<tr>
<td>participants</td>
<td></td>
<td></td>
</tr>
<tr>
<td>146 of the</td>
<td>73%</td>
<td>…disagreed that maintaining good physical condition is the best way to prevent getting HIV. Eighty-seven percent (N=174) of the participants mentioned that condoms reduce the risk of getting the HIV.</td>
</tr>
<tr>
<td>participants</td>
<td></td>
<td></td>
</tr>
<tr>
<td>136 of the</td>
<td>72.5%</td>
<td>…acknowledged that one can contract HIV from oral sex.</td>
</tr>
<tr>
<td>participants</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
At some level, it was noted that participants were well informed on HIV transmission (refer to Table 10 above). However, only 37.5% (n=75) of the participants agreed that semen has a higher concentration of HIV than blood. Further, 74% (n=148) of the participants believe that HIV antibodies can take up to 10 years to be detected. Encouragingly, the majority of the participants know that most babies born to HIV positive mother are not HIV positive.\textsuperscript{49} Additionally, participants (73%, N=146) generally disagreed that maintaining good physical condition is the best way to prevent getting HIV. Eighty-seven percent (N=174) of the participants mentioned that condoms reduce the risk of getting the HIV. Lastly, 72.5% (n=136) of the participants acknowledged that one can contract HIV from oral sex. HIV knowledge among secondary school participants (n=94), showed a mean score of 1.66 and an SD of .82. Post-secondary (e.g., college and university) participants (n=106) had a mean of 1.79 and an SD of .84. On the HIV/AIDS risk behavior assessment, secondary school participants (n=94) had a mean of 8.0; SD=1.65) and tertiary students (n=106) had a mean of 8.00 and SD =8.69). While there appears to be a positive significant relationship between education and HIV knowledge ($X^2$ (1, $N = 198$) = 221.5, $p < .001$), there was no significant relationship between age and HIV knowledge ($X^2$ (1, $N = 198$) = 193.8, $p < .906$). An independent T-test analysis further showed support of a positive significant relationship between HIV knowledge and education ($t$ (198) =13.505; $p<.05$.). The overall mean score for HIV knowledge was 18.8 (SD =.81) for the total sample.

In addition to these, the majority of the participants (95%; n=191) reported that washing after sex cannot prevent infection. This finding suggests that Ghanaian girls do not believe in earlier myths surrounding HIV transmission. Similarly, 93.5% (n=187) said they do not think

\textsuperscript{49} HIV mother to child transmission is estimated at %15 (UNAIDS, 2012)
that only gay (homosexual) men contract the virus. Further, 76.5% (n=153) also indicated that one can be infected with the virus without having multiple sex partners. Fifty-three percent (53%; n=106) of the participants indicated that sex with someone who is an IV drug user creates risk for transmission. In addition, 85% (n=169) believe that using condoms can help prevent HIV transmission; 91% (n=182) indicated that unborn babies can contract HIV from their mothers. Lastly, 87% (n=173) mentioned that one can contract the HIV virus from one sexual contact. This last response is encouraging in light of earlier responses regarding HIV transmission in relation to having sex with several partners. The analyses of these responses show that, in general, HIV knowledge and understanding of HIV risk behaviour in young Ghanaian women is very high as measured by HIV Knowledge scale.

6.1.2 HIV Testing Behaviour

<table>
<thead>
<tr>
<th>N</th>
<th>%</th>
<th>Descriptive Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>7 of the participants</td>
<td>12%</td>
<td>...disclosed that they were currently living with HIV.</td>
</tr>
<tr>
<td>33 of the participants</td>
<td>52%</td>
<td>...reported HIV negative status.</td>
</tr>
<tr>
<td>18 of the participants</td>
<td>28%</td>
<td>...said they were unsure of their status.</td>
</tr>
<tr>
<td>17 of the participants</td>
<td>26%</td>
<td>...reported they got tested because they were not using condoms during sex and felt at risk.</td>
</tr>
<tr>
<td>6 of the participants</td>
<td>11%</td>
<td>...got tested because their friends were getting tested.</td>
</tr>
<tr>
<td>Participants</td>
<td>Tested Times</td>
<td>Reason for Testing</td>
</tr>
<tr>
<td>--------------</td>
<td>-------------</td>
<td>--------------------</td>
</tr>
<tr>
<td>12</td>
<td>2</td>
<td>Reported they have been tested twice</td>
</tr>
<tr>
<td>9</td>
<td>3</td>
<td>Reported having been tested three times,</td>
</tr>
<tr>
<td>1</td>
<td>More than 3</td>
<td>Indicated that they had been tested more than three times.</td>
</tr>
</tbody>
</table>

In describing why non-tested participants did not test their status, 20% of the participants indicated that they were too young to be infected or that they had never been sexually active (virgins). Participants who had been tested were asked to comment on their reasons for being tested. About 26% reported they got tested because they were not using condoms during sex and felt at risk, twenty-one percent said that HIV testing was required or part of a medical routine, and 11% indicated that they got tested because their friends were getting tested. Sixteen percent reported they got tested because they had more information and 22% said they got tested because they wanted some assurance for themselves and also to reduce their personal anxiety about the disease.

Additionally, 14% of the participants indicated other reasons including: having a new partner, wanting to have children, being influenced by the youth centre worker, needle prick from a patient, marriage and visa requirement. Further, about 28.5% of participants indicated that they have been tested once, 18.5% reported they have been tested twice, 13.5% reported having been tested three times, and 2% indicated that they had been tested more than three times. It was also noted that less than half (38%) of the participants conducted their test in the last 2 to 6 months, while 60% said they were tested in the last 2 years; about 2% indicated they were tested
about 5 or 10 years ago. Thirty-four percent of the participants indicated that they received HIV
counselling before their test, while 3.5% said they were not sure whether they received
counselling. About 27% of participants indicated that they received their test results, while 38%
indicated that they did not. It was also noted that 35% of the participants are still awaiting their
results. Of those who got their results, 19% mentioned that they shared results with a partner,
58% indicated they did not share their results with anyone, and 23% indicated they were not sure
if they would share their results. In terms of the HIV testing among their partners, 16% said their
partners have been tested for HIV while 45% reported that their partners have not. Thirty-nine
percent of participants mentioned that they were unsure whether their partner had been tested;
63% said they would encourage their partners to get tested for HIV.

6.1.3 Characteristics of Reported Sexual Activity

Research Question 1: What type of sexual are sexually active young Ghanaian women engaged
in?

Table 12

<table>
<thead>
<tr>
<th>Reported Sexual Activity (N =200)</th>
<th>N</th>
<th>%</th>
<th>Descriptive Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>102 of the participants</td>
<td>51%</td>
<td></td>
<td>…indicated they were sexually active and had engaged in one of the following sexual activities: (a) kissing, (b) fondling, (c) oral, (d) anal, and (e) vaginal sexual intercourse with or without condoms.</td>
</tr>
<tr>
<td>95 of the participants (n=200)</td>
<td>48%</td>
<td></td>
<td>…reported that they were not sexually active.</td>
</tr>
<tr>
<td>20 of the participants (n=102)</td>
<td>20%</td>
<td></td>
<td>…indicated that they had sex with someone for the exchange of money or a gift.</td>
</tr>
</tbody>
</table>
Fifty-one percent (n= 102) of participants indicated they were sexually active and had engaged in one of the following sexual activities: kissing, fondling, oral, anal and vaginal sexual intercourse with or without condoms. The mean age of sexually active participants was 19 years. Among those who were sexually active, 10% indicated that they had sex in the context of a new relationship. Twenty percent indicated that they had sex with someone for the exchange of money or a gift. From the same data, 23% reported that they engaged in sexual activity once, 7.5% reported twice and 1% reported three or more times (Refer to Table 12).

In addition, 53% of the participants mentioned that they have talked to their partners about safer sex practices such as using condoms, while 47% said they have not. Forty-six percent indicated that they felt comfortable in talking to their partner about safer sex practices, 35% indicated they were somewhat comfortable, and approximately 19% said they were not comfortable. Twenty-two percent indicated they started the discussion, while 28% said their partners started the discussion. About three percent of the participants said their primary partners were living with HIV/AIDS, while about 36% said they were unsure of the status of their partners (Refer to Table 15, 16, 17, 18 &19 for further description of sexual activities among participants).
### Table 13

**Sexual Activities among sexually active participants (N=102)**

<table>
<thead>
<tr>
<th>Sexual Activity</th>
<th>N</th>
<th>Percentage (approximated)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Types of sexual activity</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oral</td>
<td>15</td>
<td>15</td>
</tr>
<tr>
<td>Anal</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>Vaginal</td>
<td>39</td>
<td>38</td>
</tr>
<tr>
<td>Kissing</td>
<td>62</td>
<td>61</td>
</tr>
<tr>
<td>Fondling</td>
<td>63</td>
<td>62</td>
</tr>
<tr>
<td>Kissing and fondling</td>
<td>34</td>
<td>33</td>
</tr>
<tr>
<td>Kissing, fondling and oral sex</td>
<td>15</td>
<td>15</td>
</tr>
<tr>
<td>Sex with one partner exclusively</td>
<td>34</td>
<td>33</td>
</tr>
<tr>
<td>Sex with different partners</td>
<td>16</td>
<td>16</td>
</tr>
</tbody>
</table>
6.1.4 Condom Use

Table 14

Condom Use among sexually active participant (N=102)

<table>
<thead>
<tr>
<th>Sexual Activity</th>
<th>N</th>
<th>Percentage (approximated)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Types of sexual activity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vaginal sex with condoms</td>
<td>19</td>
<td>19</td>
</tr>
<tr>
<td>Vaginal sex without condom</td>
<td>32</td>
<td>31</td>
</tr>
<tr>
<td>Kissing, vaginal sex with condom with exclusive partner</td>
<td>15</td>
<td>15</td>
</tr>
<tr>
<td>Kissing, vaginal sex without condom with exclusive partners</td>
<td>28</td>
<td>27</td>
</tr>
</tbody>
</table>

The majority of participants (43%) indicated that they purchased their condoms from the pharmacy or drug store, while 13% said they got their condoms from their friends. Sixteen percent and 11% said they obtained condoms from youth centres and community clinics, respectively (Refer to Table 14). Approximately 20% of the participants said they had sexual intercourse once, 15% indicated twice, 8% indicated three times, and 20% said more than three times in the past 6 months. Twenty-five percent of participants indicated that they always use
condoms, 15% indicated that they almost never use condoms, and 25% indicated that they never used condoms. Further, age was positively related to a condom use with a Pearson Correlation coefficient of r=.194 (p<.001). This suggests that there is a strong positive relationship between age and condom use in this sample. Condom use was perceived as a safer sex strategy than unprotected sexual intercourse by participants in both older and younger participants.

Table 15

Percentage response of stage 3 independent variables

<table>
<thead>
<tr>
<th>How much do you enjoy or think you might do the following sexual activities, even if you have never done the behaviour, try to imagine how much you would enjoy it.</th>
<th>21.5% (n=43) said they will enjoy it very much</th>
<th>20% (n=41) enjoy somewhat much,</th>
<th>16% (n=33) enjoy slightly,</th>
<th>9.5% (n=19) dislike slightly</th>
<th>3.5% (n=7) dislike somewhat</th>
<th>27.5% (n=55) dislike very much</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) vaginal sexual intercourse with condom</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(b) vaginal sex without condoms</td>
<td>40% (n=80) said they will enjoy very much</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>13% (n=27) enjoy somewhat much</td>
<td>5.5% (n=11) enjoy slightly</td>
<td>5.5% (n=11) dislike slightly</td>
<td>7.5% (n=15) dislike somewhat</td>
<td>22.5% (n=45) dislike very much.</td>
<td>50</td>
</tr>
</tbody>
</table>

50 This could mean that participants disliked sex, that is not anything to do with condom use.
Table 16

*Description of current sexual relationship*\(^{51}\)

<table>
<thead>
<tr>
<th>Type</th>
<th>N</th>
<th>Percentage (approximated)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A lover you have been with for a while</td>
<td>56</td>
<td>28</td>
</tr>
<tr>
<td>An ex-lover you got back together with temporarily</td>
<td>16</td>
<td>8</td>
</tr>
<tr>
<td>A new lover or someone you’ve established a steady relationship with</td>
<td>20</td>
<td>10</td>
</tr>
<tr>
<td>Someone you’re developing or plan to develop a new relationship with</td>
<td>15</td>
<td>8</td>
</tr>
<tr>
<td>Some you know well but don’t plan to become steady partner</td>
<td>7</td>
<td>4</td>
</tr>
<tr>
<td>Some you know slightly but you don’t plan to become steady partners</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Someone you had sex with and don’t plan to do it again</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>Someone you had sex with in exchange</td>
<td>13</td>
<td>6</td>
</tr>
</tbody>
</table>

\(^{51}\) Respondents were instructed to endorse a descriptor that best described their current sexual relationship. Consequently, the cumulative frequency (N) does not sum to 102 and the cumulative percentage (%) does not sum to 100.
for money or as part of financial arrangement.

Table 17

*Getting Condoms*

<table>
<thead>
<tr>
<th>Source</th>
<th>N</th>
<th>Percentage (approximated)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clinic</td>
<td>21</td>
<td>11</td>
</tr>
<tr>
<td>Youth Centres</td>
<td>32</td>
<td>16</td>
</tr>
<tr>
<td>Drug Store/pharmacy</td>
<td>86</td>
<td>43</td>
</tr>
<tr>
<td>Friends</td>
<td>26</td>
<td>13</td>
</tr>
</tbody>
</table>

Table 18

*Frequency of Vaginal Sex in the past 6 months*\(^{52}\)

<table>
<thead>
<tr>
<th>Frequency</th>
<th>N</th>
<th>Percentage (approximated)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Once</td>
<td>39</td>
<td>20</td>
</tr>
<tr>
<td>Twice</td>
<td>31</td>
<td>16</td>
</tr>
<tr>
<td>Three times</td>
<td>16</td>
<td>8</td>
</tr>
<tr>
<td>More than three times</td>
<td>40</td>
<td>20</td>
</tr>
<tr>
<td>None</td>
<td>29</td>
<td>15</td>
</tr>
</tbody>
</table>

\(^{52}\) Respondents were instructed to endorse frequencies of sexual activities that applied to them. Consequently, the cumulative frequency (N) does not sum to 102 and the cumulative frequency (%) does not sum to 100.
Table 19

Number of times Condom was used in the past 6 months

<table>
<thead>
<tr>
<th>Frequency</th>
<th>N</th>
<th>Percentage (approximated)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Always</td>
<td>50</td>
<td>25</td>
</tr>
<tr>
<td>Almost always</td>
<td>40</td>
<td>20</td>
</tr>
<tr>
<td>Almost never</td>
<td>29</td>
<td>15</td>
</tr>
<tr>
<td>Never</td>
<td>49</td>
<td>25</td>
</tr>
</tbody>
</table>

6.1.5 Characteristics of Sexually Abstinence Participants

Table 20

Reasons for Abstaining from sexual intercourse (N = 95)

<table>
<thead>
<tr>
<th>N</th>
<th>%</th>
<th>Descriptive Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>66 of the participants</td>
<td>69%</td>
<td>…have not engaged in sexual intercourse because of fear of pregnancy</td>
</tr>
<tr>
<td>61 of the participants</td>
<td>64%</td>
<td>…said they feared being infected with HIV/AIDS,</td>
</tr>
<tr>
<td>57 of the participants</td>
<td>60%</td>
<td>…feared being infected with an STI,</td>
</tr>
<tr>
<td>53 of the participants</td>
<td>55%</td>
<td>…feared parental disapproval</td>
</tr>
</tbody>
</table>
Forty-eight percent of participants (n= 95) indicated that they are abstaining from sex. Fifty-seven percent of the abstinent participants revealed that they do not feel ready to have intercourse, while 55% of them indicated that sexual intercourse before marriage was against their religious beliefs. In addition, 69% of participants indicated that they have not engaged in sexual intercourse because of fear of pregnancy, 64% said they feared being infected with HIV/AIDS, 60% feared being infected with an STI, and 55% feared parental disapproval. In addition, 32% indicated that they have not met the right partner. Furthermore, it was noted that sexual activity differed significantly among girls who were younger and girls who were older. The average age of sexually abstinent younger women (16-19) was 17, while the mean age of older abstinent women (20-29) was 21\(^53\).

6.2 Part Two--- Testing Questions 1, 2 and 3

For question 1, observed variables\(^54\) were examined to determine whether any significant mean differences existed between the listed demographic variables age\(^55\), education (secondary versus postsecondary), marital status, household income and religious affiliation. However, the independent t-test and one-way ANOVA analyses revealed mixed results. The results of an ANOVA have also shown that there was no significant relationship between abstinence and HIV status (F (1, 92) =1.214; p=.271). Given this information, it is apparent that the continuous

\(^{53}\) The participant group was divided in younger and older based on pre-university and university level participants.

\(^{54}\) In current study, a few demographics (including age, education, marital status, household income, peer norm, abstinence, and condom use) were analyzed because theoretically it would have been difficult to include every demographic given the implication on the level of power on some of the demographics.

\(^{55}\) (i.e. 16-19 years representing younger participants and 19-29 years represents older participants.)
promotion and implementation of HIV safer sex strategies among living HIV cannot be underestimated.

In terms of peer norms, 67% (n=134) of participants indicated that most people who are important to them think they should use condoms every time they engage in sexual activity. The current date showed that 70% of participants (n=131) mentioned that their close friends think it is important to have sex with one partner and also use condoms every time they engage in sex. Similarly, 67% (n=134) of the participants reported that their close friends think it is unsafe to have sex without condoms. Interestingly, 55% (n=111) indicated that their friends think it is important to practice abstinence. Overall, it appears that the peer norm or the significant people in the lives of the participants impacted their decisions around sexual behaviour. However, it cannot be concluded that this information actually translates to the day-to-day sexual practices of the participants--And whether there is any statistical relationship between peer norms and sexual risk behaviours. Generally, it was noted that age, education and marital status had no significant relationship with peer norm \( [F (3, 195) =.231; p=.921] \).

Regarding question 2, at Stage 1 it was reported that there was no relationship between HIV knowledge and perceived susceptibility to HIV infection \( [F (19, 1780) =5.664, p=.461] \). A Pearson correlation also indicated that there was a negative correlation between perceived susceptibility and age (\( r=-.299, p <.001 \)). Perceived susceptibility on the ARRM Stage 1 also shows that the majority of the participants 56% (n=112) disagree that people like them do not get infected with HIV. In the same vein, 75.5% (n=149) disagree that they are so healthy that their body can fight off HIV infection. Seventy-seven percent of the participants (n=155) mentioned that they do not think that they are too young to get infected with HIV. There was a split response on whether participants are worried that they might get infected with HIV (n=87
disagree; n=104 agree). The majority of the participants (n=188) indicated that HIV infection cannot be cured with medication. Finally, 38% (n=76) of participants disagreed that HIV/AIDS infection always leads to death, even when it is treated with AIDS drugs; 71% (n=122/200) of participants stated that HIV infection always leads to death. A two-way ANOVA analysis indicated a significant main effect for HIV/AIDS risk behaviour \(F (8,191) = 19.212, p =<.001\). Thus, there was statistical evidence that HIV knowledge had an impact on peer norms \(F (39,160) = 7.939, p <.001\) which supports the current hypothesis at stage one.

Yet again, question 2 predicted that perceived susceptibility was positively related to the HIV testing for stage 2 (r=.274** and a significant value of .001)--At stage 2, HIV testing was used as the predictor. In terms of condom use and HIV testing\(^{56}\), 89% (n=45/200) said they would test their HIV status and also use condoms. An ANOVA analysis showed that the relationship between future condom use and HIV testing was statistically significant \(F (2, 196) =6.202, p=.002\). Furthermore, it was noted that 22.5% (n=45/200) said they will test for their HIV status in the next 6 months, 35.5% (n=71/200) said no, and 42% (n=84/200) were unsure. From the analyses, it was evident that about half of the participants (47%; n=48/103) felt confident about using condoms. In addition, 43% (n=44/103) said they feel confident about purchasing condoms without feeling embarrassed. It was also noted that the majority of participants (59%; n=61/103) indicated they feel confident about discussing condom use with their partner. Overall, this information supports Catania’s emphasis on safer sex self-efficacy and condom use as a critical component of the ARRM or in predicting the future risk behaviour of young people.

\(^{56}\) HIV testing behaviour in this context is related to future intention or safer sex behaviour.
In terms question 3, in exploring the relationship between the expanded ARRM variable(s) and a few demographics and ARRM stage variables shows that age was positively related to stage 2 (condom Use Self-efficacy, B=.029, t=2.328, p<.021) and so was education. The older people become, the more cautious they are in their sexual engagement. This result could mean that the older they become, they tend to engage in safer activities. The same implications could be related to higher educational attainment. However, there was no significant relationship between intention to use condoms, sexual communication, and perceptions of sexual enjoyment \([F (30, 169) =1.112, \ p=.328]\). As well, there was no significantly statistical relationship between intentions to use condoms and abstinence \([F (23, 174) =1.319, \ p=.161]\). A one-way ANOVA suggested that there was no statistically significant difference between self-esteem and sexual assertiveness \([F (67, 131) =.915, \ p=.652]\).

To summarize the results of the research questions, there was no significant relationship between abstinence and HIV status \((F (1, 92) =1.214; \ p=.271)\). Question 2 data also suggests that HIV knowledge was not statistically significant in relation to perceived susceptibility to HIV infection \([F (19, 1780) =5.664, \ p=.461]\). This means that people could be well informed about HIV; however, the knowledge acquired may not influence their sexual decisions or result in safer sex practice. Question 3 data demonstrated a mixed effect among the expanded ARRM variables and other variables.
6.3 PART Three Specific Expanded ARRM Predictors

6.3.1 Main effect and interaction of Psychological Factors (The Rosenberg Self-Esteem Scale & Sexual Assertiveness Scale)

Participants are sexually assertive will enact better safer sex practices more than young women who are non-assertive.

In an attempt to contextualize Catania’s original model for the present study, additional constructs (i.e., self-esteem and sexual assertiveness) were introduced. In regards to self-esteem, 60.5% (n=122) mentioned that they have optimal self-respect, while 37% (n=75) wished they could have more respect for themselves. On the issue of self-worth, almost all the participants (87%; n=174) indicated that they think they are a worthy person and are at least on an equal plane with others. Likewise, 86% (174) said they do not feel useless at times. Seventy-three percent (n=147) indicated that they take a positive attitude toward themselves, while 84% (169) reported that, all in all, they are not inclined to think that they are failures. Together, 65% (n=131) of participants reveal an overall satisfaction with themselves. Seventeen percent (n=55) of the participants mentioned that they had initiated sexual contact (including fondling, kissing, vaginal sex) with a man. In addition, 69% (n=156) of the participants revealed that they did not feel comfortable having sex with a man even though they were sexually aroused. There was a negative correlation between self-esteem and future HIV testing (commitment stage; r=-.131*, p=.033).
Further, additional data involving sexual assertiveness (dependent variable) and predictors, Stage 1, resiliency, traditional sex role, peer norm, health belief, self-Esteem, childhood sexual abuse, spirituality, condom use and Africentrism was statically significant [$F(12, 175) = 2.543, p < .001$]. From the same data it was noted that sexual assertiveness was statistically significant with resiliency, condom use and traditional sex role [$B=.232, t=2.899, p<.001$]; [$B=.815, t=2.866, p<.001$]; and [$B=-.355, t=-3.502, p=.001$]. In terms of other factors, self-esteem, spirituality, condom use, social health belief, childhood sexual abuse and sexual risk behaviour had a positively relationship with sexual assertiveness [$B=.110, t=3.81, p=.704$]; [$B=.042, t=4.11, p=.681$]; [$B=.815, t=2.866, p=.005$]; [$B=.101, t=6.38, p=.524$]; [$B=.042, t=2.12, p=.832$]; and [$B=.812, t=1.077, p=.283$].

6.3.3 Main effect and interaction of Interpersonal Factors (Resiliency)

*Participants who are able to perceive their susceptibility to HIV infection are more likely to be resilient.*

Additionally, resiliency among participants was measured in the current study as an interpersonal construct. It turns out that: 69.5% (n=139) strongly agree that they usually manage one way or another to cope; 71% (n=142) of the participants indicated they feel proud that they have accomplished things in life; 35% (n=90) said they have usually taken things in stride; 65.5% (n=131) mentioned that they are friends with themselves; 54% (n=109) said they feel that they can handle many things at a time; 82% (n=162) said they are determined; 69% (n=139) said they can get through difficult times because they have experienced difficulty before; and 88% (n=166) indicated that they have self-discipline. A one-way ANOVA examining resiliency showed no statistically significant difference between resiliency and abstinence [$F(23, 173)$]
In addition, there was no statistically significant difference between resiliency and perceived susceptibility \([F(19, 177) =1.147, p=.309]\) or between resiliency and peer norms \([F(26, 172) =1.1099, p=.347]\). However, there is a statistically significant relationship between resilience and academic achievement \([F(1, 197) =10.421, p=.001]\). Further, there was a statistically significant relationship between resiliency and age \([F(1, 197) =11.627, p=.001]\). Finally, a Pearson correlation showed a positive relationship between resiliency and age \((r=.259*; p<0.001)\); there was also a positive relationship between resiliency and education \((r=.224**; p<0.001)\).

### 6.3.4 Main effect and interaction of cultural factors (Spirituality, Africentricism history of childhood sexual)

Participants who embrace spiritual perspectives and identify Africentric values will commit and enact safer sex behaviours than young women who are not oriented with spirituality or Africentricism. (b) Participants a history of childhood sexual abuse are less likely to negotiate safer sex practices and commit to safer sexual practices than young women who have not experienced childhood sexual abuse.

T-tests were conducted to evaluate the hypothesis that participants who are religious are spiritual. The results indicated that there are no significant difference between these two traditional practices that are so engrained in the Ghanaian culture \([t(146) = .59, p=.66.])\] The results of a subsequent independent t-test \(^{57}\) also revealed no significant differences on the main variables by age \((t = 1.557, p < .05, d = .21)\), household income \([t(146) = .852, p < .05, d = .36])\), education \([t(146) = 1.787, p < .05, d = .18])\), abstinence \([t(85) = .321, p < .05, d = .345])\), and peer norms \([t(146) = .261, p < .05, d = .61])\), and lastly, The overall results of the independent t-

---

\(^{57}\) The categories for education and age were modified for mean comparison analyses in order to obtain greater statistical power.
test showed that participants’ religious background and spiritual practices had no statistically significant relationship with select demographic variables (including, age, household income, education, abstinence and peer norms). In terms of testing additional variables, a Pearson correlation showed a negative relationship between religion and abstinence ($r = -0.137, p = 0.37$). This data could mean that though Ghanaian young women appear religious, they are can be sexually active in spite of their religious teachings. On the other hand, a Pearson correlation analysis indicated that religion is positively related to age ($r = 0.238, p < 0.001$).

**Spirituality**

Additional data showed that spirituality (dependent variable) and predictors, Stage 1, resiliency, traditional sex role, peer norm, health belief, self-Esteem, childhood sexual abuse, condom use and Africentrism was statically significant [$F (12, 175) = 3.719, p < 0.001$]. From the same data it was noted that spirituality was statistically significant with resiliency and condom use [$B = 0.226, t = 3.867, p < 0.001$]; [$B = -0.635, t = -3.019, p < 0.001$]. Albeit, the additional factors, Africentrism, traditional sex roles, sexual risk behaviour and sexual assertiveness had a positively relationship with spirituality [$B = 0.298, t = 1.993, p = 0.048$]; [$B = 0.008, t = 1.06, p = 0.195$]; and [$B = 0.447, t = 1.159, p = 0.248$]; [$B = 0.023, t = 1.411, p = 0.681$].

**Childhood sexual experiences**

Childhood sexual experiences were introduced as one of the expanded ARRM variables. From the analysis, it was noted that 20.5% (n=41) of the participants had been sexually assaulted (i.e., forced vaginal intercourse) as a child (under age 14). Also, it was apparent that 29.5% (n=59) had been invited to engage in sexual activity as a child. There was also a positive
relationship between childhood experiences and social health ($r=.227, p<.001$). The information may suggest that, participants are self-award and more careful in their daily intrapersonal or interpersonal relationships. Table 21 details childhood sexual experiences reported by the study participants:

**Table 21**

*Childhood sexual experiences (n=41)*

<table>
<thead>
<tr>
<th>Sexual Experiences</th>
<th>n</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kissing and hugging in a sexual way</td>
<td>66</td>
<td>26.6</td>
</tr>
<tr>
<td>Another person showing his/her sex organs to you</td>
<td>68</td>
<td>28</td>
</tr>
<tr>
<td>You showing your sex organs to another person</td>
<td>38</td>
<td>15.5</td>
</tr>
<tr>
<td>Another person fondling you in a sexual way</td>
<td>57</td>
<td>23.5</td>
</tr>
<tr>
<td>You fondling someone in a sexual way</td>
<td>39</td>
<td>16</td>
</tr>
<tr>
<td>Another person touched your sex organs</td>
<td>51</td>
<td>21</td>
</tr>
<tr>
<td>Attempted sexual intercourse</td>
<td>49</td>
<td>20</td>
</tr>
</tbody>
</table>
Africentrism

Though they may be living in Africa, it appears that young Ghanaian women have decisive opinions about the Black community just like any young Black woman in North America. For a start, 87% (n=174) indicated that they think Black people should make their community better than it was when they found. The participants also indicated that: the problems of the other Black people are theirs (74%; n=149); they owe something to the Black people who have suffered before them (82%; n=166); they owe something to those who have tried to make things better for them (87%; n=174); and, they are doing a lot to improve their neighbourhood (74%; n=148). The Pearson correlation analysis revealed a positive correlation between Africentrism and place of birth (r=.152, p< 0.001)—this result may mean that participants’ values are primarily shaped by their African culture or cultural location.

Traditional egalitarian sex role

The last cultural construct explored in the current study is the traditional egalitarian sex role. Ninety-nine percent (n=197) of the participants indicated that they think it is just as important to educate daughters as it is to educate sons. Participants also largely disagreed (75.5%; n=164) that women should be more concerned with clothing and appearance than men.
Sixty-six percent (n=132) of the participants mentioned that women should have as much sexual freedom as men. Thirty-two percent (n=62) of the participants disagreed that a man should be more responsible for the economic support of the family than the woman. This finding also shows that most women still believe that a man should be the more financially stable partner. Most of the participants (78.5%; n=159) indicated that having a job is just as important for a wife as it is for her husband. A Pearson correlation analysis showed a positive correlation between traditional sex role and resiliency (r=.143, p<.001). Traditional sex roles were negatively correlated to age (r=-.157, p=.015). Overall, the results suggest that in spite of a participant’s age, traditional gender roles are an area of further discussion.

6.4 PART Four: Testing Stage Specific Hypotheses

6.4.1 Main effect and interaction of Stage 1 Hypothesis (Labeling Stage-HIV Knowledge)

Participants with higher HIV knowledge will be more likely to (a) label their behaviour sexual behaviour, (b) perceive their level of susceptibility to HIV infections and (c) less likely to be influenced by their peers.

The stage 1 or labeling stage indicator is operationalized as the index score of HIV Knowledge. HIV Knowledge is an index of 19 items concerning the participants’ awareness of routes by which HIV can and cannot be transmitted. For example, “A person must have lots of sexual partners to be at risk for HIV.” Higher values indicate more complete knowledge. Multiple regression analyses were conducted to determine whether the manner in which an individual labels their behaviour (e.g., scores on HIV/AIDS Knowledge) predicted their commitment to a safer sex practice (i.e., HIV testing). First, demographic variables (age and
education) were entered as a block into the regression analyses (predictors) at step one to predict labelling (HIV knowledge). In step two, three stage-specific predictors were entered as a block: (1) HIV/AIDS Risk Knowledge, (2) Peer Norm, and (3) HIV Susceptibility. In step three, HIV Testing was entered as a block to predict the relationship between Stage One (Labeling Stage) and Stage Two (Commitment Stage-HIV Testing). In step four, condom use was entered. In step five, the expanded stage-specific cultural predictors (Africentrism, Traditional Sex Role and Spirituality) were entered into the analysis.

The model produced a relationship between labelling and the first set of age and education predictors were significant: \( R^2 = .263, p < .01 \). When only age, education and HIV knowledge is entered, the variance was 0.26 (R square = .069, adjusted R square = .060, \( F(2,197) = 7.301, p < .001 \)). This could mean that age and education together accounted for 6.9% of the total variance for labeling. The overall linear combination of the predictors was significantly related to the labeling stage (HIV Knowledge); however, with the standardized coefficient, it was evident that age was negatively related to labelling (B = -.084, t = -3.253, \( p < .001 \)) while education was positively related to labelling (B = .692, t = 3.798, \( p < .001 \)). Given this finding, it can be stated that education is a good predictor for labelling one’s sexual behaviour.

For the second step, data showed that \( R = .28 \), R square = .076 accounting for an extra (7.6) 7% of variance. The predictors accounted for a significant proportion of labelling behaviour after controlling for the effects of age and education (R change = .007; \( F(2,195) = 3.985, p = < .001 \)). The coefficient results indicated statistically significant relationship between the predictors

---

58 Also called hierarchical regression and predictors are selected based on past work and the researcher decides in which order to enter the predictors into the model (Field, 2013).
59 \( R \) represents the values of the correlation coefficient between the predictor and outcome variables.
60 \( R \) squared is a measure of how much the variability in the outcome is accounted for by the predictors. Of note, the difference between the \( R \) square and Adjusted \( R \) is supposed to be close. I don’t think this second sentence (of note…) is necessary.
respectively. Peer Norm was positively related to labeling (B=.010, t (1.162), p=.001) while HIV/AIDS Risk Knowledge (B= -.002, t=-.152, p=.879) and susceptibility to HIV were negatively related (B=-.010, t=-.139, p=.889).

For step three, age, education, peer norm, risk assessment and susceptibility to HIV were controlled after entering HIV Testing. Similarly, the block accounted for an additional 8.3% of explained variance. The overall regression on labelling was statically significant \( F (5,194) = 3.523, p<.001 \). Likewise, the coefficient data showed a positive interaction between labelling and HIV Testing [Commitment stage--- that is reporting on the unstandardized beta in this context \( (B=.096, t=1.273, p=.204^{61}) \)]. However, the overall result showed a non-significant relationship between HIV knowledge and HIV testing.

In step four and five, the expanded stage-specific cultural predictors (Africentrism, Traditional Sex Role and Spirituality) were entered into the analysis. The addition of these stage-specific variables resulted in an increase in explained variance (10.3%). The overall regression for the Expanded Predictors model on labeling was not statistically significant \( F(7,189 = 2.966; p< .211 \). However, from the coefficient data, one of the individual predictors (spirituality) had a positive relationship with stage one (labeling) in the expanded prediction model. As noted, Spirituality was positively related to HIV Knowledge or labelling stage \( (B=.003, t=.593, p=.554) \), while Traditional Sex Role \( (B= -.001, t=-.174, p=.862) \) and Africentrism \( (B=-.014, t= -1.372, p=.172; \) of note, level of significance is based on the reported Beta) were negatively related to the labelling stage.

Together, the data garnered on the labelling stage suggested that education and age accounted for the bulk of the explained variance. In addition, the regression analysis for the

---

\(^{61}\) When you report on the Beta
labelling stage also showed a statistically significant relationship with HIV testing [Commitment Stage, $F(5,194) = 3.523; p<.01$]. However, it must be reiterated that the majority of the variance was explained by age and education with the expanded ARRM predictors accounting for 10.3% variance.

Table 22

<table>
<thead>
<tr>
<th>Predictors</th>
<th>Correlation between each Predictor and Labelling Stage</th>
<th>Correlation between each predictor and Labelling Stage controlling for all other predictors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>-.03**</td>
<td>-.22**$^{62}$</td>
</tr>
<tr>
<td>Education</td>
<td>.14*</td>
<td>.26*</td>
</tr>
<tr>
<td>Peer Norm</td>
<td>.09*</td>
<td>.08*</td>
</tr>
<tr>
<td>HIV Risk Assessment</td>
<td>-.21</td>
<td>-.01</td>
</tr>
<tr>
<td>HIV testing</td>
<td>.09</td>
<td>.09</td>
</tr>
<tr>
<td>Susceptibility to HIV</td>
<td>-.20</td>
<td>-.33</td>
</tr>
<tr>
<td>Africentrism</td>
<td>-.10</td>
<td>-.10</td>
</tr>
<tr>
<td>Traditional Sex Role</td>
<td>-.28</td>
<td>-.33</td>
</tr>
<tr>
<td>Spirituality</td>
<td>.17*</td>
<td>.44*</td>
</tr>
</tbody>
</table>

Table 23

$^{62}$ *p<.05, **p<.01
**Linear Model of Predictors of Labelling Stage at 95.0% confidence interval reported in parentheses.**

<table>
<thead>
<tr>
<th>Step</th>
<th>Predictor</th>
<th>b</th>
<th>SE B</th>
<th>B</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1</td>
<td>Constant</td>
<td>19.552</td>
<td>0.359</td>
<td></td>
<td>p&lt;.001</td>
</tr>
<tr>
<td></td>
<td>(18.844, 20.260)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Age</td>
<td>-.089</td>
<td>0.026</td>
<td>-.36</td>
<td>p&lt;.001</td>
</tr>
<tr>
<td></td>
<td>(-.136, -.033)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Education</td>
<td>0.692</td>
<td>0.182</td>
<td>0.42</td>
<td>p&lt;.001</td>
</tr>
<tr>
<td></td>
<td>(.333, 1.052)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Step 2</td>
<td>Constant</td>
<td>19.202</td>
<td>0.632</td>
<td></td>
<td>p&lt;.001</td>
</tr>
<tr>
<td></td>
<td>(17.884, 20.378)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Age</td>
<td>-.088</td>
<td>0.026</td>
<td>-.35</td>
<td>p&lt;.001</td>
</tr>
<tr>
<td></td>
<td>(-.132, -.029)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Education</td>
<td>0.680</td>
<td>0.183</td>
<td>0.42</td>
<td>p&lt;.001</td>
</tr>
<tr>
<td></td>
<td>(.008, 0.027)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Peer Norm</td>
<td>0.010</td>
<td>0.009</td>
<td>0.16</td>
<td>p=.281</td>
</tr>
<tr>
<td></td>
<td>(-.008, 0.027)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Susceptibility to HIV</td>
<td>.012</td>
<td>0.009</td>
<td>-.14</td>
<td>p=.276</td>
</tr>
<tr>
<td></td>
<td>(.028, 0.017)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Step 3</td>
<td>HIV Testing</td>
<td>.096</td>
<td>0.075</td>
<td>.18</td>
<td>p=.204</td>
</tr>
<tr>
<td></td>
<td>(.053, .244)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Step 4&amp; 5 Africentrism</td>
<td>-.014</td>
<td>0.010</td>
<td>-.17</td>
<td>p=.172</td>
</tr>
<tr>
<td></td>
<td>(.034, .006)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Traditional Sex Role</td>
<td>-.001</td>
<td>0.005</td>
<td>-.13</td>
<td>p=.862</td>
</tr>
</tbody>
</table>

Note: $R^2=.069$, adjusted $R$ square = .060
Note: Durbin-Watson test for stage 1 analyses is 2.072
6.4.2 Main effect and interaction of stage 2 hypothesis (Commitment Stage-HIV Testing)

Participants with higher perceived susceptibility to HIV infection will commit to (b) HIV testing; and (b) participants who commit to testing their HIV status are more likely to enact future condom use.

The intent to have HIV testing in the next 6 months was utilized as an indicator of the commitment stage. HIV testing is measured with a single yes or no item, “Do you have any plans to be re-tested in the next 6 months.” For the regression analysis, demographic variables age and education were entered as a block in step one to predict commitment. Data indicate that there is a statistical relationship between labeling and age, education and marital status together accounted for 8.9% of the total variance for commitment R square =.089, adjusted R square =.004 \([F(3,196)=1.234, p=.298]\). On the whole, the predictors were not statistically significant. With the standardized coefficient, it was evident that age was negatively related to commitment (B=-.022, t=-828, p=.408). Education was positively related to commitment (B=.006, t=.031, p=.975); while marital status was negatively related to commitment (B=-.130, t=-1.021, p=-.308). On the whole, the variables entered did not significantly predict the commitment stage.

In step two, the stage-specific predictor was condom self-efficacy and it accounted for a significant proportion of HIV testing after controlling for the effects of age, education and marital status, [R change=.090, \( F (3,196) = 5.154, p<.01\). Hence, the block accounted for 9% of
explained variance and a statistically significant relationship. Yet, the coefficient (B=-.018, t=-1.283, p=.201) was negatively related to commitment.

For the expanded prediction model of commitment, age, education, marital status and condom use were controlled after entering self-esteem, sexual assertiveness and resiliency. The block accounted for an additional 11% of explained variance. The overall regression for the expanded predictors model on commitment was not statistically significant \( F(3,195) = 1.505, p=.215 \). The coefficient data showed a positive relationship between self-esteem and commitment (B=.025, t=1.828, p< .001). Further, were negatively related to commitment [Sexual Assertiveness (B=-.001, t=-.412, p=.681); Resiliency (B=-.003, t=-.861, p=.390)] were negatively related to commitment (refer to Table 25).

In summary, the overall regression analysis for the \textit{ARRM Predictor} model was statistically significant; that is, intention to participate in HIV testing predicted future intention to use condoms (Education was positively related to commitment). It was noted that, with the exception of self-esteem, a negative relationship was found in Stage 2 predictors (HIV Testing).

On the contrary, the overall regression for the \textit{Expanded ARRM Predictors} model on commitment was not statistically significant. The findings suggest that a young girl’s self-esteem could possibly impact on her commitment to safer sex practices including condom use -- a finding that is very important for future clinical practice and research.

Below are the results of the multiple regression analyses (Refer to Table 24& 25).

\textbf{Table 24}

\textit{The Bivariate and Partial Correlations of the Predictor at Commitment Stage}
Predictors | Correlation between each Predictor and the Commitment Stage | Correlation between each predictor and the Commitment Stage controlling for all other predictors
---|---|---
Age | -.09 | .04
Education | -12 | -.06
Marital Status | -.10 | -.07
Condom Use | -.26** | -.26**
Self-Esteem | .13 | .13
Sexual Assertiveness | -.06 | -.03
Resiliency | -.06 | -.06

Table 25

Linear Model of Predictors of Commitment Stage\(^64\)

<table>
<thead>
<tr>
<th></th>
<th>b</th>
<th>SE B</th>
<th>B</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>2.779</td>
<td>.390</td>
<td></td>
<td>p&lt;.001</td>
</tr>
<tr>
<td>(2.075, 3.482)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Education</td>
<td>.006</td>
<td>.180</td>
<td>-.14</td>
<td>p=.975</td>
</tr>
<tr>
<td>(-.350, .361)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>-.022</td>
<td>.026</td>
<td>-.098</td>
<td>p=.408</td>
</tr>
<tr>
<td>(-.074, .030)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marital status</td>
<td>-.130</td>
<td>.127</td>
<td>-.075</td>
<td>p=.308</td>
</tr>
<tr>
<td>(-.381, .121)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Step 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Condom Use(^65)</td>
<td>-.006</td>
<td>.011</td>
<td>-.14</td>
<td>p=.624</td>
</tr>
</tbody>
</table>

\(^64\) at 95.0% confidence interval reported in parentheses.

168
### 6.4.3

#### 6.4.4 Main effect and interaction of Stage 3 Hypothesis Enactment Stage

**Condom Use-Safer Sex Self-Efficacy)**

*Participants who enact condom use are more likely to (b) perceive sexual enjoyment and (b) communicate with their partners; (c) participants who commit to testing their HIV status are more likely to enact condom use.*

The third and final stage of Catania’s model was measured by the Condom Use-Safer Sex Self-Efficacy Scale, which asked users to rate their ability to use condoms and avoid HIV exposure during sex. For example, “I feel confident that I would remember to use a condom even if I were high” and “I would feel comfortable discussing condom use with a potential partner before we ever engaged in intercourse.” For the regression analysis, demographic variables age and education were entered as a block in step one to predict enactment. The model produced a relationship between enactment and the first set of predictors (Perceptions of Enjoyment and Sexual Communication); together, they accounted for 12.1% of the total variance for Stage 3  

\[ R^2 = .121, \text{ adjusted } R^2 = .016; F(1,188) = 3.990, p = .047. \]

The results suggest an interaction between the predictors and condom use efficacy (Stage 3), albeit a small variance.

---

\(^{65}\) Commitment Stage (ARRM Stage Two)
Accordingly, it was not surprising that the standardized coefficient, revealed that both perception of sexual enjoyment and sexual communication negatively related to Stage 3, respectively (B=-.385, t=-1.195, p=.234) and (B=-.606, t=-2.194, p=.029).

For the expanded prediction model of enactment, sexual enjoyment and sexual communication were controlled after entering sexual assertiveness, spirituality and self-esteem. The block accounted for an additional 19.4% of explained variance. The overall regression for the expanded predictors model on enactment was statistically significant \[F(5,184) = 5.117, p<.001\]. The coefficient data showed a positive relationship between sexual assertiveness and enactment (B=.061, t=2.669, p<.001). However, spirituality was negatively related to commitment (B=-.076, t=-2.520, p=.013) and self-esteem (B=-.205, t=-2.255, p=.025).

Overall, prediction of the enactment stage from preceding stages was attempted using the indicators of labeling (stage 1) and commitment (stage 2) in addition to the stage-specific indicators of enactment. The final model for the prediction of the enactment stage accounted for 21% of the total variance, a highly significant result \[F (1,196) =4.672, p<001\]^66.

Below are results of the multiple regression analyses (Refer to Table 26 & 27).

**Table 26**

*The Bivariate and Partial Correlations of the Predictor at Enactment Stage*

<table>
<thead>
<tr>
<th>Predictors</th>
<th>Correlation between each Predictor and the <em>Commitment Stage</em></th>
<th>Correlation between each predictor and the Commitment Stage controlling for all other predictors</th>
</tr>
</thead>
</table>

^66 Note: Durbin-Watson=2.071
<table>
<thead>
<tr>
<th>Predictor</th>
<th>β</th>
<th>SE β</th>
<th>B</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sexual Enjoyment</td>
<td>-.14</td>
<td>-.09</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sexual Communication</td>
<td>-.19</td>
<td>-.16</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sexual Assertiveness</td>
<td>.16</td>
<td>.19</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self-Esteem</td>
<td>-.20</td>
<td>-.18</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spirituality</td>
<td>-.12</td>
<td>-.16</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 27

Linear Model of Predictors of Commitment Stage

<table>
<thead>
<tr>
<th>Step 1</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>36.630</td>
<td>2.633</td>
<td></td>
<td>p&lt;.001</td>
</tr>
<tr>
<td></td>
<td>(31.435, 41.825)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>.029</td>
<td>2.328</td>
<td></td>
<td>p=.021</td>
</tr>
<tr>
<td></td>
<td>(19.497, 5.561)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Education</td>
<td>.005</td>
<td>2.858</td>
<td>.664</td>
<td>p&lt;.005</td>
</tr>
<tr>
<td></td>
<td>(4.703)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sexual Enjoyment</td>
<td>-.185</td>
<td>.200</td>
<td>-.069</td>
<td>p=.356</td>
</tr>
<tr>
<td></td>
<td>(-.580, .209)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sexual Communication</td>
<td>-.562</td>
<td>.273</td>
<td>-.154</td>
<td>p=.041</td>
</tr>
</tbody>
</table>

Note: Durbin-Watson = 1.612. For prediction of normality (Field, 2013) the Durbin-Watson must be between 1 and 3. … at 95.0% confidence interval reported in parentheses.
Step 2

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Constant</strong></td>
<td>42.012</td>
<td>3.533</td>
<td>0.001</td>
<td></td>
</tr>
<tr>
<td><strong>Sexual Enjoyment</strong></td>
<td>-0.241</td>
<td>0.199</td>
<td>-0.090</td>
<td>0.228</td>
</tr>
<tr>
<td><strong>Sexual Communication</strong></td>
<td>-0.595</td>
<td>0.270</td>
<td>-0.163</td>
<td>0.029</td>
</tr>
<tr>
<td><strong>Sexual Assertiveness</strong></td>
<td>0.061</td>
<td>0.023</td>
<td>0.185</td>
<td>0.008</td>
</tr>
<tr>
<td><strong>Spirituality</strong></td>
<td>-0.076</td>
<td>0.030</td>
<td>-0.177</td>
<td>0.013</td>
</tr>
<tr>
<td><strong>Self-Esteem</strong></td>
<td>-0.205</td>
<td>0.091</td>
<td>-0.158</td>
<td>0.025</td>
</tr>
</tbody>
</table>

Stage 3 Interaction of above listed measures

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.086</td>
<td>0.011</td>
<td>-0.20</td>
<td>0.340</td>
<td></td>
</tr>
</tbody>
</table>

### 6.4.5 Overall predictive indicators of variables

The overall interaction of predictors was attempted using the stage specific predictors of ARRM. First, the demographics age and education were entered. This was followed by STAGE 1 predictor HIV knowledge, which accounted for a significant addition of 12%. In the third step the rest of the predictors were entered (HIV/AIDS Risk Assessment, 2. Peer Norms, 3. Perceived Susceptibility—Health Belief Model), which, it generally accounted for a non-significant addition of 4.5% % of explained variance. However peer norm was a positive predictor at the stage. The commitment stage indicator (HIV testing) was entered indicator was entered at step
four, and accounted for an additional 8.1% of explained variance. For step five, the enactment stage predictor (condom use) was entered which predicted a non-significant addition of 7%. At the next step the expanded set of stage-specific predictors of enactment were entered (Self-Esteem, Sexual Assertiveness, Resiliency, Spirituality, Africentrism, Childhood Sexual, Traditional Egalitarian, Social Health Belief, and Cultural Mistrust) were entered. The entry of this block of 9 predictors accounted for an additional 19.5% of explained variance which was a moderately significant change in explained variance (F (9, 192) = 1.663; p = .41). However, in the final model a block of demographics, stage-specific predictors of the ARRM and the expanded ARRM accounted for 39.5% of the total variance, a moderately significant result (F(27,198) = 5.926; p<.001).

Conclusion

To summarize the results of the hypotheses and/or stage specific predictors of the ARRM and Expanded ARRM, for STAGE 1, the data garnered on the labelling stage suggested that education and age accounted for the bulk of the explained variance. In addition, the regression analysis for the labelling stage also showed a statistically significant relationship with HIV testing [Commitment Stage, F (5,194) = 3.523; p<.01]. However, it must be reiterated that the majority of the variance was explained by age and education with the expanded ARRM predictors accounting for 10.3% variance. For STAGE 2, the overall regression analysis for the ARRM Predictor was statistically significant; that is, intention to participate in HIV testing predicted future intention to use condoms (Education was positively related to commitment). It was noted that, with the exception of self-esteem, a negative relationship was found in Stage 2
predictors (HIV Testing). Further, the model produced a relationship between enactment and the first set of predictors (Perceptions of Enjoyment and Sexual Communication); together, they accounted for 12.1% of the total variance for Stage 3 \[ R^2 = .121, \text{ adjusted } R^2 = .016; F(1,188= 3.990, p=.047) \]. The results suggest an interaction between the predictors and condom use efficacy (Stage 3), albeit a small variance. The overall regression for the expanded predictors model on enactment was statistically significant \[ F(5,184) = 5.117, p<.001 \]. The coefficient data showed a positive relationship between sexual assertiveness and enactment (B=.061, t=2.669, p<001). However, spirituality was negatively related to commitment (B=-.076, t=-2.520, p=.013) and self-esteem (B=-.205, t=-2.255, p=.025). Together, findings validated the Expanded ARRM as a fairly reliable model that helped in the coherent understanding of psychosocial and cultural issues that increase sexual vulnerability in young Ghanaian women. Overall, this study contributes to efforts to promote the use of culturally appropriate strategies in HIV prevention in Ghana.
To reiterate, figure 2 is my representation of the Expanded Conceptualized ARRM.
Chapter Seven
Discussion and Implications

7.0 Introduction

The purpose of the present study was to determine whether Catania’s (1990) model of behavioural change could be extended to young Ghanaian women. This chapter provides an outcome discussion of the current study and recommendations for future HIV educational programmes and clinical studies on HIV.

7.1 Discussion of Salient Findings of Catania’s Expanded ARRM Model

In this dissertation, there was a significant relationship between future condom use and HIV testing. Consequently, having high levels of HIV knowledge would enhance the practice of safe sex behaviour such as condom use and HIV testing. Further, it was found that higher levels of AIDS knowledge scores had unanticipated effects. For example, age of participants and practice of spirituality did not affect level of HIV knowledge. Based on outcomes of the original ARRM demonstrated in the current dissertation, peer norms had a positive impact on HIV
information—a tool that is relevant to HIV prevention practices (Anarfi, 2001; Cofie et al., 2010; Henry and Fayorsey, 2002). Researchers have noted that when young people are well informed on HIV knowledge, they are less likely to be influenced by negative peers or vice-versa (Anarfi, 2003; Oppong, Oppong, & Odotei, 2003).

There were also a number of unexpected predictions that were not in agreement with Catania’s ARRM. In the current dissertation, HIV knowledge did not predict personal risk of or susceptibility to HIV. The present study validated Moon’s (2002) research, which demonstrated that while participants at Stage 1 may recognize their risk behaviour as a problem, they might also fail to perceive HIV as a personal risk. The lack of perceived susceptibility could prevent individuals from moving to Stage 2 (commitment to behaviour change). However, it is interesting to note that although the interaction effect between Stage 1 and Stage 2 is not always present, participants can still take action to change their behaviour at Stage 3 (e.g., through condom use). In this respect, the results of the present study are inconsistent with the results of Catania et al. (1990), which demonstrated a predictive relationship between labeling and perceived risks (Riley & Baah-Odoom (2010).

Overall, there were mixed findings for both the ARRM and the expanded ARRM; yet, there were indications that certain predictors need to be considered. Considered separately, each of the models (i.e., ARRM and Expanded ARRM) have overarching strengths that provide a way to understand and discuss the issues related to the sexual behaviours of young Ghanaian women. Although it was expected that certain predictors would correlate with certain stages, Catania (1990) has argued that the ARRM is a flexible framework to understand behaviour change. Accordingly, participants can deviate from the pattern of change prescribed by the model. In other words, it is not necessary for participants to strictly follow the path implied by the ARRM.
stages; movement across the stages need not be unidirectional and ordered. Throughout the Labeling Stage, the influence of education, peers, and spirituality suggests that knowledge about AIDS alone is not a potent factor in behavioural change (McGrath et al., 1993). While some results fail to conform to Catania’s results and the proposed hypotheses, the deviations do not provide sufficient reason to devalue the findings of the Labeling Stage. Other research in the area of HIV related knowledge and sexual risk behaviour has also shown discrepant results. For example, Sallar (2001) found that increased knowledge of proper condom use did not predict safer sex practice at the Commitment Stage (or Stage 2) among adolescent Ghanaians. Overall, the results of the present study support the theoretical underpinnings of the expanded mode, which is supported by similar behavioural studies (e.g., Bertrand et al., 1992; McGrath et al., 1993; Schoepf, 1992).

At Stage 2, condom use self-efficacy (predictor) predicted HIV testing; however, the variance was minimal, suggesting that while Stage 1 and Stage 2 were statistically correlated, the relationship was perhaps linked to the educational background of participants.

At Stage 1, education was the only predictor that had a positive correlation with Stage 2; age and marital status did not affect participants’ intentions to obtain HIV testing (i.e., Stage 2). For the expanded model, self-esteem was positively related to the Commitment Stage. Specifically, the expanded model demonstrated potential indicators for behaviour change beyond the individual level. Drawing on Wyatt et al.’s (1997) research on the role of self-esteem as a moderator of sexual risk-taking behaviour, the idea of reinforcing protective values such as self-esteem, positive self-efficacy, assurance, and confidence corresponds well with the practice of safer sex behaviour in young women (Bandura, 1977; Pearson, 2006).
In the Enactment Stage (Stage 3), there was an interaction between sexual enjoyment and sexual communication. Sexual assertiveness was also associated with Stage 3. Sexual assertiveness describes how a young Ghanaian woman can negotiate for safer sex practices in terms of the ARRM model. This information is congruent with what the literature acknowledges as essential in condom use negotiation (Anarfi, 2003; Oppong, Oppong, & Odotei, 2003; Soler et al., 2000). Hence, it is one of the most important HIV prevention strategies in Ghana. As with self-esteem, young women who believe in the efficacy of their own actions are more likely to abstain from sex or negotiate effectively for condom use (Pearson, 2006). Earlier studies (Anarfi, 2003; Oppong, Oppong, & Odotei, 2003; Soler et al., 2000) have demonstrated that self-efficacy through sexual assertiveness in HIV prevention facilitates consistent condom use. To ameliorate the problem of low and inconsistent condom use in young women, Jemmott et al. (1992), Odutolu (2005), and Wyatt et al. (1997) advocate for the promotion of self-efficacy in females.

The overall regression for the expanded predictors revealed unexpected outcome—spirituality was negatively related with Stage 3. Spirituality/religion did not play a big role in the other two stages and it can be argued that people who are highly religious in particular may experience emotional dissonance with regard to enacting any safer sex behaviour that the church does not condone – even in modern societies. Spirituality is an important practice in Ghanaian society, particularly among women (Anarfi, 2003; Odotei, 2002; Oppong &Agyei-Mensah, 2004). It seems probable that because premarital sex is taboo, spiritual or religious females may not possess adequate knowledge or self-efficacy to practice safer sex.

As such, findings of the present study were inconsistent with Oppong, Oppong, and Odotei (2003), who found that spiritual and religious beliefs in young Ghanaian women are protective factors in sexual risk prevention. Perhaps this finding can be attributed to the
identification of abstinence as a protective behaviour. All the same, the present study is consistent with Addai (2000) who noted that women who have never-married and belonged to liberal religious groups were sexually active. More recent findings also support this study’s results. For instance, Gyimah et al. (2010) found that most young Ghanaian women attend church and are somewhat religious but their religious affiliation is not necessarily associated with any specific protective behaviour. In a modern and urban Ghanaian community such as Accra, certain sex-related norms make sexual intercourse in premarital sexual relationships more socially acceptable in spite of the pervasive religiosity among Ghanaians.

For all aspects of the ARRM and Expanded ARRM, the overall predictions associated with the demographic correlates, education, peer norms, self-esteem and sexual assertiveness.

Therefore, with these noted outcomes, it is possible to support the expansion of the ARRM to include additional variables, especially sociocultural and psychological variables as advocated by Anarfi (2003), Odotei (2002), and Oppong and colleagues (2004). A major contribution of the present study is the implications for future HIV behaviour change research. Empowering young women and fostering their self-esteem seems to be a potentially effective approach to improving condom-use negotiation skills. Thus, the Expanded ARRM proved more applicable than Catania’s ARRM with this population.

### 7.2 General Discussion of Salient Findings

#### HIV Knowledge

HIV knowledge among Ghanaian youth is widely documented (Akwara et al. 2005; Tenkorang, Adjei & Gyimah, 2010; UNAIDS, 2003). Generally, the findings indicate that HIV knowledge is fairly high among participants. The study also shows that there is a significant
relationship between education and HIV knowledge, suggesting that education has an impact on
HIV knowledge (e.g., modes of HIV transmission and prevention strategies). Bankole, Singh, Woog, and Wulf (2004) affirm that young women with high levels of awareness and knowledge about HIV/AIDS are more capable of assessing their risks compared to those with low levels of awareness and knowledge about how HIV/AIDS is transmitted and prevented. The findings of the present study provide further validation of the existing HIV knowledge literature (e.g., Anarfi, 2006; Gyimah, 2010; Ridley & Baah-Odoom, 2010; Takyi, 1993).

Further, the study revealed that there was no statistically significant relationship between age and HIV knowledge, suggesting that the differences in age among participants did not impact their level of HIV knowledge. The study showed that HIV knowledge on specific issues was somewhat limited. The Ghana Demographic Health Survey found that women in Ghana often have limited knowledge on HIV transmission and prevention including consistent use of condoms (GDHS, 2009). Wutoh and colleagues (2006) also concluded that HIV/AIDS knowledge among young Ghanaian women is high, a finding consistent with this study. However, Wutoh et al (2006) explained that though this finding may look promising for HIV prevention work in Ghana, there is no correlation between HIV knowledge and condom use. Zellner (2003) on the other hand, acknowledged that education is more likely to have an impact on HIV knowledge and safer sex practices among young people. The strong effect of education on HIV knowledge is encouraging because the findings of the present research certainly support the role of female education in HIV prevention in Ghana. Education empowers young women to better understand their sexual behaviours and HIV-related challenges. Education of women and girls not only enables them to better understand some of the critical issues related to HIV transmission and prevention but they also become economically and sexually empowered.
Sexual Risk Behaviour

Participants in the present study were sexually active, and reportedly engaged in several sexual activities including vaginal-penile, oral, and anal sex, as well as fondling and kissing. A few participants reported more than one sexual partner. Concern about multiple partners have been expressed by researchers (e.g., Anafi, 2002; Mill & Anarfi, 2002; Oppong, Oppong, & Odotei, 2006) who have found that young women in Ghana engage in sexual activities at an earlier age and are often compelled to engage in sex in exchange for gifts or money. Whereas multiple sexual relationships may increase the likelihood of HIV infection, other socio-cultural issues such as gender, unequal power relationships, and poverty cannot be isolated.

Condom Use

It is interesting to see that most of the young women in the study were aware that condom use is one of the most effective strategies in curbing the spread of HIV/AIDS infection. The investigation not only showed high knowledge of condom use among young Ghanaian women but also low levels of actual condom use. The findings confirm those of Anarfi (2006), who discovered that Ghanaian youth used condoms infrequently and to some degree did not appreciate the personal usefulness of condoms. The present study found that participants prefer purchasing condoms from a pharmacy or drug store rather than from youth centres and/or community clinics for fear of being embarrassed and stigmatized by health care providers as being promiscuous. It was also clear that only half of the participants who used condoms had conversations with their partners about condom use. Inconsistent condom use was noted among participants, a behaviour that supports concerns that the prevalence of condom use in Ghanaian
women remains low (Anarfi, 2006; Mill & Anarfi, 2002). The current finding affirms the results of Baiden and Rajulton (2011), which showed that speaking with a partner about how to avoid AIDS and the perceived benefits of using condoms were remarkable factors in predicting condom use. At stage 3, condom use correlated with HIV testing in participants as confirmed by studies from Democratic Republic of Congo (Congo Zaire) and Rwanda (Heyward et al., 1993; Keogh, Allen, Almedal, & Temahagili, 1994 as cited in Mill & Anarfi, 2002) who found that Voluntary Counselling and Testing (VCT) resulted in increased rates of condom use. Given this data, intervention and prevention strategies can thus focus on empowerment in terms of condom negotiation skills in women.

**Perceived Risk**

Results concerning perceived susceptibility were unexpected although fairly consistent with Anarfi (2006) and Mill and Anarfi (2002), who found that HIV knowledge did not correlate with high levels of perceived susceptibility to HIV infection. The general consensus affirms that the age of the participants also did not affect their level of susceptibility. Put simply, almost all the participants perceived themselves as susceptible to HIV infection. Tenkorang, Adjei, and Gyimah (2010) also acknowledged that female youth who perceive themselves to be at risk of contracting HIV are more likely to engage in safer sexual behaviours such as abstinence and condom use. This finding suggests that perceived susceptibility is positively related to abstinence, condom use, and/or HIV testing. To a larger extent, perceived susceptibility to HIV plays a significant role in creating and perpetuating safer sex practices in young women because it may act as an important intervening variable between the recognition of risky behaviour and one’s actual decision to engage in risky sexual behaviours.
HIV Testing Behaviour

One core aspect of preventing HIV in Africa is the implementation of HIV Voluntary Counselling and Testing (VCT), a practice that needs to be enhanced and made more accessible (Matovu & Makumbi, 2007). The present study revealed that very few (n=63/200) participants had actually participated in HIV testing. The majority of participants did not think they had HIV and thus believed there was no need to get tested. It is important to note that a few participants who got tested did so because they had not used condoms during sex and felt at risk. This revelation is quite worrisome, and is consistent with Adomako’s (2006) study that suggests that most young women do not know their current HIV status. Even though a few of the young women in the present study got tested because it was required for medical purposes or for reassurance to reduce personal anxiety about the disease, the testing rate was very low -- however, not entirely different from the general Ghanaian population. This data confirms that the majority of Ghanaian women have not been tested for HIV, which may be due to social stigma associated with having been tested, and may lead to marital conflict, blame, fear of rejection or unfaithfulness, and violence (Mill, 2000b).

Spirituality/Religion

Ghanaians are typically described as religious, which has been claimed to have an impact on the sexual behaviour of young Ghanaian women in previous studies (Tenkorang, Adjei, & Gyimah, 2010). According to Addai (2000) and Takyi (2003), in traditional Ghanaian society there are explicit religious norms and practices to regulate sexual behaviours including religious and societal approval of marriage and sexual initiation. The question remains, do religious
beliefs and practices have tremendous impact in shaping the sexual behaviour of the modern young Ghanaian woman as we are made to believe? The current study shows that religion and spirituality did not significantly influence abstinence practice and peer norms. Gyimah et al. (2010, p.15) concluded that “religious differences in sexual decision-making in Ghana can be attributed to socio-economic and location factors rather than to intrinsic factors associated with religion.”

7.3 Strengths, Limitations and Recommendations for Future Research

A culturally comprehensive investigation like the present study is not devoid of challenges. There are some limitations that clearly need to be mentioned. First, although the sample size in the present study was large, it was limited to young Ghanaian females in Accra with formal education. The participants were mostly from high SES backgrounds and recruited from a highly urbanized Ghanaian community, a sample that does not adequately represent the overall population of young Ghanaian women. Second, the present study allowed for the collection of a large and multi-faceted data set; however, a shorter survey may have been more manageable and would have reduced some of the data challenges encountered in the present study. Third, the generalizability of the findings may thus be somewhat limited as all the participants were recruited from educational institutions in Accra. Fourth, as is common among exploratory studies about potentially sensitive topics, it is possible that participants in this study did not genuinely report their behaviours and practices.

Fifth, the questionnaires used in the study were developed within Western European contexts, with undetermined cross-cultural context and relevance. Further, there is no independent evidence of the reliability and validity of the questionnaires that were specifically
designed for the present study. Without a doubt, the reliance on self-report could be somewhat problematic due to participants’ social desirability effects, particularly with respect to such a sensitive topic. Nevertheless, self-report is extensively used in HIV research and deemed very appropriate in this context. Typically, the ARRM stage 3 is conducted in longitudinal studies where outcomes of the predictors are observed and more movement across the stages is explored over a period time. Although a positive relationship between the stages and some of the predictors were observed, a central failing of the study’s outcome is the minimal variance explained by the proposed predictor variables. Overall, the shortcomings of this study can be attributed to the methodological and theoretical challenges inherent with working in a cross-cultural setting. Any conclusions drawn from these findings should be considered with caution. As such the study cannot necessarily be generalized to the larger Ghanaian female population. Lastly, inconsistency in behaviour can be challenging to measure, especially when you are using a model that has not been validated within a specific culture. In spite of the study’s limitations and poor predictive value for some of the predictors, efforts to mitigate these challenges (e.g., community engagement, pilot testing of measures and retaining the cultural sensitivity of the research) were part of the research protocol.

7.4 Theoretical Contributions

Findings of the present study should not necessarily be interpreted as a failure of the model. The explanatory value of cultural and psychological relevance was evident. The data also represents a major contribution to the existing literature regarding HIV prevention intervention in Ghana—affirming the relevance of including culturally sensitive tools in psychosocial research. Yet again, it is important to note that most of the measures used in the present investigation have
strong psychometric properties, as demonstrated in the reliability checks conducted for the present study; this component of the study bolsters confidence in the findings. Newly developed questionnaires were constructed in consultation with and under the supervision of the steering and dissertation committee. A systematic procedure of data collection was utilized, and the data analyses were rigorously audited. Although multiple regression analyses tend to be very sensitive to outliers, in the present investigation no extreme outliers were observed. Beyond this, the multiple regression analytic technique was selected because of the ease of interpretation of the predictors and provided less room for error. In future studies, structural equation modeling using multiple indicators for latent variables could also be used to better understand the predictors and movement across the stages. The ecological framework or analytical approach is also recommended since it is deemed more suitable for culturally relevant studies. The findings also highlight the relevance of education as an important tool in HIV prevention in young women in Ghana and Africa.

7.5 Educational, Clinical and Policy Implications

Policies have shaped and influenced HIV prevention program in Ghana—bilateral or international agencies have funded most HIV programs in Ghana, particularly from a needs assessment approach with little emphasis on strengths-based perspective. With continuous funding of needs assessment approaches, it will be difficult to identify the potential gem in or the resourcefulness of young Ghanaian women (Hessburg, Awusabo-Asare, Kumi-Kyereme, Nerquaye-Tetteh, Yankey, Biddlecome & Croce-Galis, 2007; SenGupta, Hopson & Thompson-Robinson, 2004). If the goal is to reduce HIV infection in young women in Ghana, then it is important to expand and improve services for young women. Given this, service providers
should continue to work with stakeholders and funders on preventive programs that will identify individual and communal strengths. The present results reveal several opportunities for intervention and appropriate approaches to enhance education, clinical support, and policy implementation. Programs that encourage women to reduce their number of sexual partners and discourage them from exchanging sex for gifts or money should be incorporated into HIV prevention programs. Continued messages and campaigns on consistent condom use with all types of partners are highly encouraged.

Empowerment within the Ghanaian cultural context could involve a process of continuous negotiation for a woman to experience substantial changes in her life based on contextual needs or individual desires including economic growth, respect, confidence, negotiation skills, rising social status and equitable power (Ali, 2014; Tsikata & Darkwah, 2014; Crissman, Adanu & Harlow, 2012; Ayidoho & Manuh, 2010). Given the complexities of her role within her community, the Ghanaian woman is likely to benefit from psychological empowerment (relational) that helps her to better navigate her community and processes of change (Christens, 2012). Thus, empowering the young Ghanaian woman could mean that she is more likely to understand or unravel the discourses surrounding the contextual attributes of cultural diversity such as power, class, and patriarchy. In order to foster a sense of empowerment, it is important that these contextual characteristics are discussed at the both the macro and micro levels in Ghana. Together, such efforts may help improve self-worth in young people and reduce the low and inconsistent use of condoms among Ghanaian women. Research has demonstrated that HIV prevention programs oriented to specific cultural groups effectively 

68 Like many empowered women, the Ghanaian woman does “not openly challenge and contest norms but negociates things in a more subtle way often guided by traditional and cultural norms. She has carefully learnt some of the strategies to survive locally while striving for change” (Ali, 2014, p. 124).
promote the utilization of safer sex strategies by that particular cultural group (Anarfi, 2003; Vinh-Thomas, Bunch & Card, 2003). The Ghanaian experience has shown that the earlier focus on individual behaviour change is inadequate in the context of poverty and gender discrimination. It is therefore imperative for us to expand the existing successful programs to include the wider context of family, community, society and, especially, the empowerment of young Ghanaian women to take responsibility for themselves.

In consensus with other Ghanaian researchers (Anarfi, 2003; Gyimah et al., 2010), increasing the availability of youth-related HIV/AIDS programs and services is critical to increasing prevention activities and safer sex practices. Further, in order to tackle the continued infection of girls and women, it is necessary to address gender inequality issues that promote vulnerability to infection. That is, promoting programmes for economic empowerment, education, and promotion of rights and women. What then is left to say about policy implications in Ghana? To answer this question, the government of Ghana and other bilateral agencies need to pay attention to what young women in Ghana say about their vulnerability to HIV infection or explain the strategies that they believe to be gender and culturally appropriate. Political leadership is critical in setting an agenda to fight HIV/AIDS related issues among Ghanaian women. The advantage political leadership lends is the ability to unify the country and communities behind local health needs and to align resources both locally and internationally. Hopefully with findings from the present study, the Ghana youth policy can be expanded to reflect on sexual assertiveness of young Ghanaian women.
7.6 General Recommendation for HIV prevention in Ghana drawn from a Culture and Gender-Sensitive Health Promotion Approach

- There is likely need to include men of all ages in HIV prevention education in Ghana for improved outcome. Men tend to hold power in most heterosexual relationships (Oppong, Oppong, & Odotei, 2003), therefore educating them on safer sex practices with women will likely reduce the level of HIV infection in women. In plain words, educating men and women can help partners share a common language that may be necessary for safer sex practice and negotiation. HIV sexual education of men must be seen as an ongoing intervention rather than a one-off aspect of HIV service provision.

- Given the important role of funding agencies in HIV prevention in Ghana, it is imperative that stakeholders continue to explore equitable partnerships in developing culturally appropriate HIV programs, tools and strategies—a recommended approach for developing a culturally sensitive and HIV/AIDS prevention and evaluation program is outlined in Vinh-Thomas colleagues’ (2003) study, A Research-Based Tool for identifying and Strengthening Culturally Competent and Evaluation-Ready HIV/AIDS Prevention Programs.

- The psycho-cultural assessment of people at risk to HIV infection, particularly women, is significant. As mentioned earlier, issues such as self-esteem, poverty, gender roles and perceive susceptibility to HIV infection can disrupt the best of
intentions for preventing HIV infection. Hence, support for addressing these concerns through communal engagement and the individual empowerment of the young Ghanaian woman, must be a vital component of HIV service delivery in Ghana.

- There is a critical need for training mental health professionals in HIV counselling, assessment and intervention research. The professionals can play a key role in helping the Ghanaian community develop and implement relevant psycho-cultural tools in Ghana.

- The planning of HIV services and programs for young women in Ghana must involve young Ghanaian women as well as young men who can speak to the challenges related to safe sexual behaviour in young people.

- Frequent and free HIV testing or screening should be encouraged and viewed as critical component of HIV prevention in Ghana.

- Condoms should be made freely accessible to both young men and women across all institutions, community centres and youth clubs.

**Conclusion**

From the present investigation, it is apparent that individual movement across the three ARRM stage is influenced by several factors (including, susceptibility, peer norm, self-esteem level, sexual assertiveness level and HIV status) that could make a young Ghanaian woman more vulnerability to HIV infection. Consequently, the finding affirms factors such as childhood
sexual abuse, self-esteem, spirituality, Africentrism and resiliency can influence the individual sexual behaviours. The present investigation explores young Ghanaian women’s vulnerability to HIV infection by examining the predictors of the original ARRM as posited by Catania and an Expanded ARRM model that includes cultural, interpersonal, and psychological factors as hypothesized by the current researcher.

In spite of the limitations of the study, there were several encouraging outcomes that supported the application of the Expanded ARRM to Ghanaian women. Ghanaian women continue to be knowledgeable about HIV transmission. Their level of self-esteem and assertiveness are core areas that can be incorporated into gender intervention strategies in Ghana. Education of women continues to be an important pursuit; thus the Ghanaian government should support women in pursuit of higher education through scholarships and other financial waivers. It is important for service providers to educate men and boys on HIV prevention strategies such as condom use. Men play important roles within the Ghanaian culture and so, including them as partners in HIV education cannot be take too lightly. In summary, the study contributes significantly to the limited literature on HIV sex behaviour of young Ghanaian women in Ghana. This study supports the need for greater attention to HIV psycho-social and/or behavioural studies for this population. The study also guides clinicians in understanding the cultural components of HIV risk prevention in young Ghanaian women. Needless to say, the limitations discussed in the earlier section should be considered when interpreting or replicating the findings of the present research. In closing, “It is imperative for mental health professionals to actively recognize, appreciate and incorporate culturally related contextual factors into their practice and research” (SenGupta, Hopson & Thompson-Robinson, 2004, p.11).
References


health surveys data. Calverton, MD: ORC Macro.


Anarfi, J.K. (2003). To change or not to change: obstacles and resistance to sexual behavioural
change among the youth in Ghana in the era of AIDS. *Institute of African Studies Research Review* 19 27-45


13. New York: The Alan Guttmacher Institute


stop the AIDS epidemic? Will it help people infected with HIV? Invited Address:

among Adolescents in Ghana http://hdl.handle.net/1974/5951

transitions over two consecutive 6-month periods: a test of the theory of planned
behaviour in a population-based sample. British Journal of Health Psychology, 6, 135–
150.


(Second Edition). U.S. Department of Health and Human Services, National Institutes of
Health, Available at www.thecommunityguide.org.

Hall, D. T. & Lawrence, B. S. (Eds.), Handbook of career theory (89-109). Cambridge:
Cambridge University Press.

Datus Complex, (2012). DatusInternational Senior High School is part
of Datus International Complex of Schools. Retrieved from
www.ghanavisions.com/keywords/datus-complex

Alcohol's effects on sexual decision making: An integration of alcohol myopia and
individual differences. Journal of Studies on Alcohol and Drugs, 68, 843–851


Ghana Demographic Health Survey (2008). Accra, Ghana


victimization, and AIDS-risk. *AIDS Educational Preview* 8(1):44-57


change versus an integrated psychosocial theory as a basis for developing effective behavior change intervention. *AIDS Care, 12*, 357–364.

doi:10.1080/09540120050043016


Mill, J. E. (2000a). I’m not a ‘Basabasa” woman: An explanatory model of HIV illness in


spread of AIDS in Ghana, West Africa: knowledge of AIDS, sexual behavior, prostitution, and traditional medical practices. *Journal of Acquired Immune Deficiency Syndrome* 4, 914-919


Ott, M.A. & Santelli, J.S. (2007). Abstinence and abstinence-only education". *Current opinion in*


Polacsek, M., Celentano, D., O’Campo, P., & Santelli, J. (1999). Correlates of condom use


Sallar, A. M. (2009). Correlates of misperceptions in HIV knowledge and attitude towards
People Living with HIV/AIDS (PLWHAs) among in-school and out-of-school adolescents in Ghana. *African Health Sciences, 9*: 82-91


San Francisco AIDS Foundation (1886). *Designing an effective AIDS risk reduction program for San Francisco: Results from the first probability sample of multiple/high risk partner heterosexual adults.* San Francisco, CA, Research and Decision Corporation, Communication Technologies.


Staras, S.A. S, Cook, R.L., & Clark, D. B., (2009). Characteristics and Sexually Transmitted Diseases among Adolescents and Young Adults. Sexually Transmitted Diseases, 4


Appendix A: Acronyms

AIDS: Acquired Immune Deficiency Syndrome
ART: Anti-retroviral Treatment
ASO: AIDS Service Organisation
CBO: Community Based Organisation
DHS: Demographic and Health Survey
FGD: Focus Group Discussions
GDHS: Ghana Demographic and Health Survey
GDP: Gross Domestic Product
HIV: Human Immunodeficiency Virus
NGO: Non-governmental Organisations
PLWHA: People Living with HIV/AIDS
PMTCT: Prevention of Mother-to-Child Transmission
PPAG: Planned Parenthood Association of Ghana
STI: Sexually Transmitted Infection
SPSS: Statistical Programme for Social Sciences
TB: Tuberculosis
UNAIDS: The Joint United Nations Programme on HIV/AIDS
UNFPA: The United Nations Population Fund
Appendix B: Ethics Certificate – University of Toronto
Appendix C: Ghana Health Service Ethical Review Committee

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

My Ref. : ERC-
Your Ref. No.

Edna Aryee
University of Toronto
Department of Psychology
Toronto

Dear Edna

2nd ETHICAL REVIEW COMMENTS

This letter acknowledges receipt of the revised version of the initial ERC comments on the above-mentioned protocol

Though most of the concerns have been address there are still some issues that need to be straightened out in the protocol.

1. Technical Issues of Concern

i. No letter of support from PPAG attached to the proposal.

ii. Study Title
The title change must reflect throughout in the document – this is not the case when you look at the title printed on each of the pages. Please ensure that changes reflect in all pages in the protocol.
2. Ethical Issues of Concern

i. All issues have been addressed. Please give a copy of the letter of information as well to the respondent since it is on that you have the contact information

ii. Provide budget for the study.

iii. ERC checklist not included. Please provide one with new study title.

You are requested to modify the proposal and address the issues accordingly. Two copies of the revised protocol together with a cover letter should be resubmitted to the Committee for consideration.

Hannah Frimpong
Administrator
Ghana Health Service Ethical Review Committee
For: Chairman
Appendix D: Survey Questionnaire

Introduction

Before we begin, I’d like to assure you that everything we speak about today is confidential and every effort will be made to protect your privacy and confidentiality. If you have any question please let me know. However, there are a few exceptions to this:

1. If you tell me that you have plans to hurt or kill yourself or anybody else.
2. If you tell me information about a child who is currently being abused or who is at risk for being abused.
3. If you are not eligible for this study, we will provide you with resources that might be a better fit for you.

Do you have any questions or concerns before we begin? Do you agree to continue?

(1) Vocabulary List: Introducing the terms used in this study to participants

At different times during the rest of the study, we'll be talking about sex. There's no way to talk about sex other than to talk about it. So, before we go ahead, I'd like to go over some terms to make sure we understand each other. As we go along, if there are any words or questions that aren't clear, please let me know. People have different words they use, and I want to make sure I use words that work for you. Let's start with the basics.

1. The penis is the man's sex organ; some people call this a cock, prick, or dick.
2. The vagina is part of a woman's sex organs - it's the part of her body where she puts a tampon, and where a baby comes out. Some people call this a box, or cunt, pussy or temple.
3. In the vaginal area is the clitoris. This is outside the vagina, between the vaginal lips, and looks like a little button. Some people call this a clit.
4. **Manual sex**, when you touch your partner's penis with your hand or he touches your vagina or clitoris with his hand; *(for example, some people call this jerking each other off or masturbating each other).*

5. **Vaginal intercourse**, when your partner puts his penis in your vagina; *(for example, some people call this fucking or screwing)*

2. **Oral sex**, when you put your mouth or tongue on your partner's penis; *(for example, some people call this fellatio, or going down; a blow job)*

3. **Oral sex**, when your partner puts his mouth or tongue on your vagina or clitoris; *(for example, some people call this cunnilingus, or going down; sucking off)*

4. **Rimming**, when your partner puts his mouth or tongue on your rectum/anus or you put your mouth or tongue on his rectum/anus;

5. **Anal intercourse**, when your partner puts his penis in your (rectum/butt); *(for example, some people call this butt fucking).*

6. ‘**Outercourse**’ is anything other than oral, vaginal, or anal sex.

a. *(This includes you touching your partner's penis or him touching your vagina or clitoris, or massaging each other's bodies.)*

7. **Safer sex** includes outercourse. **Safer sex** also includes vaginal, oral, and anal sex when you use a condom or a dental dam.

8. If at any point you do, please let me know. Questions in the questionnaire are worded formally.

9. Do you have any questions?
(2) Background Information

1. What is your date of birth: __________________________________________________

2. What is your age? ___________________________________________________________

3. Were you born in Ghana?
   1. Yes □
   2. No □ If No, what is your country of birth………………How long have you been in Ghana………..

4. What is your primary language? *(Please check all that apply)*

5. What is the highest level of education you have completed?
   *(Please write the number of completed years in school)*………………………………………….

   *Indicate your current year/level

1. Junior High School *(Please circle the correct answer).*
   1) 1st year
   2) 2nd year
   3) 3rd year

2. Senior High School *(Please circle the correct answer).*
   1) 1st year
   2) 2nd year
   3) 3rd year

3. Bachelor’s degree *(Please circle the correct answer).*
   1) 1st year
2) 2\textsuperscript{nd} year
3) 3\textsuperscript{rd} year
4) 4\textsuperscript{th} year

4. Postgraduate
   1) 1\textsuperscript{st} year
   2) 2\textsuperscript{nd} year

6. Are you currently out of school (Please circle the correct answer).
   1. Yes
   2. No

7. Are you currently working? (Please circle the correct answer.)
   1. Yes
   2. No

8. What is your current marital status? (Please circle the correct response(s))
   1. Single
   2. Married
   3. Widowed
   4. Separated or Divorced
   5. Cohabiting/Living together

9. Are you involved in sexual health education activities? (Please circle the correct response(s))
   1. Peer educator
   2. Youth Leader
   3. Facilitator
4. Out of school youth

5. Other (list what you are doing………………………………………………….)

10. Do you have any children? *(Please circle the correct response(s)*

   1. No
   
   2. Yes. If yes how many…………………..?

11. Have you ever used any street drugs? *( e.g., marijuana, glue e.t.c)*

   1. Yes      If Yes, which type ………………….

                  How many times……………………………..

   2. No

12. Have you ever used alcohol?

   1. Yes      If Yes, which type ………………….

                  How many times……………………………..

   2. No

13. Where do you live? *(Please circle the correct response)*

   1. In my family or parents’ home/house
   
   2. In a rented house/apartment
   
   3. In my own apartment
   
   4. In a friend’s house
   
   5. On the streets
   
   6. In a shelter
   
   7. Other……………..(please specify)

14. How long have you been living there?

Years……………………….Months…………………………..
15. Who do you live with? *(Please circle all that apply)*

1. Living alone
2. One parent
3. Both parents
4. Grand parents
5. Siblings
6. Friends
7. Spouse/partner
8. Children
9. Regular sex partner
10. Roommate
11. Living in an institution hostel or campus
12. Relatives
13. Others *(Please specify………………………………………..)*

16. What is the annual income of your parents?

1. Ghana cedis 10,000-15,000
2. Ghana cedis 15,000-20,000
3. Ghana cedis 20,000-30,000
4. More than 30,000 Ghana cedis

17. Are you currently living with HIV/AIDS?

1. Yes If Yes, How long have you lived with it?..............................................
2. No

18. Are your parents, family member(s) or friend(s) currently living with or lived HIV/AIDS?
1. Yes
2. No

19. Are you an HIV/AIDS orphan?
   1. Yes       If Yes, How long have you been an HIV/AIDS orphan?............................
   2. No

20. What is your current religious affiliation? *(Please circle the correct response(s)*
   1. Pentecostal/charismatic
   2. Orthodox Muslim
   3. Traditional religion
   4. Atheist/Agnostic
   5. Others *(please specify……………………………………………………………………...)*

(3) HIV Knowledge Questionnaire

Indicate whether you think each statement is True or False. *(Please circle the correct response)*

1. Blood, semen, vaginal fluids, and breast milk are the only fluids that can transmit HIV.  
   True      False

2. Semen has a higher concentration of HIV than blood.  
   True      False

3. HIV antibodies can take up to 10 years to show up.  
   True      False

4. Most babies born to HIV positive mothers are not HIV positive.  
   True      False

5. Anal sex has a higher risk of transmitting HIV more delicate than oral sex.  
   True      False

6. Keeping good physical condition is the best way to prevent getting the HIV  
   True      False
7. A person can get HIV by kissing or hugging someone. True False
8. Condoms reduce the risk of getting the HIV . True False
9. Most people with the AIDS virus quickly show signs of being sick. True False
10. Having sex without a condom increases a person’s risk of getting HIV. True False
11. A person must have lots of sexual partners to be at risk for HIV. True False
12. People who get the AIDS virus through needle sharing cannot spread the virus during sex. True False
13. There is a cure for HIV. True False
14. You can get HIV from oral sex. True False
15. A woman or man can always tell if she/he’s gotten infected with a sexually transmitted infection. True False
16. An untreated sexually transmitted infection can cause a woman to become infertile. True False
17. An untreated sexually transmitted infection can destroy the sperm of a man. True False
18. Most people who are infected with HIV have no symptoms. True False
19. You can always tell by looking at a man’s penis and testicles whether he is likely to have a sexually transmitted infection. True False

(4) HIV/AIDS Risk-Behaviour Knowledge Questionnaire

Please circle True or False for your answer

1. Most people become sick quickly after getting the HIV virus. True False
2. Women can’t get AIDS if they only have sex with other women. True False
3. People who can give you the HIV virus always look sick. True False
4. Men can’t get AIDS if they only have sex with women. True False
5. Washing after sex stops the virus. True False
6. Only gay (homosexual) men get the virus. True False
7. You must have many sex partners to get virus. True False
8. Sex with someone who has used injected drugs creates risk for transmission. True False
9. Using condoms (rubbers) can help prevent HIV transmission. True False
10. Unborn babies can get HIV from their mothers. True False
11. You can get the HIV virus through one sexual contact. True False

(5) HIV Testing Information

Now I'd like to ask about HIV (AIDS virus) testing. Please remember that the questions are part of a research study, and all of your answers are confidential. Please you can circle your answers.

1. Did you ever have a test for the HIV virus? (Please circle the correct response)
   1) Yes (please continue)
   2) No [GO TO 5 and please continue]
   3) Don’t know [GO TO 6 and continue]

2. How many times have you been tested? (Please circle the correct response)
   (1) Once …. (2.) Twice….. (3.) Three times…… (4) More than 3 times……

3. When was the last time you got tested? Month …..Year …..
4. Why did you decide to be tested for HIV? (Please circle all that apply)

_ 01 Felt at risk for HIV from own or partner's behavior.

_ 02 Not using condoms or condoms broke.

_ 03 Testing was required by visa, insurance company, job, school, armed services, prison or foster care.

_ 04 Testing offered as part of other services such as prenatal care or blood donation.

_ 05 Friends were getting tested.

_ 06 Deciding about having children.

_ 07 Wanted to stop using condoms.

--- 08 Have a new partner.

_ 09 For reassurance / to reduce anxiety.

_ 10 Had more information about HIV or the test.

_ 11 Had symptoms.

_ 12 Partner had symptoms.

-- 13 Influenced at the youth centre.

_ 14 Other…………..
5. Even though you haven't been tested, have you ever gone for HIV test counseling? (*Please circle the correct response*)

1. Yes  
2. No  
3. Don't know  
4. Missing

6. Is the result Positive……..Negative…….. Unsure……….. (*Please circle the correct response*)

7. What has led you not to get tested?

______________________________________________________________________________

______________________________________________________________________________

______________________________________________________________________________

______________________________________________________________________________

______________________________________________________________________________

______________________________________________________________________________

8. Do you have any plans to be re-tested in the next 6 months? (*Please circle the correct response*)

1. Yes  
2. No  
3. Not sure

8. Did you get your test results? (*Please circle the correct response*)

1. Yes  
2. No  
3. Awaiting results
11. Did you share your test results with your main partner?
   1. Yes  2. No  3. Not sure

12. Has your main partner, ever gotten tested for the HIV virus?
   1. Yes  2. No  3. Not sure

13. When was the last time that your partner got tested? Month…….. Year ……..

14. Would you encourage other young people to get tested?
   1) Yes…… 2) No………

15. How is HIV/AIDS testing important to young people

______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________
(6) Sexual Behaviour Questionnaire

Now I’d like to tell me about your sex life in the past 6 months. Again, I will be asking you some personal things and by being as open as you can, you’re helping me to get a better picture of what young people do sexually. Your frankness in sharing your experiences is very important and appreciated. Let me also remind you that all this material will be kept confidential.

1. Have you ever had any sexual experience (vaginal, anal, and oral) with boys/men in the past six months?
   a. Yes  *(If Yes then go to question 2 and continue)*
   b. No  *(If No go to safer sex self-efficacy-condom use self-efficacy scale on the page12, answer the questions on abstinence and continue )* 

2. Can you tell me which sexual behaviours you engaged in? *(Please circle all that apply)*
   1. Kissing.
   2. Fondling (see definition on vocabulary list).
   3. Virginal Sexual with condoms.
4. Virginal Sexual without condoms.
5. Anal sex.
7. Shooting needles.
8. Sex with a couple of different partners.
9. Sex with one partner exclusively.

3. How old is your primary male partner__________________________

4. How would you describe your current partner (who you consider as your man or primary partner)? *(Please circle all that apply)*
   1. A lover you’ve been with for a while
   2. An ex-lover you got back together with temporarily
   3. A new lover – someone you’ve established a steady relationship with
   4. Someone you’re developing or plan to develop a new relationship with
   5. Someone you know well but you don’t plan to become steady partners
   6. Someone you know slightly but you don’t plan to become steady partners
   7. Someone you had sex with once and don’t plan to again
   8. Someone you had sex with in exchange for drugs, money, or as part of a financial arrangement.

5. Have you and your partner ever talked about any aspect of your sex life, such as what you like to do sexually, using condoms or using birth control? *(Please circle the appropriate response)*
   1. Yes
2. No

6. How comfortable was it for you and your partner to talk about your sex life together?

(Please circle the appropriate response)

1. Comfortable……………
2. Somehow comfortable……………
3. Not comfortable ………

7. Who started this discussion?

1. You
2. Him

8. Can you tell me what you talked about?

______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________

9. Where do you get your condoms from? (Please circle the appropriate response)

1. Clinic
2. Youth centers
3. Drug store/pharmacy

4. Friends

5. Others…………………………..

10. What is the HIV status of your primary partner? (s) *(Please circle the appropriate response)*

1). HIV  
2). Tested  
3). Tested  
4). Not tested  
5). Don’t positive or negative but you don’t for HIV know if he diagnosed for HIV know his was tested for with AIDS status HIV

11. Was he an IV drug user or did he ever shot drugs, including skin popping? *(Please circle the correct response)*

1. Yes

2. No

3. Not sure

12. Since you’ve been sexually involved with your partner, do you think he has had other female partners? *(Please circle the correct response)*

1. Yes

2. No

13. In the past six months what is the total number of times you’ve had vaginal sex with your partner?
14. How many of these times did you use a form of protection such as a condom?
   1) Always   2) almost always   3) almost never   4) never

15. In the past six months what is the total number of times you’ve had anal sex with your partner?
   1) Once   2) twice   3) three times   4) more than three times

16. How many of these times did you use a form of protection such as a condom?
   1) Always   2) almost always   3) almost never   4) never

17. Have you received money, drugs or other things (clothes, etc) in exchange for sex with boys/men in the past six months?
   1. No
   2. Yes ……………..If yes, how many times in the past six months
   1) Once   2) twice   3) three times   4) more than three times

18. Have you given money, drugs or other things (clothes) in exchange for sex with girls/boys in the past six months?
   1. No
2.  1. Yes ………………… If yes, how many times in the past six months
   1) Once    2) twice    3) three times    4) more than three times

*(If you are sexually active please skip the Abstinence Question)*

(7) Abstinence Assessment Question

What are the reasons why you practice abstinence?

Please check all that apply

1. I do not feel ready to have intercourse  Yes  No
2. It is against my religious beliefs     Yes  No
3. Fear of pregnancy                     Yes  No
4. Fear of HIV/AIDS infection            Yes  No
5. Fear of sexually transmitted infection Yes  No
6. Fear of parental disapproval          Yes  No
7. I believe that intercourse before marriage is wrong Yes  No
8. Have not met the right man or woman to have intercourse with Yes  No
9. Other reasons……………………………………………………… Yes  No
The Health Belief Model- Perceived Susceptibility (HMBP)

Please circle the correct response

1. People like me do not get infected with HIV


2. I am so healthy that my body can fight off an HIV infection.


3. I am too young to get infected with HIV.


4. I am worried that I might get infected with HIV.


5. HIV infections can be cured with AIDS drugs.


6. HIV/AIDS infection always leads to death.


7. Even when treated with AIDS drugs, HIV infection always leads to death

(9) **Safer Sex Self-Efficacy - Condom Use Self-Efficacy Scale**

*(Please circle the correct response)*

1. I feel confident in my ability to put a condom on myself or my partner.
   1-Strongly Disagree  2-Disagree  3-Undecided  4-Agree  5-Strongly Agree

2. I feel confident I could purchase condoms without feeling embarrassed.
   1-Strongly Disagree  2-Disagree  3-Undecided  4-Agree  5-Strongly Agree

3. I feel confident I could remember to carry a condom with me should I need one.
   1-Strongly Disagree  2-Disagree  3-Undecided  4-Agree  5-Strongly Agree

4. I feel confident in my ability to discuss condom usage with any partner I might have.
   1-Strongly Disagree  2-Disagree  3-Undecided  4-Agree  5-Strongly Agree

5. I feel confident in my ability to suggest using condoms with a new partner.
   1-Strongly Disagree  2-Disagree  3-Undecided  4-Agree  5-Strongly Agree

6. I feel confident I could suggest using a condom without my partner feeling “diseased.”
   1-Strongly Disagree  2-Disagree  3-Undecided  4-Agree  5-Strongly Agree
7. I feel confident in my own or my partner’s ability to maintain an erection while using a condom.

1-Strongly Disagree 2-Disagree 3-Undecided 4-Agree 5-Strongly Agree

8. I would feel embarrassed to put a condom on myself or my partner.

1-Strongly Disagree 2-Disagree 3-Undecided 4-Agree 5-Strongly Agree

9. If I were to suggest using a condom to a partner, I would feel afraid that he or she would reject me.

1-Strongly Disagree 2-Disagree 3-Undecided 4-Agree 5-Strongly Agree

10. If I were unsure of my partner’s feelings about using condoms, I would not suggest using one.

1-Strongly Disagree 2-Disagree 3-Undecided 4-Agree 5-Strongly Agree

11. I feel confident in my ability to use a condom correctly.

1-Strongly Disagree 2-Disagree 3-Undecided 4-Agree 5-Strongly Agree

12. I would feel comfortable discussing condom use with a potential sexual partner before we ever had any sexual contact (e.g., hugging, kissing, caressing, etc.)

1-Strongly Disagree 2-Disagree 3-Undecided 4-Agree 5-Strongly Agree
13. I feel confident in my ability to persuade a partner to accept using a condom when we have intercourse.

1-Strongly Disagree 2-Disagree 3-Undecided 4-Agree 5-Strongly Agree

14. I feel confident I could gracefully remove and dispose of a condom when we have intercourse.

1-Strongly Disagree 2-Disagree 3-Undecided 4-Agree 5-Strongly Agree

15. If my partner and I were to try to use a condom and did not succeed, I would feel embarrassed to try to use one again (e.g., not being able to unroll condom, putting it on backwards, or awkwardness).

1-Strongly Disagree 2-Disagree 3-Undecided 4-Agree 5-Strongly Agree

16. I would not feel confident suggesting using condoms with a new partner because I would be afraid he or she would think I’ve had a homosexual experience.

1-Strongly Disagree 2-Disagree 3-Undecided 4-Agree 5-Strongly Agree

17. I would not feel confident suggesting using condoms with a new partner because I would be afraid he or she would think I have a sexually transmitted infection.

1-Strongly Disagree 2-Disagree 3-Undecided 4-Agree 5-Strongly Agree

18. I would not feel confident suggesting using condoms with a new partner because I would be afraid he or she would think I thought they had a sexually transmitted infection.
<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1-Strongly Disagree</strong></td>
<td><strong>2-Disagree</strong></td>
<td><strong>3-Uncertain</strong></td>
<td><strong>4-Agree</strong></td>
<td><strong>5-Strongly Agree</strong></td>
</tr>
</tbody>
</table>

19. I would feel comfortable discussing condom use with a potential partner before we ever engaged in intercourse.

<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1-Strongly Disagree</strong></td>
<td><strong>2-Disagree</strong></td>
<td><strong>3-Uncertain</strong></td>
<td><strong>4-Agree</strong></td>
<td><strong>5-Strongly Agree</strong></td>
</tr>
</tbody>
</table>

20. I feel confident in my ability to incorporate putting a condom on myself or my partner into foreplay.

<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1-Strongly Disagree</strong></td>
<td><strong>2-Disagree</strong></td>
<td><strong>3-Uncertain</strong></td>
<td><strong>4-Agree</strong></td>
<td><strong>5-Strongly Agree</strong></td>
</tr>
</tbody>
</table>

21. I feel confident that I could use a condom with a partner without “breaking the mood.”

<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1-Strongly Disagree</strong></td>
<td><strong>2-Disagree</strong></td>
<td><strong>3-Uncertain</strong></td>
<td><strong>4-Agree</strong></td>
<td><strong>5-Strongly Agree</strong></td>
</tr>
</tbody>
</table>

22. I feel confident in my ability to put a condom on myself or my partner quickly.

<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1-Strongly Disagree</strong></td>
<td><strong>2-Disagree</strong></td>
<td><strong>3-Uncertain</strong></td>
<td><strong>4-Agree</strong></td>
<td><strong>5-Strongly Agree</strong></td>
</tr>
</tbody>
</table>

23. I feel confident I could use a condom during intercourse without reducing any sexual sensations.

<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1-Strongly Disagree</strong></td>
<td><strong>2-Disagree</strong></td>
<td><strong>3-Uncertain</strong></td>
<td><strong>4-Agree</strong></td>
<td><strong>5-Strongly Agree</strong></td>
</tr>
</tbody>
</table>

24. I feel confident that I would remember to use a condom even after I have been drinking.

<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1-Strongly Disagree</strong></td>
<td><strong>2-Disagree</strong></td>
<td><strong>3-Uncertain</strong></td>
<td><strong>4-Agree</strong></td>
<td><strong>5-Strongly Agree</strong></td>
</tr>
</tbody>
</table>
25. I feel confident that I would remember to use a condom even if I were high.

1-Strongly Disagree  2-Disagree  3-Undecided  4-Agree  5-Strongly Agree

26. If my partner didn’t want to use a condom during intercourse, I could easily convince him or her that it was necessary to do so.

1-Strongly Disagree  2-Disagree  3-Undecided  4-Agree  5-Strongly Agree

27. I feel confident that I could use a condom successfully.

1-Strongly Disagree  2-Disagree  3-Undecided  4-Agree  5-Strongly Agree

28. I feel confident I could stop to put a condom on myself or my partner even in the heat of passion.

1-Strongly Disagree  2-Disagree  3-Undecided  4-Agree  5-Strongly Agree

(10) Peer Norms

These questions examine how your peers influence your decisions on sexual activities.

Please on a scale of 1-7 circle the appropriate answer.

1. Most people who are important to me think I should use a condom every time I engage in sex

   Likely  1  2  3  4  5  6  7  unlikely
2. My close friends would be upset if I told them I was sexually active

Likely 1 2 3 4 5 6 7 unlikely

3. My close friends would be upset if I told them I engaged in sex without condoms

Likely 1 2 3 4 5 6 7 unlikely

4. My close friends think it is important to practice abstinence

Likely 1 2 3 4 5 6 7 unlikely

5. My close friends think I should use a condom every time I engage in sex

Likely 1 2 3 4 5 6 7 unlikely

6. My close friends think it is important to have sex with one partner

Likely 1 2 3 4 5 6 7 unlikely

7. My close friends think it is safe to have sex without condoms

Likely 1 2 3 4 5 6 7 unlikely

(11) Catania’s Perceptions of Enjoyment

1. How much do you enjoy or think you might enjoy doing the following sexual activities? Even if you've never done the behavior, try to imagine how much you would enjoy it.

**Sexual Activities**
1a. Vaginal Intercourse with condom (Please circle the appropriate response)

(1) Dislike very much (2) Dislike somewhat (3) Dislike slightly
(4) Enjoy slightly (5) Enjoy somewhat (6) Enjoy very much

1b. Vaginal Intercourse without condom (Please circle the correct response)

(1) Dislike very much (2) Dislike somewhat (3) Dislike slightly
(4) Enjoy slightly (5) Enjoy somewhat (6) Enjoy very much.

(12) Catania Dyadic Sexual Communication Scale

These are statements different people have made about discussing sex with their primary partner.

Please write whether you…

1. My partner rarely responds when I want to talk about our sex life.

1-Strongly Disagree 2-Disagree 3-Undecided 4-Agree 5-Strongly Agree

2. Some sexual matters are too upsetting to discuss with my sexual partner.

1-Strongly Disagree 2-Disagree 3-Undecided 4-Agree 5-Strongly Agree

3. There are sexual issues or problems in our sexual relationship that we have never discussed.

1-Strongly Disagree 2-Disagree 3-Undecided 4-Agree 5-Strongly Agree
4. My partner has no difficulty in talking to me about his or her sexual feelings and desires.

1-Strongly Disagree    2-Disagree    3-Undecided    4-Agree    5-Strongly Agree

5. Talking about sex is a satisfying experience for both of us.

1-Strongly Disagree    2-Disagree    3-Undecided    4-Agree    5-Strongly Agree

6. I have little difficulty in telling my partner what I do or don’t do sexually

1-Strongly Disagree    2-Disagree    3-Undecided    4-Agree    5-Strongly Agree

(13) **The Sexual Assertiveness Behaviour Scale**

This portion of the questionnaire is an attempt to discover some of the behaviour that you employ in your sexual activity. Sexual contact is defined as fondling, kissing, petting or intercourse. There is no right or wrong answers. Please answer as honestly as you can. Filling in the number of times you have done this activity.

1. How many times have you had sexual contact (fondling, kissing, petting or intercourse) with a man when you both wanted to?.........................................................................................................................................................

2. How many times have you initiated sexual contact (fondling, kissing, petting or intercourse) with a man/woman?...........................................................................................................................................................................

3. In initiating sexual contact with a man, how many times have you overestimated the level of sexual activity he desired to have with you?...........................................................................................................................................
4. How many times have you attempted to have sexual contact with a man because you were so sexually aroused you did not want to stop?

5. How many times have you attempted to have sexual contact with a man by getting him sexually aroused?

6. How many times have you attempted to have sexual contact with a man by threatening to end your relationship?

7. How many times have you attempted to have sexual contact with a man by saying things that you didn’t mean?

8. How many times have you attempted to have sexual contact with a man by pressuring him with verbal arguments?

9. How many times have you attempted to have sexual contact with a man in order to make another man jealous?

10. How many times have you attempted to have sexual contact with a man to get even with or hurt another man?

11. How many times have you attempted to have sexual contact with a man because you
wanted to end a relationship with another man?........................................................................................................

12. How many have you attempted to have sexual contact with a man in position of authority over you (boss, teacher, or supervisor) in order to better your situation or gain something.?........................................................................................................................................

13. How many times have you attempted to have sexual contact with a man because you were angry at him?........................................................................................................................................

14. How many have you attempted to have sexual contact with a man to retaliate for somethings he did to you?........................................................................................................................................

15. How many times have you attempted to have sexual contact (fondling, kissing, petting, or intercourse) with a man to gain power or control over him?........................................................................................................................................

16. How many times have you attempted to have sexual contact with a man while his judgment was impaired by drugs or alcohol?........................................................................................................................................

17. How many times have you attempted to have sexual contact with a man by taking advantage of a compromising position he was in (being where he did not belong or breaking some rule)?........................................................................................................................................

18. How many times have you attempted to have sexual contact with a man by threatening to use some degree of physical force (holding him down, hitting him e.t.c)
19. How many times have you attempted to have sexual contact with a man by using some degree of physical force?

(14) Rosenberg Self-Esteem Scale

Please circle the correct answer

1. On the whole, I am satisfied with myself.

   1 = Strongly agree  2 = Agree  3 = Disagree  4 = Strongly disagree

2. At times I think I am no good at all.

   1 = Strongly agree  2 = Agree  3 = Disagree  4 = Strongly disagree

3. I feel that I have a number of good qualities.

   1 = Strongly agree  2 = Agree  3 = Disagree  4 = Strongly disagree

4. I am able to do things as well as most other people.

   1 = Strongly agree  2 = Agree  3 = Disagree  4 = Strongly disagree

5. I feel I do not have much to be proud of.

   1 = Strongly agree  2 = Agree  3 = Disagree  4 = Strongly disagree

6. I certainly feel useless at times.

   1 = Strongly agree  2 = Agree  3 = Disagree  4 = Strongly disagree

7. I feel that I'm a person of worth, at least on an equal plane with others.

   1 = Strongly agree  2 = Agree  3 = Disagree  4 = Strongly disagree

8. I wish I could have more respect for myself.

   1 = Strongly agree  2 = Agree  3 = Disagree  4 = Strongly disagree
9. All in all, I am inclined to think that I am a failure.

1 = Strongly agree   2 = Agree   3 = Disagree   4 = Strongly disagree

10. I take a positive attitude toward myself.

1 = Strongly agree   2 = Agree   3 = Disagree   4 = Strongly disagree
The 14-Item Resilience Scale™ (RS-14™)

Please read the following statements. To the right of each you will find seven numbers, ranging from "1" (Strongly Disagree) on the left to "7" (Strongly Agree) on the right. Circle the number which best indicates your feelings about that statement. For example, if you strongly disagree with a statement, circle "1". If you are neutral, circle "4", and if you strongly agree, circle "7", etc.

<table>
<thead>
<tr>
<th></th>
<th>Statement</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>I usually manage one way or another.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>2</td>
<td>I feel proud that I have accomplished things in life.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>3</td>
<td>I usually take things in stride.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>4</td>
<td>I am friends with myself.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>5</td>
<td>I feel that I can handle many things at a time.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>6</td>
<td>I am determined.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>7</td>
<td>I can get through difficult times because I’ve experienced difficulty before.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>Statement</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>---------------------------------------------------------------------------</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td>I have self-discipline.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td>I keep interested in things.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td>I can usually find something to laugh about.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11.</td>
<td>My belief in myself gets me through hard times.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12.</td>
<td>In an emergency, I’m someone people can generally rely on.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13.</td>
<td>My life has meaning.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14.</td>
<td>When I’m in a difficult situation, I can usually find my way out of it.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(16) *Spirituality Perspective Scale*
Introduction and Direction:

A person’s spiritual views may be an important part of their life. In general, spirituality refers to an awareness of one’s inner self and a sense of connection to a higher being, nature, others, or to some purpose greater than oneself. I am interested in your response to the questions below. There are no right or wrong answers, of course. (Please circle the appropriate answer)

1. In talking with your family or friends, how often do you mention spiritual matters?

   1. Not at all ............  2. Less than once a year ...... ....  3. About once a year ............
   4. About once a month ............  5. About once a week ............  6. About once a day ............

2. How often do you share with others the problems and joys of living according to your spiritual beliefs?

   1. Not at all ............  2. Less than once a year ...... ....  3. About once a year ............
   4. About once a month ............  5. About once a week ............  6. About once a day ............

3. How often do you need spiritual-related material?

   1. Not at all ............  2. Less than once a year ...... ....  3. About once a year ............
   4. About once a month ............  5. About once a week ............  6. About once a day ............

4. How often do you engage in private prayer or meditation?

   1. Not at all ............  2. Less than once a year ...... ....  3. About once a year ............
   4. About once a month ............  5. About once a week ............  6. About once a day ............
Directions: Please indicate the degree to which you agree or disagree with the following statements by marking an x in the space above the words which best describe you.

5. Forgiveness is an important part of my spirituality


6. I seek spiritual guidance in making decisions in my everyday life.


7. My spirituality is a significant part of my life


8. I frequently feel very close to God or a “higher power” in prayer, during public worship or at important moments in my daily life.


*9. My spiritual views have had influence upon my sexual life


4. Agree more than disagree……5. Agree…….. 6. Strongly disagree…………………………..

*10. My spirituality is especially important to me because it answers many questions about sexual behaviour

1. Strongly disagree……….. 2.Disagree…………. 3.Disagree more than agree…………

4. Agree more than disagree……5. Agree…….. 6. Strongly disagree…………………………..

*11. Because of my spirituality, I will delay my sex before marriage

1. Strongly disagree………… 2.Disagree…………. 3.Disagree more than agree…………

4. Agree more than disagree……5. Agree…….. 6. Strongly disagree…………………………..

*12. Because of my spirituality, I will stay with one partner

1. Strongly disagree………… 2.Disagree…………. 3.Disagree more than agree…………

4. Agree more than disagree……5. Agree…….. 6. Strongly disagree…………………………..

*13. Because of my spiritual and traditional beliefs having sex with a virgin is a cure for HIV/AIDS

1. Strongly disagree………… 2.Disagree…………. 3.Disagree more than agree…………

4. Agree more than disagree……5. Agree…….. 6. Strongly disagree…………………………..

*14. Because of my spirituality I believe using condoms is a sin

1. Strongly disagree………… 2.Disagree…………. 3.Disagree more than agree…………
4. Agree more than disagree……. 5. Agree………. 6. Strongly disagree……………………

*15. Because of my traditional and spiritual beliefs I believe having protected sex with multiple partners is safe

1. Strongly disagree………… 2. Disagree………….. 3. Disagree more than agree…………

4. Agree more than disagree……. 5. Agree………. 6. Strongly disagree……………………

Do you have any views about the importance or meaning of spirituality in your life that have not been addressed by the previous questions?

_____________________________________________________________________
_____________________________________________________________________
_____________________________________________________________________
_____________________________________________________________________
_____________________________________________________________________
_____________________________________________________________________
_____________________________________________________________________
Africentrism Scale

Read each statement carefully and indicate whether you strongly disagree, disagree, agree, or strongly agree. Please express your honest opinion in rating the statements. Remember, there are no “wrong” answers, and the only right ones are whatever you honestly feel or believe. If in doubt, circle the response that seems closest to your feelings about the statement. It is important that you answer every item.

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Strongly Disagree</td>
<td>Disagree</td>
<td>Agree</td>
</tr>
<tr>
<td>2</td>
<td>Strongly Disagree</td>
<td>Disagree</td>
<td>Agree</td>
</tr>
<tr>
<td>3</td>
<td>Strongly Disagree</td>
<td>Disagree</td>
<td>Agree</td>
</tr>
<tr>
<td>4</td>
<td>Strongly Disagree</td>
<td>Disagree</td>
<td>Agree</td>
</tr>
<tr>
<td>5</td>
<td>Strongly Disagree</td>
<td>Disagree</td>
<td>Agree</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>6. I owe something to the Black people who have suffered before me.</td>
<td>Strongly</td>
<td>Disagree</td>
<td>Agree</td>
</tr>
<tr>
<td>7. I owe something to those who have tried to make things better for me.</td>
<td>Strongly</td>
<td>Disagree</td>
<td>Agree</td>
</tr>
<tr>
<td>8. Black people need to stop worrying so much about “the community” and take care of their own needs</td>
<td>Strongly</td>
<td>Disagree</td>
<td>Agree</td>
</tr>
<tr>
<td>9. I am doing a lot to improve my neighborhood.</td>
<td>Strongly</td>
<td>Disagree</td>
<td>Agree</td>
</tr>
<tr>
<td>10. The success I have had I mainly because of me, not anyone else.</td>
<td>Strongly</td>
<td>Disagree</td>
<td>Agree</td>
</tr>
<tr>
<td>11. I have more confidence in White professionals, like doctors and teachers, than in Black professionals</td>
<td>Strongly</td>
<td>Disagree</td>
<td>Agree</td>
</tr>
<tr>
<td>12. Black people should build and maintain their own communities</td>
<td>Strongly</td>
<td>Disagree</td>
<td>Agree</td>
</tr>
<tr>
<td>13. I must do all I can to restore Black people to their position of respect in the world.</td>
<td>Strongly</td>
<td>Disagree</td>
<td>Agree</td>
</tr>
<tr>
<td></td>
<td>I make it a point to shop at Black businesses and use Black owned services.</td>
<td>Strongly Disagree</td>
<td>Disagree</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>14.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>It is important that Black people decide for themselves what to be called and what their needs are.</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>15.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(18) Cultural Mistrust Questionnaire

This is a self designed questionnaire and I would like you to indicate if you agree or disagree with a statement

Strongly agree (5) somewhat agree (4) Agree (3) somewhat disagree (2) strongly disagree (1)

1. Having Black people use condoms is a way of reducing the Black population

   Strongly agree (5) somewhat agree (4) Agree (3) somewhat disagree (2) strongly disagree (1)

2. HIV was created to wipe out the Black/African race

   Strongly agree (5) somewhat agree (4) Agree (3) somewhat disagree (2) strongly disagree (1)

4. HIV is not the cause of AIDS.

(19) Traditional Egalitarian Sex Role Scale

(Please circle the answer that you think is most appropriate)

5= strongly agree, 4= agree, 3= not sure, 2= disagree, 1= strongly disagree

1. It is just as important to educate daughters as it is to educate sons.  
2. Women should be more concerned with clothing and appearance than men.  
3. Women should have as much sexual freedom as men.  
4. The man should be more responsible for the economic support of the family than the woman.  
5. The belief that women cannot make as good supervisors or executives as men is a myth.  
6. The word “obey” should be removed from wedding vows.  
7. Ultimately a woman should submit to her husband’s decision.  
8. Some equality in marriage is good, but by and large the husband ought to have the main say-so in family matters.  
9. Having a job is just as important for a wife as it is for her husband.  
10. In groups that have both male and female members, it is more appropriate that leadership...
positions he held by males.

11. I would not allow my son to play with dolls.

12. Having a challenging job or career is as important as being a wife a mother.

13. Men make better leaders.

14. Almost any woman is better off in her home than in a job or profession.

15. A woman’s place is in the house.

16. The role of teaching in the elementary schools belongs to women.

17. The changing of diapers is the responsibility of both parents.

18. Men who cry have weak character.

19. A man who has chosen to stay at home and be a house-husband is not masculine.

20. As head of the household, the father should have the final authority over the children.
(20)  **Social Health Battery**

1. About how many families in your neighbourhood are you well enough acquainted with, that you visit each other in your homes?

   ______________________ Families (write the number on the line)

2. About how many close friends do you have – people you feel at ease with and can talk with about what is on your mind? (You may include relatives)

   Enter the number on the line below.

   ______________________ close friends

3. Over a year’s time, about how often do you get together with friends or relatives, like going out together or visiting in each other’s homes?

   (Circle one)

   - Everyday 1
   - Several days in a week 2
   - About one day a week 3
   - 2 or 3 times a month 4
   - About once a month 5
   - 5 to 10 times a year 6
   - Less than 5 times a year 7

4. During the past month, about how often have you had friends over to your home? (Do not count relatives)

   - Everyday 1
   - Several days a week 2
5. About how often have you visited with friends at their homes during the past month? (Do not count relatives).

   Everyday                                                                 1
   Several days a week                                                        2
   About once a week                                                          3
   2 or 3 times in the past month                                             4
   Once a the past month                                                      5
   Not at all in the past month                                               6

6. About how often were you on the telephone (cell phone) with close friends or relatives during the past month?

   Everyday                                                                 1
   Several days a week                                                        2
   About once a week                                                          3
   2 or 3 times in the past month                                             4
   Once a the past month                                                      5
   Not at all in the past month                                               6

7. About how often did you write a letter to a friend or relatives during the past month?

   Everyday                                                                 1
   Several days a week                                                        2
8. In general, how well are you getting along with other people these days—would you say better than usual, about the same, or not as well as usual?

Better than usual 1
About the same 2
Not as well as usual 3

9. How often have you attended a religious service during the past month?

Everyday 1
Several days a week 2
About once a week 3
2 or 3 times in the past month 4
Once a the past month 5
Not at all in the past month 6

10. About how many voluntary groups or organizations do you belong to—like church groups, clubs or lodges, youth groups (“voluntary” means because you want to)

___________________ groups organizations (write on the line)

11. How active are you in the affairs of these groups or clubs you belong to (if you belong to a great many, just list those you feel closer to. If you don’t belong to any, circle 4)

Very active, attend most meetings 1
<table>
<thead>
<tr>
<th>Activity</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fairly active, attend fairly often</td>
<td>2</td>
</tr>
<tr>
<td>Not active, belong but hardly ever go</td>
<td>3</td>
</tr>
<tr>
<td>Do not belong to any groups or clubs</td>
<td>4</td>
</tr>
</tbody>
</table>

(21) **Childhood Experiences**

*(Age 14 or younger)*

1. For each experience

Check yes if: You were 14 years of age or younger

AND

a. The other person was at least 5 years older than you

b. OR the other person was of any age but the experience was unwanted or forced.

<table>
<thead>
<tr>
<th>Experience</th>
<th>No</th>
<th>Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) An invitation or request to do something sexual</td>
<td>----</td>
<td>-----</td>
</tr>
<tr>
<td>b) Kissing and hugging in a sexual way</td>
<td>----</td>
<td>-----</td>
</tr>
<tr>
<td>c) Another person showing his/her sex organs to you</td>
<td>----</td>
<td>-----</td>
</tr>
<tr>
<td>d) You showing your sex organs to another person</td>
<td>----</td>
<td>-----</td>
</tr>
<tr>
<td>e) Another person foundling you in a sexual way</td>
<td>----</td>
<td>-----</td>
</tr>
<tr>
<td>f) You fondling another person in a sexual way</td>
<td>----</td>
<td>-----</td>
</tr>
<tr>
<td>g) Another person touched your sex organs</td>
<td>----</td>
<td>-----</td>
</tr>
</tbody>
</table>

273
h) You touching another person’s sex organs

i) Another person performing oral sex

j) You performing oral sex on someone else

k) Another person using force to be sexual with you
   (e.g. holding you down, threatening you)

l) Another person wanting to physically hurt you while doing
   something sexual

m) Attempted intercourse

n) Vaginal intercourse

o) Anal intercourse

p) Showed you pictures of adults or children in sexual poses or
   engaged in sexual acts or took pictures of you in sexual poses
   or engaged in sexual acts.

q) Other (specify)-----------------------------------------------------------------------------------------------------------------

If any of the above act occurred did it ever:

-----cause lacerations, bleeding, cuts, bruises

-----lead to pregnancy

-----require medical treatment

-----result in venereal disease

Thank you for answering the questions               EDNA ARYEE
Appendix E: Letter of Support from Field Supervisor

UNIVERSITY OF GHANA
DEPARTMENT OF PSYCHOLOGY

7th January, 2010

TO WHOM IT MAY CONCERN

REF: EDNA ARYEE

Edna Aryee is a former student of the Psychology Department at the University of Ghana. Presently, she is studying Psychology at the PhD level at the University of Toronto and as part of her requirement, she will be collecting her research data in Ghana from the Planned Parenthood Young and Wise Center in Accra. In view of this, and in agreement with her academic supervisor at the University of Toronto, I have agreed to be her local supervisor in Ghana at every stage of her research work. Edna is a hardworking and intelligent student and has extensive experience in conducting research with young people. I have known Edna for the past 10 years and supervised her research work at both undergraduate and graduate level.

Sincerely,

Dr. Charity Akotia (PhD)

(Senior Lecturer and Community Psychologist)
Email: sakotia@libr.ug.edu.gh
Tel: +233 20 812 7695
Appendix F: Letter of Support
5th January, 2010.

THE CHAIRMAN OR ADMINISTRATOR
GHANA HEALTH SERVICES ETHICS REVIEW COMMITTEE
RESEARCH AND DEVELOPMENT DIVISION
P.O. BOX MB 190
ACCRA-GHANA.

Dear Sir,

LETTER OF SUPPORT: EDNA ARYEE

We write in support of the bearer of this letter MS. EDNA ARYEE who will be gathering her data at the Planned Parenthood Association of Ghana (PPAG) Young and Wise Center in the Southern Zone (ACCRA).

Ms. Aryee has been a Volunteer of the PPAG since 1993. She has worked in various capacities as youth counselor, UNFPA youth representative and council member. Other units she worked with include the Youth reference library and the Audio reference units. She also facilitated group/individual discussions on sexual and reproductive health issues and other youth-related issues during her work. She has proved to be competent, knowledgeable and a hard working member of the Association.

Ms. Aryee is currently studying Psychology at the PhD level at the University of Toronto. As part of her PhD requirement she is in Ghana to collect her research data at the Young and Wise Center in the Southern Zone (ACCRA) and we have agreed to assist her in recruiting participants. Ms. Aryee is using the AIDS Risk Reduction Model as her theoretical framework to examine the factors the put young people at risk for HIV/AIDS infection.

We believe her research will be of use to all young people in Ghana and the world at large.

Yours sincerely,

Laura Nyarko-Ampepem
(Zonal Manager, SZ)
Appendix G: Introductory Letter to PPAG

Dear Contact of Agency

My name is Edna Aryee and I am a doctoral student in the Department of Adult Education and Counselling Psychology (AECP) at the Ontario Institute for Studies in Education of the University of Toronto. I am seeking Ghanaian young women as participants for my doctoral research project. My study involves examining the factors that contribute to the sexual behaviour of young women in Ghana. My research supervisors on this project are Dr. Charity Akotia and Dr. J. Roy Gillis.

Please attached is a copy of my poster that contains a description of the study and my contact information. If you are willing, I would appreciate it if you could post his advertisement, please do not hesitate to visit the following website: <website address to be determined and arranged>.

I thank you for your consideration.

Sincerely,

Edna Aryee
Doctoral Candidate
Appendix H: Survey Poster

HIV/AIDS Research Study among Young Ghanaian Women

✓ Are you a young Ghanaian woman between ages 16-29?
✓ Come and let’s talk about how we can develop more gender and culture appropriate HIV/AIDS prevention programs for young women in Ghana.

This is a research study that will help all of us.

Your name or personal information will not be used or be identified during and after the research.

Hey!!! You will receive free snacks and drinks

If you are interested in the research study, please contact me via email at: edna.aryee@utoronto.ca or visit the PPAG Young and Wise Center for more information.
Appendix I: Informed Consent

ON AECP-OISE Letter Head
INFORMED CONSENT FORM

Implications of Sexual Risk Assessment for HIV Intervention Planning:
The Utility of the Expanded ARRM among Young Ghanaian women

Participant Information and Consent Form
(Survey)

My name is Edna Aryee, and I am a Ghanaian studying at the University of Toronto in Canada. Presently, I am conducting a research here at PPAG, Southern Zone as part of my studies. I will like to know the opinions and experiences of young people on issues like sex, HIV testing, AIDS knowledge, condom use, sexual communication, and negotiation. In addition, I will like to know the extent to which gender and other cultural factors shape the sexual behaviours of young women in Ghana.

I will be asking few questions related to the HIV status, childhood and sexual history of young people. Some of the questions may be difficult to answer, but answering them will give me more understanding on the factors that influence sexual behaviours of young women in Ghana.

I will be using a paper and pencil/pen questionnaire in this research, which means I will give you a set of questionnaires and you will check or write your response as directed. The completion of the questionnaire will take about 2 hours. You can withdraw at any time during the study, however, if you have to withdraw your data, it must be done before it is placed in a sealed envelope. Your withdrawal will also not affect your ability to access services at PPAG/Young & Wise Center.

The information is not intended to be used in any way that will harm you. In case you agree to participate, you may choose not to answer a question or even terminate your participation altogether. In that case, you may request that all the responses that you would have provided be
deleted. The reports that will be based on the responses will also protect your confidentiality. They will be in aggregate and anonymized. All the information that you give me will remain confidential and will not be associated with your name.

It is possible that you may experience intense emotions due to recalling difficult experiences in your life. I am a trained counsellor and I working with trained counselors and nurse at PPAG who are available to talk to you and may offer some form of assistance.

In case you have any concerns regarding the process you may contact Dr. Charity Akotia from the University of Ghana, Legon and Dr. J. Roy Gillis from University of Toronto.

Have I explained everything well enough to you? Do you have any questions for me?

Thank you very much for your cooperation and assistance.

Sincerely,

Edna Aryee
edna.aryee@utoronto.ca
1. **Volunteer’s Declaration of Informed Consent**

I understand that I have to be at least 16 years to participate in this study. I have read the information letter describing the purpose and procedures of this study.

I have been given a written explanation of the study by the researcher, including full details of any potential psychological risks, my rights (participant, gender, cultural and human rights) and what is to be done to me. I have been given the opportunity to ask questions.

I have had enough time to think about the study, and talk to relatives and/or friends about it (if I wish) and to decide without pressure if I want to take part.

I understand the decision is up to me and that I can change my mind at any time, and withdraw from the study.

I understand that I am free to answer some questions and not others.

I have been assured that all information collected in the study, will be held in confidence and if presented (in a conference, journal, and clinical meetings) my personal details will be removed.

I agree that I can withdraw from the study should I experience any ‘psychological distress’ in the study.
I know that if I express an interest in counseling or need for psychological support during and after the research, the researcher will refer me to the appropriate counselor or agency for help.

I therefore agree that I will take part in this study.

Edna Aryee
edna.aryee@utoronto.ca
Tel…. 

**Supervisor:**
Charity S. Akotia, PhD
Department of Psychology
University of Ghana, Legon.
Accra, Ghana
Tel: …. 
Email: sakotia@libr.ug.edu.gh

1. I agree to participate in this research

(Please do not write your name or use actual signature, just put your initials)

**Initials**…………………………….. Date………………………………..
2. **DECLARATION OF RECEIPT OF INFORMED CONSENT FORM**

   I have received a copy of this Consent Form.

3. I agree to all the data collected to be used for research purposed that could include publications or public presentation of the data following the guidelines specified above.

   **Initials……………………………… Date………………………………………**

   (PLEASE DO NOT WRITE YOUR NAME OR USE ACTUAL SIGNATURES, JUST PUT YOUR INITIALS)

4. **REQUEST TO RECEIVE SUMMARY OF RESULTS**

   If you would like to receive a summary of the results of the study, please contact Edna Aryee at the above address at a later date, and she will provide you with a summary of the research.

5. **RESEARCHER RESPONSIBLE FOR CONDUCTING THE INFORMED CONSENT PROCESS:**

   I confirm that I have explained the nature of the research and provided the participant with elaborate information explaining the nature of the study.

   **Signature………………………………**

   **Date………………………………………**

   Please keep one copy of this consent form for your files
Appendix J: Debriefing Page

Thank you for participating in the study.

The aim of the study was to determine how the three stages AIDS Risk Reduction Model relate to the specific psychological (assertiveness, self-esteem), interpersonal (resiliency) and sociocultural factors (spirituality, cultural mistrust, gender-role, Africentrism) factors contribute to HIV risky sexual behaviour among youth.

If you participated in the study, your responses would have been pooled with others to determine if the above factors are indeed related to risky sexual behaviour occurring in youth.

During the study, you have encountered questions that may have provoked emotional responses, and possible painful memories. If this occurred for you, it is possible that you may have experienced some difficulties in your sexual life. Being aware of the challenges is an important step towards, practicing safer sex and assertively negotiating for healthy sexual relationship.

To help you determine what your other steps might entail, in terms of heading towards safer sex practices and behaviours, please visit any or all of the following websites that devote information to HIV/AIDS prevention and safer sex practices listed below:

1. Planned Parenthood Association of Ghana

http://www.ppag-gh.org
2. University of Ghana, Counselling Centre

www.ug.org

Call the helpline: PPAG Young and Wise Center (Ghana country code 233) ..... 

Finally, if you are currently contemplating on testing your HIV status you can also visit any of the PPAG for voluntary HIV counseling and testing.