

**Can Health and Wellness Education Programs Help Decrease the Number of New Incidences? A Study of the HIV/AIDS Pandemic in Malawi.**

by

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## Abstract

This study entails a secondary data analysis and a proposed program model for the HIV/AIDS pandemic in Malawi. Addressing key issues such as what is the best way to decrease the number of new incidences of HIV/AIDS in Malawi, this research study evaluated the potential incentives of implementing health and wellness education programs that addresses HIV prevention, condom usage, and behavior change in Malawian schools.

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## List of Abbreviations

AIDS	Acquired Immune Deficiency Syndrome
ART	Antiretroviral Therapy
CDC	Centers for Disease Control
CIA	Central Intelligence Agency
CSO	Civil Society Organization
FBO	Faith-Based Organizations
FPAM	Family Planning Association of Malawi
HIV	Human Immune Deficiency Virus
HIV/AIDS	Human Immune Deficiency Virus and Acquired Immune Deficiency Syndrome
IMB	Information Motivation Behavioral Skills
IOM	Institute of Medicine
IOM	International Organization for Migration
MDICP	Malawi Diffusion and Ideational Change Project 2004-2006
NGO	Nongovernmental Organizations
NPA	National Plan of Action
NSO	National Statistics Office
PEPFAR	President's Emergency Plans for AIDS Relief
SAMP	Southern African Migration Project
SRH	Sexual Reproductive Health

STI Sexually Transmitted Infections  
TRA Theory of Reasoned Action  
UNAIDS Joint United Nations Programme on HIV/AIDS  
WHO World Health Organization

## CHAPTER 1: INTRODUCTION

“Health and wellness education programs have been an integral part of society since the earliest civilizations. Evident in the writings of the Babylonians, Egyptians, and Old Testament, the Israelites indicated that various health promotion techniques were used. Similar to their original functions, health and wellness education programs have been used to secure fundamental needs such as water, shelter, food, and safety.” (Johnson & Breckon, 2006, p. 1)

Health and wellness education programs have played an essential role on health outcomes in society since the beginning of time. In today’s society, health and wellness education programs have evolved entailing more complex functions that play a crucial role in altering negative health outcomes into positive health outcomes. During the past 20 years there has been a dramatic increase in society’s interest in preventing disability and death in the United States by changing individual behaviors linked to the risk of contracting chronic diseases (McLeroy, Bibeau, Steckler, & Glanz, 1988). This shift has been referred to as the epidemiologic transition (McLeroy & Crump, 1994). Lyles, Crepaz, Herbst, and Kay (2006) defined the epidemiologic transition as the shift to an evidence-based approach to health promotion and disease prevention.<sup>1</sup>Based on a comparison of Malawi to Zimbabwe, this paper will point to the urgent need to invest in health and wellness education programs in Malawi.

Professionals in the fields of mental health and education believe that the preventive and educative roles of counselors, educators, and psychologists are critical in helping children learn

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<sup>1</sup> In 1996, evidence-based medicine was defined as the “conscientious, explicit, and judicious use of the current best evidence in making decisions about the care of individual patients. As adapted to public health, the evidence-based approach to disease prevention and health promotion relies on the most rigorous scientific evidence relevant for affected populations or communities” (Lyles, Crepaz, Herbst, & Kay, 2006, pp. 21–22). The Institute of Medicine (IOM) has recently called for evidence-based decision-making across all public health sectors, including HIV prevention (IOM, 2001, 2003).

to live a healthy and well-balanced life (Omizo, Omizo, & D'Andrea, 1992). Historically, health and wellness education programs have been utilized to encourage and promote the physical, emotional, and social wellbeing of school-aged children (Mills, Dunham, & Alpert, 1998). Health and wellness education programs have evolved as strategic interventions to improve health outcomes by focusing on areas such as childhood obesity, HIV/AIDS, and cancer (Kaye & Moreno-Leguizamon, 2010).

There has been a dramatic increase in the public, private, and professional interest in preventing disability and death in the United States through efforts such as smoking cessation, weight reduction, increased exercise, dietary change, injury prevention, protected sexual activity, and participation in screening and control programs, and health and wellness education programs (McLeroy et al., 1988). Much of this interest in health promotion and disease prevention has been stimulated by the epidemiologic transition from infectious disease to chronic disease as leading causes of death, the aging of population, rapidly escalating health care costs, and epidemiologic findings linking individual behaviors to increased risk of morbidity and mortality (McLeroy et al., 1988). In addition, there has been accumulating evidence of the role of behavioral risk factors in disease onset and evidence from intervention trials that reducing the level of risk factors can reduce morbidity and mortality (McLeroy & Crump, 1994).

Former research has established that wellness promotion can assist academic, social, emotional, and physical development (Mills et al., 1998). Health and wellness education programs are also discussed in the literature as health promotion and wellness programs. Johnson and Breckon (2006) pg. 1, defined health promotion as the combination of educational and environmental supports for actions and conditions of living conducive to health.

Health education has traditionally been used to refer to educational interventions (Johnson & Breckon, 2006). In the last few decades, the science of health education and health promotion has matured and has demonstrated the ability to produce significant results (Johnson & Breckon, 2006).<sup>2</sup> Major gains have been made in extending the length of life and improving the quality of life (Johnson & Breckon, 2006). Developed and developing countries have relied on the utility of health and wellness education programs to promote a better quality of life for their citizens. Michael et al. (1992) noted, “To live healthy lives, children need to learn concrete ways of promoting wellness at an early age pg. 194.” Focusing on global issues such as HIV/AIDS, public health agencies have designated health and wellness education programs as a key tool to help improve negative health outcomes that impact adults and children.

One of the most popular health initiatives of health and wellness education programs funded by global public health agencies is the global HIV/AIDS epidemic. Specifically, many public health agencies are examining behavioral interventions<sup>3</sup> as a tool to prevent HIV transmission and to reduce HIV disease progression in the United States and internationally (Centers for Disease Control & Prevention [CDC], 2013). According to the World Health Organization, (WHO) and the Joint United Nations Programme on HIV and AIDS (UNAIDS), 35.3 million people were residing with HIV in 2012, with 2.3 million people becoming newly infected worldwide (U.S. Government, Department of Health & Human Services, 2013). In

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<sup>2</sup> The health promotion approach formulated in the 1986 Ottawa Chapter was a response to the realization that information and knowledge alone were not enough to facilitate behavior change. The health promotion, also known as health and wellness approach is based on the ideas that there are strong political, economic, social, cultural, environmental, behavioral and biological factors that influence how people handle their health (determinants of health) (Kiragu & McLaughlin, 2011, p. 420).

<sup>3</sup> For the purposes of this study Bronfenbrenner’s model of behavior was used to define behavioral interventions. Behavior is viewed as being affected by and affecting multiple levels of influence. Specifically, Bronfenbrenner divides environmental influences on behavior into the micro, meso, exo, and macrosystem levels of influence. The microsystem refers to face-to-face influences in specific settings, such as interactions within one’s immediate family, informal social networks, or work groups. The mesosystem refers to the interrelations among the various settings in which the individual is involved. These may include family, school, peer groups, and church. The exosystem refers to forces within the larger social system in which the individual is embedded. An example of the exosystem may include unemployment rates, which effect economic stability (McLeroy et al.,1988). Macrosystem is the fourth level of Bronfenner’s theory. Cultural values, health and public policy and laws are all a part of the macrosystem. The culture’s belief systems and ideology influence the individual directly, even though the individual does not have much freedom in determining his or her cultural exosystem, mesosystem, and the microsystems (Williams, 2014).

addition, 2.1 million adolescents 10-19 years are infected (U.S. Government, Department of Health & Human Services, 2013), and 36 million people have died since the first cases were reported globally in 1981 (U.S. Government, Department of Health & Human Services, 2013).

### **Background**

It is important to note that HIV is the world's leading infectious disease killer (U.S. Government, Department of Health & Human Services, 2013). The sub-Saharan region has been heavily impacted by the HIV/AIDS pandemic. Sub-Saharan Africa is the most affected region, with nearly 1 in every 20 adults living with HIV (CDC, 2013). Approximately 3.4 million new infections occurred in 2001 (Joint United Nations Programme on HIV and AIDS [UNAIDS] and World Health Organization [WHO], 2001). Although sub-Saharan Africa accounts for 12% of the world's population (The Henry J. Kaiser Family Foundation, 2013), 69% of all people who are living with HIV in the world live in the sub-Saharan region (U.S. Government, Department of Health & Human Services, 2013). Malawi has a population estimate ranging from 13-15.9 million (Joint United Nations Programme on HIV and AIDS [UNAIDS] and World Health Organization [WHO], 2001); however, the UNAIDS (2012) estimated that 1.1 million Malawians are living with HIV/AIDS.

Ninety-five percent of new infections occur in individuals that reside in low and middle-income countries (The Henry J. Kaiser Family Foundation, 2013). According to the WHO, an estimated 3.34 million children worldwide are living with HIV. Most of these children live in the sub-Saharan region and were infected by their HIV positive mothers during pregnancy, childbirth, or breastfeeding (U.S. Government, Department of Health & Human Services, 2013). Globally, over 700 children become infected with HIV each day (U.S. Government, Department of Health & Human Services, 2013).

The HIV/AIDS pandemic not only affects the health of individuals in the sub-Saharan region, it also impacts households, communities, and the development and economic growth of nations. Many of the countries hit hardest by HIV also suffer from other infectious diseases, food insecurity, and other serious problems such as poverty and orphanhood (U.S. Government, Department of Health & Human Services, 2013). The HIV/AIDS pandemic in Malawi is important to review due to its impact on infant, child, and maternal mortality rates (CDC, 2013). According to the WHO, Malawi has an infant mortality rate of 79 deaths per 1,000 births for infants less than one year of age in a given year. In relation to the world, Malawi is ranked within the top ten for highest infant mortality rates (CDC, 2013). Equally important is Malawi's high rate of maternal mortality. Malawi's maternal mortality rate is 460 deaths per 100,000 live births (CDC, 2013). According to the WHO, Malawi has the second highest under five-mortality rate and the increase in maternal mortality and infant mortality has been attributed to the growing impact of the HIV/AIDS pandemic (CDC, 2013). In essence, the HIV/AIDS pandemic is intensifying other social problems in Malawi because HIV/AIDS impoverishes those infected by limiting their ability to work, attend school, and obtain access to healthcare.

There is an emphasis on Malawi in this study because Malawi's HIV/AIDS pandemic is salient to the global epidemic. The United States first responded to the global epidemic in 1986 and has continued its response with key initiatives such as the Leadership and Investment in Fighting an Epidemic, the International Mother and Child Prevention Initiative, the President's Emergency Plan for AIDS Relief (PEPFAR), and other multiple federal departments and agencies (The Henry J. Kaiser Family Foundation, 2013). These initiatives are imperative to a stemming global epidemic that has severely impacted the sub-Saharan region. In contrast to the progress that the United States and many other countries have achieved with lowering their



number of new incidences of HIV/AIDS among persons aged 15–24 years, the sub-Saharan region accounts for the highest rate of new infections of persons aged 15–49 years and the rate is steadily increasing (The Henry J. Kaiser Family Foundation, 2013). The Henry J. Kaiser Family Foundation (2013) indicated that effective prevention strategies include behavior change programs, condoms, HIV testing, blood supply safety, harm reduction efforts for injecting drug users, and male circumcision.

Due to the fact that Malawian adults aged 15–49 years have the highest rate of new incidences of HIV/AIDS (CDC, 2013), Malawi represents an excellent unit of analysis in the sub-Saharan region to examine the potential benefits of implementing health and wellness education programs in all schools. The purpose of this study is to present the challenges that Malawi faces with its HIV/AIDS pandemic and examine if health and wellness education programs can serve as a strategic intervention as a behavior change program that educates Malawians about HIV/AIDS. The significance of this study is paramount as it contributes to valuable insight and theory into the potential successful implementation of health and wellness education programs as a strategic intervention for the HIV/AIDS pandemic in Malawi.

There is a great need for systematic research because of its potential ability to improve the quality of life for Malawians and those in the global community impacted by HIV/AIDS. The results of this study may be utilized to develop a strategic plan to decrease the number of new incidences of HIV/AIDS among persons aged 15–49 years in Malawi. It is evident in the current HIV/AIDS pandemic that examining the potential impact of health and wellness education programs on the number of new incidences of HIV/AIDS in Malawi cannot be overlooked.

Although China has different demographic and cultural characteristics than Malawi, China represents an excellent case to demonstrate the positive outcome of health and wellness education programs on transforming negative health outcomes such as HIV/AIDS globally. Similar to Zimbabwe, China transformed its HIV/AIDS epidemic with HIV prevention programs and health promotion. A study conducted by Hong, Fonkaew, Senaratana, and Tonmukayakul (2010) revealed that significant improvement has been gained in sexual and reproductive health, and HIV prevalence following the implementation of the HIV prevention and health promotion programs. Likewise to Malawi, the study indicated that key cultural dimensions impacted and defined the context of the HIV/AIDS epidemic in China. The first was the fact that Chinese adolescents were having sexual relations at an early age (Hong et al., 2010). Secondly, the early ages of marriage and the decline in age at first sexual intercourse has had an immense contribution. Lastly, young adults aged 20–39 years had the highest rate of HIV infection in China. Nevertheless, in order to safeguard adolescents' sexual health, China implemented sexual reproductive health programs into its schools (Hong et al., 2010). Malawi can benefit greatly from the implementation of health and wellness education programs that include sex education into its schools.

Tables 1 and 2 are a part of the Hong et al. (2010) research study. The tables exemplify the outcomes of the implementation of reproductive health promotion and HIV prevention programs into the Chinese schools that targeted early adolescents in China. The statistics reveal that sexual reproductive health (SRH) promotion, and HIV prevention information, motivation, and behavioral skills change after one week of the training program.

Table 1

*Comparison of the Mean Scores on Sexual and Reproductive Health (SRH) Promotion and HIV Prevention*

*Information of the Early Adolescents Before and After Training (n = 102), (Hong et al., 2010).*

Variable	Before Training	After Training	Z-Value	P-Value
	Mean ± STD	Mean ± STD		
SRH promotion information (total: 0–30)	9.08 ± 3.85	20.09 ± 3.96	-11.61	0.000*
HIV Prevention information (total: 0–30)	16.02 ± 3.57	22.54 ± 3.3	-9.44	0.000*

\*P < 0.001

Table 2

*Comparison of the Mean Scores on Sexual and Reproductive Health (SRH) Promotion and HIV Prevention*

*Motivation (Attitude, Perceived Social Support, Behavioral Intention) and Behavioral Skills of the Early Adolescents*

*Before and After Training (n = 102), (Hong et al., 2010).*

Variable	Before Training	After Training	T-Value	P-Value
	Mean ± STD	Mean ± STD		
Personal attitude towards SRH promotion and HIV prevention (Total: 32–160)	109.76 ± 11.88	126.61 ± 13.86	-10.08	0.000*
Perceived social support towards SRH promotion and HIV prevention (Total: 7–35)	20.02 ± 5.12	26.94 ± 4.43	-10.32	0.000*
SRH promotion and HIV prevention behavioral intention (Total: 12–60)	43.97 ± 9.45	51.50 ± 6.99	-6.47	0.000*
Perceived self-efficacy in relation to carrying out SRH promotion and HIV prevention behavioral skills (Total: 16–80)	54.36 ± 10.19	66.93 ± 8.19	-10.66	0.000*

\*P < 0.001

Tables 1 and 2 from Hong et al. (2010) display the significance of health and wellness education programs on altering negative health outcomes into positive health outcomes by focusing on health promotion that impacts the attitudes and behavioral skills of the participants in the health and wellness education program. Sexual reproductive health significantly impacted the behavioral intentions and attitudes of the adolescents who participated in Hong et al. (2010) research study. Interestingly, Hong et al. (2010) reviewed perceived self-efficacy in relation to carrying out SRH promotion and HIV prevention behavioral skills. After participating in the health and wellness education program, adolescents' perceived self-efficacy in relation to carrying out SRH promotion and HIV prevention behavioral skills increased.

The results experienced in China have the potential to occur in Malawi with effective implementation of successful health and wellness education programming. In addition to China's success, Zimbabwe is an excellent case to demonstrate the successful impact of health and wellness education programs on negative health outcomes. Similar to Malawi's culture and challenges, Zimbabwe has experienced a positive outcome, which will be presented later in Chapters 3 and 4.

### **Theoretical Framework**

With an emphasis on the Theory of Reasoned Action (TRA), the theoretical framework of this paper is centralized around the premise that health and wellness education programs could play a momentous role in helping Malawians aged 15–49 years to develop and cultivate risk perceptions<sup>4</sup> that could assist and impact their decisions to avoid risky sexual behaviors. Figure 1 exemplifies the approach and theoretical framework for this study. The TRA was utilized to

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<sup>4</sup> Peter-Kohler, Behrman, and Watkins (2007) defined a risk perception as an individual's subjective perception of HIV/AIDS infection. They concluded in their study that individuals assess their risk of HIV/AIDS infection through interactions with others in their social networks (Peter-Kohler et al., 2007).

analyze the potential impact of the implementation of health and wellness education programs on the HIV/AIDS pandemic in Malawi.

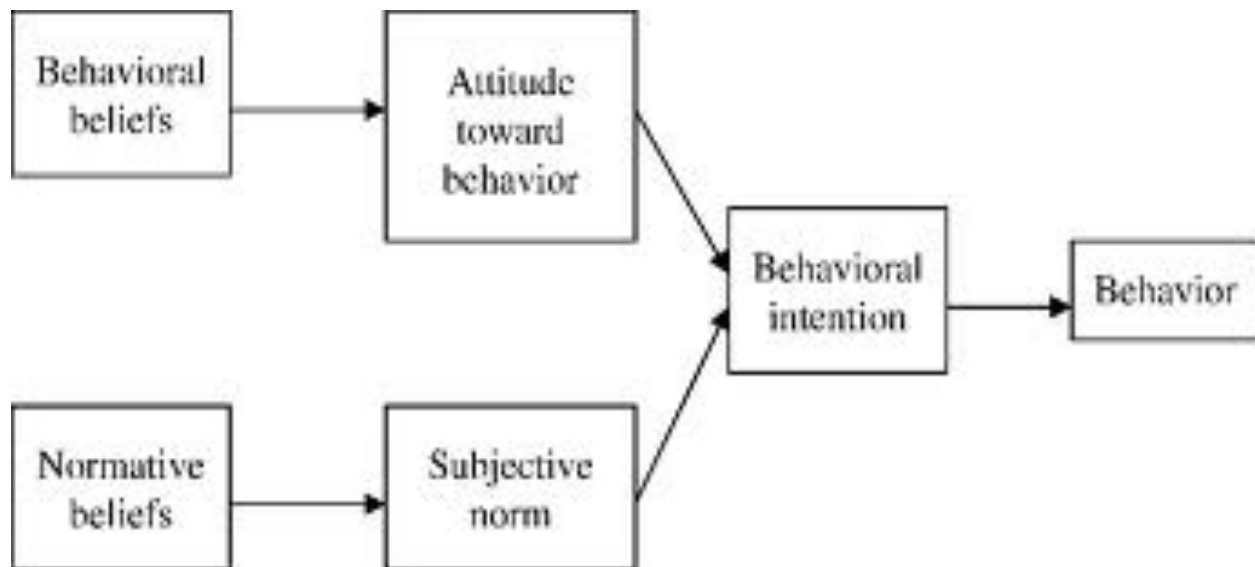


Figure 1. Theory of Reasoned Action displaying behavior change. Taken from Ajzen, I., & Fishbein, M. (1980). *Understanding Attitudes and Predicting Social Behavior*. Upper Saddle River, NJ: Prentice Hall.

According to Ajzen and Fishbein (1980), the TRA is defined as an actor's voluntary behavior being predicted by his or her attitude toward that behavior and how they think other people will view them if they performed that behavior. Health and wellness education programs can impact Malawians attitudes and risk perceptions of risky sexual behaviors.<sup>5</sup> This is critical because this impact enables health and wellness education programs to serve as an intervention to transform the behaviors and attitudes of Malawians towards HIV/AIDS. Numerous

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<sup>5</sup> In Malawi, health and wellness education programs can educate Malawians about the causes and consequences of HIV/AIDS, and the context of the HIV/AIDS environment in Malawi, which will assist Malawians in rationalizing avoiding risky sexual behaviors.

researchers examining the HIV/AIDS pandemic in the sub-Saharan region have extended this theory and applied it to research on planned behavior. For instance, Green, Hale, and Rubin (1997) extended the theory of reasoned action to the context of using condoms. Green and colleagues' (1997) study focused on the role of subjective norms and attitudes towards behavior to predict behavioral intentions and risk avoidance behavior. The results of this study indicated that perceived behavioral control was related to condom use intentions and condom use. Additional studies have utilized the TRA to evaluate the attitudinal and normative influences in condom usage and the avoidance of partaking in risky sexual behaviors.

According to Green and colleagues' (1997) perspective of the TRA, a person's behavioral intent is determined by the individual's attitude toward the behavior and subjective norm.<sup>6</sup> Subjective norm plays a critical role in the HIV/AIDS context in Malawi. The subjective norm has an immense impact on Malawians participation in risky sexual behaviors and condom usage. The perception and their connotation of participation in risky sexual behaviors and condom usage within the Malawians' community directly influences their rationalization of engaging in such behaviors. The impact of the subjective norm on Malawians' rationalization to partake in risky sexual behaviors and its impact on the HIV/AIDS pandemic will be discussed in more detail in Chapter 4.

Based on previous literature and the theoretical framework for this study, health and wellness education programs should be implemented into all Malawian schools to change the attitudes and behaviors of Malawians and ultimately, help decrease the number of new incidences of HIV/AIDS by influencing the subjective norm. Health and wellness education programs can serve as a behavioral intervention to change behavioral intentions among

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<sup>6</sup> Green et al. (1997) defined subjective norm as the perception that others think he or she should engage in the behavior.

Malawians through the processes of dialogue.<sup>7</sup> A behavioral intervention is an interchangeable term for self-management<sup>8</sup>, which is the combination of health behavior and disease management. Self-management has three critical components: (1) behavioral management, (2) role management, and (3) emotional management (Lorig & Holman, 2003). According to Lorig and Holman (2003), the issue of self-management is a critical concern for those with chronic diseases. Implementing health and wellness education programs into Malawian schools will teach self-management. Health and wellness education programs can assist in the construction of self-efficacy for Malawians because self-efficacy<sup>9</sup> is a product of good self-management (Lorig & Holman, 2003).

In relation to sexual decision making, self-management and self-efficacy are vital tools to increasing an individuals' resiliency against the HIV/AIDS pandemic in Malawi. As a result of the large role that the subjective norms plays on Malawians' rationalization process, self-management skills and self-efficacy are critical in providing Malawians with the resources and knowledge to understand the value and benefits of avoiding participating in risky sexual behaviors.

Figure 1 illustrates the premises of the TRA and the process through which reasoned action. In order to change Malawians' risk perceptions about HIV/AIDS and attitudes toward HIV/AIDS, health and wellness education programs must be implemented in Malawian schools to educate students about the causes and consequences of HIV

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<sup>7</sup> According to Park (2000) and McLaughlin (2000), dialogue is defined as "the process of talking together in a way that allows individuals to understand the thoughts, feelings, and values amongst themselves, and others, facilitating a joint construction of meaning that possibly transforms our understanding. It aims to narrow the gap between differing perceptions and to engage participants in questioning assumptions and paying attention to the factors. By voicing their concerns/problems/experiences, their capability for agency is often enhanced and they may begin to reflect on and become critical about their situations and see how social, historical, and economic conditions impact them. This awareness could possibly prompt them towards devising solutions to their predicaments; a process that Friere (1970) called conscientisation. Essentially, then, dialogue could become a prelude to the much needed behavior change in HIV/AIDS prevention" (Kiragu & McLaughlin, 2011, pg. 420).

<sup>8</sup> Self-management is defined as the act of engaging in health promotion (Lorig & Holman, 2003).

<sup>9</sup> Self-efficacy is defined as the belief in one's ability to organize and execute the course of actions required to produce given attainments. Self-efficacy is associated with changes in health behavior and health status (Lorig & Holman, 2003).



and AIDS to equip them with the self-management skills and change their normative beliefs. As a result, the change in beliefs will alter their attitudes and behavioral intentions resulting in Malawians avoiding risky sexual behaviors. The illustration suggests that the TRA provides a potentially useful conceptual framework for interventions to change key HIV/AIDS behaviors, beliefs, and attitudes in Malawians.

*Figure 2 Map of Malawi. Taken from Mapsopensource.com*

### **Research Questions**

The following research questions were addressed to determine the potential benefits of implementing health and wellness education programs in all Malawian schools.

1. Can health and wellness education programs serve as a strategic intervention to decrease the number of new incidences of HIV/AIDS in adults aged 15–49 years?
2. What are the potential incentives of implementing health and wellness education programs in Malawian schools?

### **Study/Research Limitations**

There were numerous limitations on the availability of data for this research study. As an example, I relied heavily on seroprevalence data from Malawi and Zimbabwe to evaluate the potential benefits of health and wellness education programs on the number of new incidences of HIV/AIDS in Malawi.

Former studies that have examined the HIV/AIDS pandemic in Malawi have been limited by the fact that seroprevalence data is the only data available for Malawi. In fact, Kelly (1999) noted that the limited availability of systematic data on populations in the sub-Saharan region presents a significant limitation to researchers. Without a standard method of calculating the total population, the Malawian government and international public health



agencies are unable to accurately collect data on the number of persons living with HIV/AIDS in Malawi.

Coupled with relying on seroprevalence data and the Malawi Global Aids Response Progress Report (Malawi Government, Ministry of Health, 2012), Zimbabwe was utilized as a comparison. Experts cite that Zimbabwe has experienced great success with decreasing the number of new incidences of HIV/AIDS because of its increased efforts in prevention and implementation of health and wellness education programs into all of its schools. Zimbabwe and Malawi share similar demographic characteristics. For instance, similar to Malawi, Zimbabwe has experienced social, political, and economic instability (O'Brien & Broom, 2011). In addition, Zimbabwean agencies are not capable of collecting accurate data (O'Brien & Broom, 2011). Yet, paradoxically, Zimbabwe has experienced a fall in estimated HIV prevalence from 1996-2009 (O'Brien & Broom, 2011). As a result of deliberate interventions, Zimbabwe has been able to experience a decline in HIV prevalence (O'Brien & Broom, 2011). While experiencing social, political, and economic instability between 1996- 2009, the HIV prevalence rate in Zimbabwe dropped from 25% to 13.7% (O'Brien & Broom, 2011). Given Zimbabwe's largely negative international reputation, it is perhaps surprising that the country is now one of the success stories for tackling HIV (O'Brien & Broom, 2011). In contrast to Malawi, Zimbabwe's response to HIV/AIDS has played a key role in its positive outcome for its HIV/AIDS epidemic.

The first case of HIV/AIDS was reported in 1970 in Zimbabwe (O'Brien & Broom, 2011). In 1980, 20,000 cases of HIV/AIDS had been reported (O'Brien & Broom, 2011). By 1989, Zimbabwe had one of the worst HIV epidemics in the world (Buve, 2006). Nevertheless, due to its investment in education, there is increased knowledge and understanding among

Zimbabweans (O'Brien & Broom, 2011). The country's school based HIV/AIDS education has played a vital role in containing the epidemic (O'Brien & Broom, 2011). As a result of school based programs in Zimbabwe, the Zimbabweans adjusted their attitudes towards sexually transmitted infections, (STI's), and sexual behavior negatively(O'Brien & Broom, 2011).

Malawi's HIV/AIDS pandemic represents the significant challenges that the sub-Saharan region faces. Worldwide, 34 million people are currently living with HIV/AIDS, and an average of 7,100 people are newly infected each day in the sub-Saharan region (Malawi Government, Ministry of Health, 2012). According to the Joint United Nations Programme on HIV and AIDS, (UNAIDS) women in sub-Saharan Africa remain disproportionately impacted by the HIV/AIDS epidemic, accounting for 58% of all people living with HIV in the region in 2011(Malawi Government, Ministry of Health, 2012).

Stigma and discrimination continue to impede effective HIV responses. The sub-Saharan region's cultural sensitivity on the discussion of HIV/AIDS and prevention methods are a barrier to the elimination of the stigma that is associated with the disease. According to data collected through the People Living with HIV Stigma Index<sup>10</sup> between 2008-2011, more than half of the people residing with HIV in the sub-Saharan region reported being verbally abused as a result of their status (Malawi Government, Ministry of Health, 2012). Due to the stigma and reluctance to discuss the disease, numerous individuals are not educated properly about the causes and consequences of HIV/AIDS. Consequently, individuals residing with HIV/AIDS are less likely to disclose their HIV/AIDS status due to the possibility of being subjected to the negative stigma and discrimination that HIV/AIDS holds in the sub-Saharan region (Malawi Government, Ministry of Health, 2012), thus contributing to the cycle and spread of HIV/AIDS.

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<sup>10</sup> According to its website, [www.stigmaindex.org](http://www.stigmaindex.org), the People Living with HIV Stigma Index provides a tool that measures and detects changing trends in relation to stigma and discrimination experience by people living with HIV.

During the summer of 2013, I had the opportunity to study abroad in Malawi at Mtendere Village. Mtendere Village is located in Lumbadzi, a suburb, located near the capital city of Malawi, Lilongwe. My field research and submersion within the Malawian culture enabled me to ameliorate the limitations imposed by the lack of available data. In this research study, I utilized my experiences and sociological perspectives that were acquired during my study abroad trip in conjunction with statistics provided by public health agencies to understand and explain key factors that are at work in the HIV/AIDS pandemic in Malawi.

### **Position Statement**

Malawi has one of the highest adult prevalence rates of HIV/AIDS in the world (Malawi Government, Ministry of Health, 2012). In 2005, approximately, 14.1% of the adult population in Malawi was living with HIV/AIDS (Malawi Government, Ministry of Health, 2012).

According to the index of the world's countries with the highest adult prevalence rates, Malawi is ranked within the top ten (CDC, 2013). This high rate represents the severity of the pandemic in Malawi. Although, the highest adult prevalence of HIV/AIDS occur among Malawians aged 15–49 years, HIV prevalence among young people aged 15-19 years of age is increasing (Malawi Government, Ministry of Health, 2012).

Kelly (1999) noted that behavioral change is the only way that is currently available for dealing with a pandemic such as HIV/AIDS because the problem with current prevention methods is the fact that education is not being examined as a vehicle of social change to target adults aged 15–49 years, especially those aged 15–19 years, the highest group of new incidences of HIV/AIDS in Malawi. Many of the adults in this group can be exposed to the knowledge and prevention methods that protect individuals from HIV/AIDS through the implementation of health and wellness education programs into Malawian schools.

First, it is important to utilize the school as an agent of intervention in the HIV/AIDS pandemic in Malawi because students are a captive audience, and the inclusion of HIV/AIDS education in the curriculum would seem to be an efficient and effective use of their time to educate Malawians about condom use and avoiding risky sexual behaviors. Ensuring that the necessary knowledge, skills, and attitudes are inculcated in a manner that will lead to safe sexual behavior calls for a range of learning objectives and related instructional strategies over the entire school cycle.

Second, it is essential to address why adults aged 15-49 years were selected as the target population for strategic intervention. Adults aged 15-49 years were selected as the target group because this age group would be able to materialize the information and knowledge better due to the fact that this age group is more likely to be sexually active.

Third, it is critical for Malawi to utilize its school as a tool to serve as a structured social network<sup>11</sup> to increase the health human capital of Malawians. Health human capital is best described as the optimal social, physical, and intellectual competencies of an individual (Schultz, 2004). In doing so, Malawi will be able to increase knowledge while targeting certain populations due to the data collected on how Malawians form risk perceptions about HIV/AIDS. Schultz (2004) demonstrated in Uganda that health and wellness education programs could be utilized as a strategic intervention in the HIV/AIDS pandemic. Schultz's (2004) and Peter-Kohler et al. (2007) research revealed the impact that education has on the development of risk perceptions and health human capital.

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<sup>11</sup> Peter-Kohler et al. (2007) defined a structured social network as an environment that offers individuals the opportunity to exchange information and evaluate information to learn about the rigidity and flexibility of social norms within their environment, and to influence the attitudes and behaviors of one another. In short, it is a structured social environment where an actor exchanges and evaluates information, then makes a decision based on others in the environment.

According to Schultz (2004) better-educated individuals are more likely to possess human capital that will enable them to possess more social capital such as an education and good health that will increase their resiliency to the HIV/AIDS pandemic. Research has shown that countries in the sub-Saharan region that have invested in their national effort to curtail HIV/AIDS by implementing health and wellness education programs that educate students about condom use and avoiding risky sexual behaviors, have experienced positive results in decreasing the number of new incidences of HIV/AIDS. Implementing health and wellness education programs into Malawian schools would be the best method to address its HIV/AIDS pandemic because of its ability to direct its target at changing factors that impact the pandemic such as interpersonal, organizational, community, and public policy (McLeroy et al., 1988). The proposed model for the health and wellness education program as presented in Chapter 4 suggests that Malawian schools assume appropriate changes in individuals and that the support of individuals in the population is essential for implementing changes (McLeroy et al., 1988). In essence, the success of the implementation of health and wellness education programs depends on the community's support. It is critical for the implementation of health and wellness education programs to have a positive connotation within the community in order for individuals to adopt behaviors that discourage participation in risky sexual behaviors.

## CHAPTER 2: LITERATURE

### **Malawi**

The first case of AIDS in Malawi was reported in 1985 at Kamuzu Central Hospital in Lilongwe, central Malawi. Since 1985, the Malawian government has reported a significant increase in HIV/AIDS among persons aged 15–49 years through the Malawi Demographic and Health Survey (Malawi Government, Ministry of Health, 2012).

HIV/AIDS prevalence in urban areas is twice that of rural areas (Malawi Government, Ministry of Health, 2012). Although HIV/AIDS is more prevalent in urban areas, the number of new incidences is lower in urban areas, while the number of new incidences in rural areas is higher and is steadily increasing (Malawi Government, Ministry of Health, 2012). With regard to geographic location, HIV prevalence in the southern region is twice that of the central and northern regions. Geographic locations play a key factor in the HIV/AIDS pandemic in Malawi. Geographically, urban areas have more resources that decrease the social determinants of being infected with HIV/AIDS<sup>12</sup>. Compared with rural areas, urban areas have better schooling, transportation, housing, and access to healthcare. Thus, the implications for policy, prevention, and public health in relation to schooling, housing, access to healthcare, and transportation are vast for the HIV/AIDS pandemic in Malawi.

This research study recommends that health and wellness education programs be implemented into Malawian schools because these programs have served as successful strategic interventions in other countries in the region like Zimbabwe. The improved effectiveness of programs and the recognition of health education have jointly led to the institutionalization of

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<sup>12</sup> According to the Centers for Disease Control, the social determinants of HIV/AIDS are defined as population health outcomes that are significantly influenced by complex, integrated, and overlapping social and economic systems. These may include one's social hierarchy, conditions for early childhood development, education, employment, income, job security, food security, health services, access to services, housing, social exclusion, and stigma (CDC, 2013).

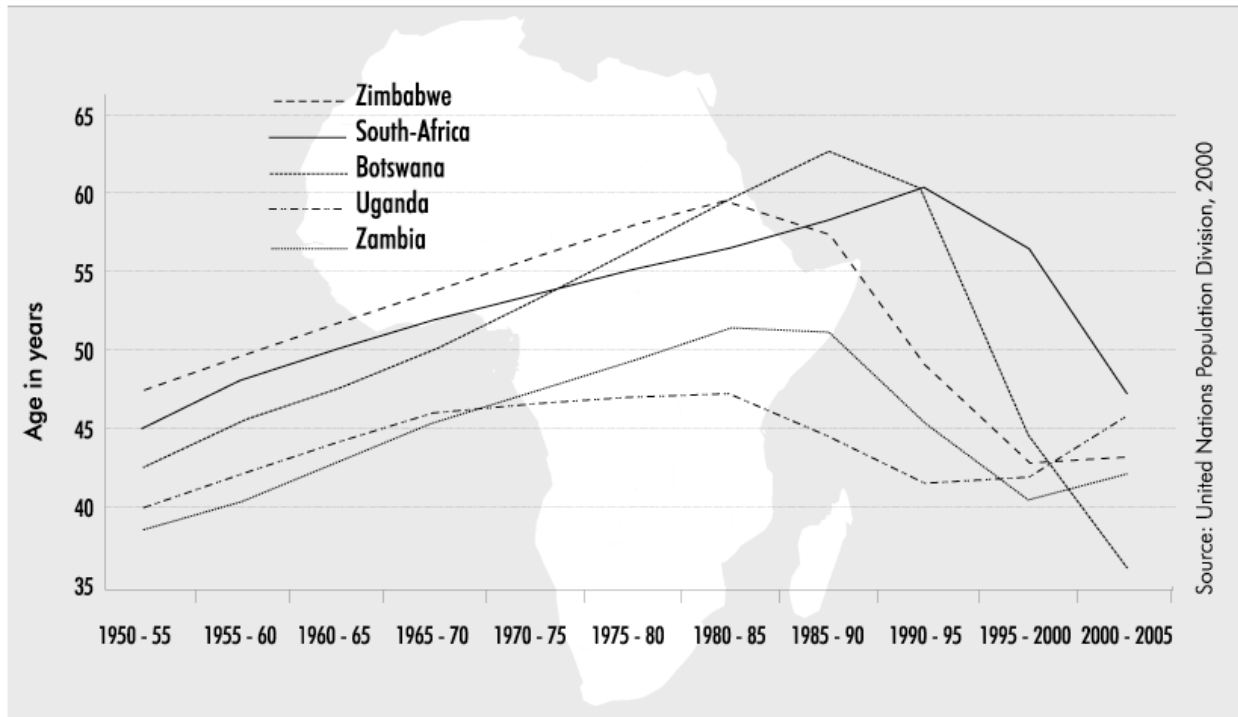
health and wellness education programs in Zimbabwean schools (Johnson & Breckon, 2006; O'Brien & Broom, 2011). Several circumstances have contributed to the HIV/AIDS pandemic in Malawi. The lack of available data on the Malawian population has greatly impacted Malawi's response to the HIV/AIDS pandemic and it has also impacted Malawi's progress in decreasing the number of new incidences. Various research studies that have examined the HIV/AIDS pandemic in the sub-Saharan region have expressed several concerns that define the present environment that the HIV/AIDS pandemic has caused in Malawi. The concerns are poverty, orphanhood, schooling, demographic factors, sexual risks, behavior change, and cultural factors and barriers that impact the context of HIV/AIDS in Malawi.

### **Poverty**

The marginalization of those impacted by the disease has been a major concern for researchers and public health agencies. The HIV/AIDS epidemic in Malawi intensifies social problems such as poverty rates, life expectancy, and orphanhood. Forty eight and a half percent of people who live in the sub-Saharan region live in poverty (CDC, 2013). In 2010, the World Bank reported that Malawi has a poverty rate of 50.7% (CDC, 2013). With a poverty rate above the average rate for countries in the sub-Saharan region, Malawi is ranked as the world's second poorest country (Malawi Government, Ministry of Health, 2012). In addition to high poverty rates, Malawi has a high death rate that is exemplified in its low life expectancy rate.

Figure 2 represents the life expectancy rates from 1950–2005 between countries in the sub-Saharan region. The sub-Saharan region is the only region that has experienced a steep decline after 1980. Since the first report of AIDS in 1985, the country's life expectancy rates have significantly declined, especially following the peak of the pandemic in the 1990s (Malawi Government, Ministry of Health, 2012). Although, Malawi is not shown in Figure 2 because the

data for the country were not collected, Zimbabwe represents the trends of life expectancy rates that occurred after the first case of AIDS were reported in 1980-1996. Malawi's life expectancy rate in 2005 was 41.43. Historically, HIV/AIDS has had a negative impact on life expectancy rates. In fact, the prevalence of HIV/AIDS is a key indicator of a low life expectancy rate (U.S. Government, CIA, 2012).



*Figure 3.* Line graph from the Joint United Nations Programme on HIV and AIDS [UNAIDS] and World Health Organization [WHO] (2001) demonstrating life expectancy rates in the sub-Saharan region in comparison to other developed and developing countries.

### **Orphans**

Coupled with lowering life expectancy rates, the HIV/AIDS pandemic has intensified other social problems such as orphanhood. Unfortunately, the HIV/AIDS pandemic in Malawi



has had a disproportionate impact on children.<sup>13</sup> There are approximately 600,000 orphans in Malawi (Malawi Government, Ministry of Health, 2012). Orphanhood is not a new phenomenon in Malawi, but due to the HIV/AIDS pandemic, the number of orphans has increased significantly (Malawi Government, Ministry of Health, 2012). The first AIDS orphan was reported in Malawi in 1985 and a total of 17 AIDS orphans were identified by December of that year (Malawi Government, Ministry of Health, 2012).

Numerous parents have died and left behind children with their elders who cannot take care of themselves and children who have been left behind by deceased parents (Malawi Government, Ministry of Health, 2012). At the beginning of the pandemic the numbers of orphans were low, but have increased (Malawi Government, Ministry of Health, 2012). The HIV/AIDS pandemic has also increased the number of vulnerable children, those living in households with chronically ill parents or those having lost one of their chronically ill guardians. Inevitably, owing to an overstretched social fabric, some of these orphans and vulnerable children have been left destitute or without proper care and support, which leaves them at risk of abuse and exploitation that may ultimately bring them into a vicious cycle of poverty that could lead to being infected with HIV/AIDS.

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<sup>13</sup> The author's fieldwork was conducted at Mtendere Village, an orphanage located outside of the capital city of Lilongwe in Lumbadzi. Mtendere Village consisted of children who lost their parents or guardians to the HIV/AIDS epidemic.

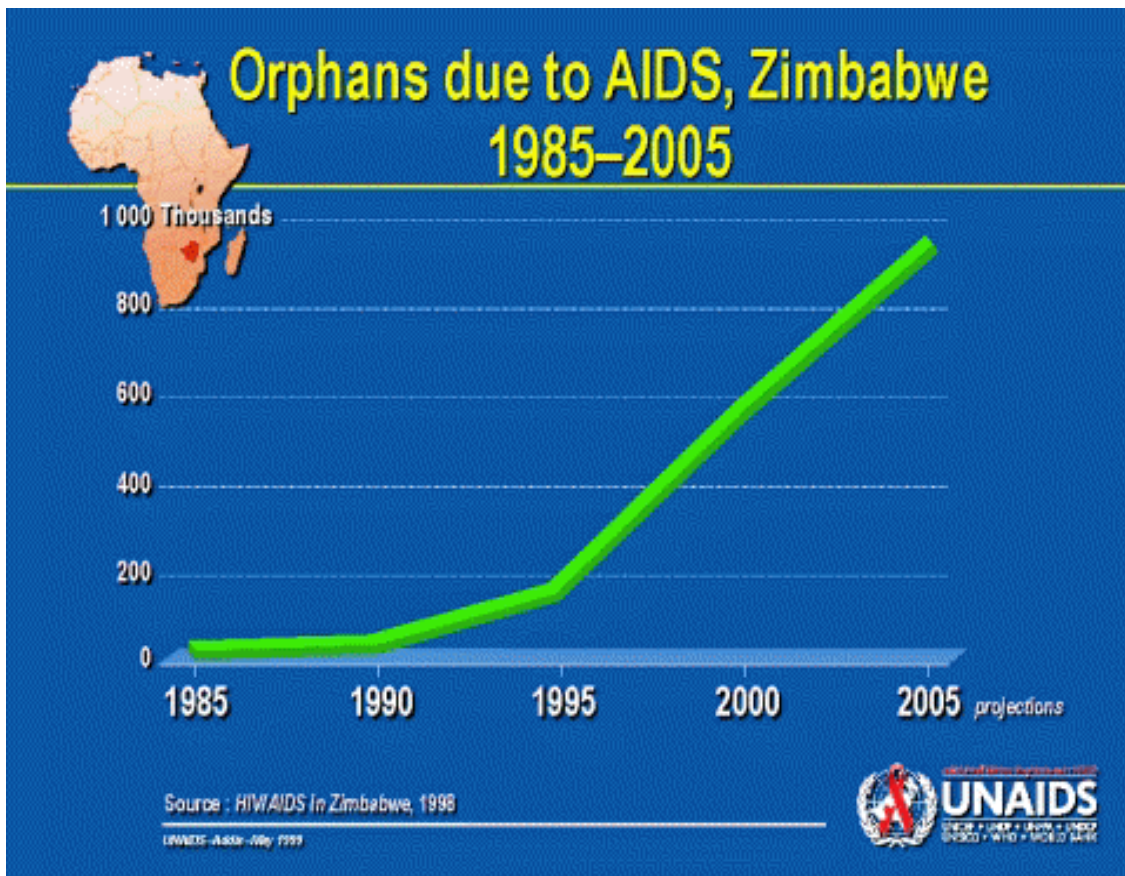


Figure 4. The Increase in the Number of Orphans in Zimbabwe from 1985–2005 (Joint United Nations Programme on HIV and AIDS [UNAIDS] and World Health Organization [WHO] 2001).<sup>14</sup>

Similar to Zimbabwe, Malawi has experienced the same increase in orphans. The increase in the number of orphans due to AIDS has created a ruthless cycle of impoverishment (Joint United Nations Programme on HIV and AIDS [UNAIDS] & World Health Organization [WHO], 2001). The HIV/AIDS pandemic has deepened the plight of orphans by decreasing their opportunities to obtain an education forcing them into child labor subjecting them to a lifelong cycle of poverty.

<sup>14</sup> Due to the lack of available information on Malawi, Figures 3 and 4 were used to illustrate the context of HIV/AIDS in Malawi.

Tables 3 and 4 show data on the number of maternal and paternal orphans living in Uganda. These tables illustrate the impact that the HIV/AIDS pandemic has had on the children in the sub-Saharan region. These tables are from a research study conducted by Kasiyre and Hisali (2010). They examined the socioeconomic impact of HIV/AIDS on education outcomes in Uganda by focusing on key variables such as school enrollment and the schooling gap in 2002–2003. The purpose of their study was to investigate if orphan status impacted schooling enrollment and grade progression. The results depicted that HIV/AIDS orphans are not significantly less likely to continue to schooling, but are more likely to fall below their appropriate grade. Second, the schooling gap increases at higher levels of household poverty where children are less likely to continue schooling.

The tables from the Kasiyre and Hisali (2010) study represent the context of HIV/AIDS in the sub-Saharan region. The sub-Saharan region has been plagued with significant challenges as a result of the HIV/AIDS pandemic. Similar to Uganda, Malawi has experienced the same phenomenon. HIV/AIDS has played a prominent role on schooling in Malawi by impacting school attendance and enrollment. In addition to impacting schooling, the HIV/AIDS pandemic has significantly affected the schooling gap between orphans and non-orphans in the sub-Saharan region.

Figure 5 provides additional evidence of the schooling gap between orphans and non-orphans in the sub-Saharan region. Gunderson, Kelly, and Jemison (2006) discovered that the schooling gap between orphans and non-orphans increases with age. As age increases, the school fees increase and many orphans are forced to quit school. In the case of the sub-Saharan region in Africa, where the price of education serves as a barrier to universal access, many young children are not afforded the opportunity to attend school (Malawi Government, Ministry of

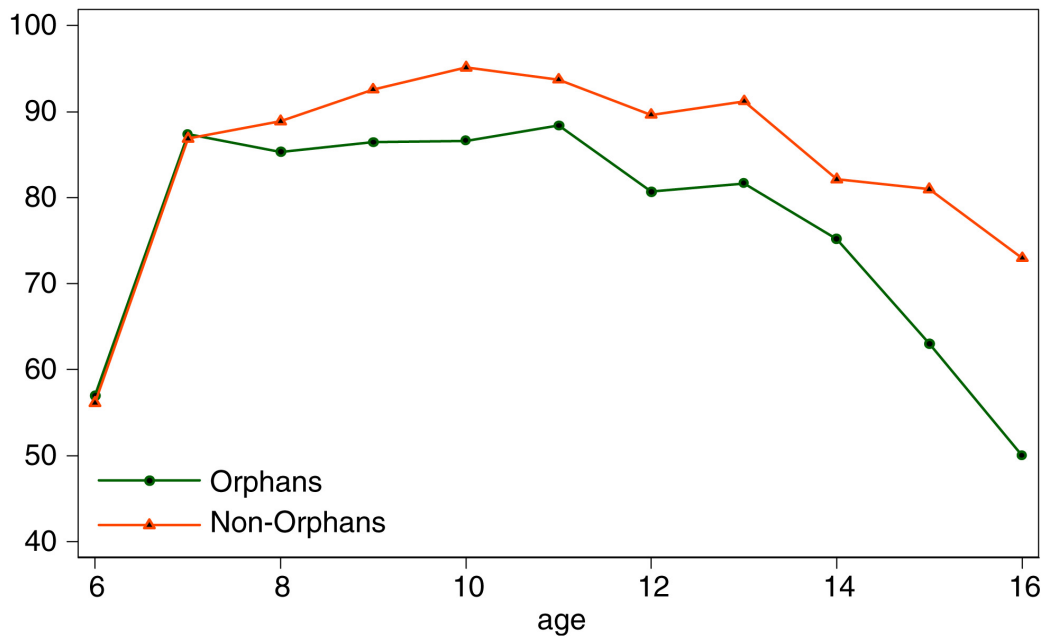
Health, 2012). Due to the laws implemented by the National Plan of Action (NPA), primary schooling is free and children of all ages can attend if they are in walking distance or can obtain transportation to and from school (Malawi Government, Ministry of Health, 2012). The impact of the policy implemented by the NPA is not exemplified in Figure 5. Figure 5 demonstrates that the schooling gap is not equivalent between orphans and non-orphans. However, the schooling gap between orphans and non-orphans significantly increases at the age of 11.

Table 3  
*Profile of HIV/AIDS Female Orphans in Uganda, 2002/2003 (Kasiyre & Hisali, 2010)*

	Rate of HIV/AIDS Orphanhood (%)			
	All AIDS	Type of Orphans Status		
		Paternal	Maternal	Double
Uganda	3.93	1.44	0.51	1.99
Rural	3.63	1.31	0.47	1.86
Urban	6.07	2.36	0.8	2.9
Central	6.32	0.003	0.05	8.129
Eastern	2.52	0.97	0.64	0.91
Northern	2.35	0.72	0.08	1.55
Western	3.88	1.01	0.37	2.5

Table 4  
*Profile of HIV/AIDS Male Orphans in Uganda, 2002/2003 (Kasiyre & Hisali, 2010)*

	Number of AIDS Orphans			
	All AIDS	Type of Orphans Status		
		Paternal	Maternal	Double
Uganda	597,620	218,469	76,972	302,179
Rural	484,408	174,360	62,029	248,019
Urban	113,212	44,109	14,943	54,160
Central	280,948	119,352	33,864	127,732
Eastern	106,694	41,220	27,022	38,452
Northern	66,167	20,325	2,320	43,522
Western	143,811	37,572	13,766	92,473



*Figure 5.* Multiple Line Chart of the Schooling Gap between Orphans and Non-Orphans in the Sub-Saharan Region (Gunderson et al., 2006).

There are a number of initiatives that target orphans and vulnerable children in Malawi. These include the establishment and running of community-based childcare centers and the establishment of childcare institutions. These childcare institutions are also called orphanages. In 2003, the Malawian Government developed the National Policy for orphans and other vulnerable children. In 2005, the Malawian Government, in conjunction with support from UNICEF, developed the National Plan of Action (NPA). The NPA called for urgent attention to interventions supporting children affected by the HIV/AIDS pandemic. The overall goal of the NPA was to build and enhance government, family, and community capacity to enhance the national response for the survival,

growth, protection, and development of children impacted by AIDS. The NPA implemented the Childcare Protection and Justice Act in 2010. This Act provided a comprehensive framework that addressed the issues of children impacted by the HIV/AIDS pandemic. The Act had provisions to protect children from discrimination and exclusion from essential services on the basis of their HIV/AIDS status.

In Malawi, as is the case with other countries, some children are temporarily or permanently deprived of their family environment and such a context necessitates that they be provided with alternative care in an institution. Factors such as HIV/AIDS, child abuse, neglect, endemic poverty, migration and family breakdown have contributed to an increase in the number of children requiring alternative care. A total 6,040 children were in these institutions and 66% of these children were in orphanages. Seventy-one percent of the children in institutions were orphans. Children, including orphans in these childcare institutions, appreciated the fact that they were in institutions because their needs such as food, clothes, and school fees for those in secondary schooling were being met. Childcare institutions in Malawi are contributing significantly towards ameliorating the HIV/AIDS pandemic by addressing the needs of orphans and vulnerable children in Malawi (Malawi Government, Ministry of Health, 2012, pgs. 1-2).

Mtendere Village<sup>15</sup> is an example of the childcare centers that were formed in response to the increased numbers of orphans from the HIV/AIDS pandemic. Mtendere Village is located in the Lumbarzi Community outside of Lilongwe, Malawi. It is home to 140 orphans. At the village the children had a place to play and learn. As opposed to many other child care centers, the children of Mtendere Village attended local, pre-primary school, primary school, and received after-school tutoring and scholarships to secondary schooling. All of their needs were paid for through the sponsorship program 100X Development Foundation located in Montgomery, Alabama. As a result of the sponsorship from 100X, the children at Mtendere Village possessed the necessary tools to provide a future for themselves and for their families. Many orphans in orphanages like Mtendere Village in Malawi and the sub-Saharan region are provided food and shelter, but many are not provided with the opportunity to attend school.

The attendance by children at these centers such as Mtendere Village ensures that orphans especially have access to food at least once a day. There is further evidence that pre-primary schooling as it happens in community-based childcare institutions enhances school readiness, increases enrollment and retention in schools, reduces class repetition, improves academic performance, increases primary completion rates and improves the health and nutrition status of children. A 2006–2007 study commissioned by UNICEF and conducted by the Center for Social Research shows that there are 5,665 community-based childcare institutions in Malawi, with over half of them located in the southern region (Malawi Government, Ministry of Health, 2012, pg.3).

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<sup>15</sup> Mtendere Village is located in the southern region of Malawi in the city of Lumbarzi.

## **School**

A total of 410,000 children were enrolled in community-based childcare institutions in 2006–2007 (Malawi Government, Ministry of Health, 2012). UNICEF estimates that in 2011, a total number of 771,00 children aged 3–5 accessed community-based childcare institutions (Malawi Government, Ministry of Health, 2012). With regard to schooling, orphans and vulnerable children experience a wide range of problems that can affect attendance and enrollment. These include lack of clothes including uniforms, lack of school materials such as exercise books and pens and for those in secondary school, the lack of school fees (Malawi Government, Ministry of Health, 2012). Children lack these things mainly because of prevailing poverty (Malawi Government, Ministry of Health, 2012). There may also be a need for children to forgo school to help with household chores. Hence, orphans and vulnerable children may be at greater risk for dropping out of school.

The 2010 Malawi Demographic and Health Survey<sup>16</sup> looked at school attendance rates for children aged 10–14 by survivorship of parents and orphan/vulnerable child status (Malawi Government, Ministry of Health, 2012). The 2010 Malawi Demographic and Health Survey revealed that orphans are more likely to drop out of school and are more likely to be impacted by the cycle of poverty in Malawi. Due to this, many orphans are more likely to be infected with HIV/AIDS due to their limited social networks (Peter-Kohler et al., 2007), limited human capital, and limited resources to escape the cycle of poverty that is correlated with the HIV/AIDS pandemic in rural Malawi. Unlike many orphans who do not have the opportunity to reside at an orphanage, many of the children of Mtendere Village attend school and are able to obtain food security and an education.

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<sup>16</sup> The 2010 Malawi Demographic and Health Survey revealed that orphans are more likely to drop out of school and are more likely to be impacted by the cycle of poverty in Malawi. Many orphans do not possess the privilege of attending school due to the financial constraints of orphanhood. The financial constraints of orphanhood include the lack of financial resources to provide clothing and food. As a result, many orphans have to quit school to work.



## **Other Demographic Factors**

Indeed, Malawi is one of the world's poorest countries (One World Nations Online, 2013). Ranking 160<sup>th</sup> out of 182 countries on the Human Development Index, progress towards reaching the Millennium development goal of eradicating extreme poverty has been limited (Malawi Government, Ministry of Health, 2012). According to the United Nations Development Programs' Human Development Report for 2009, 74% of the population lives below the income poverty line of US \$1.25 a day and 90% below the US \$2 a day threshold. The proportion of poor and ultra-poor is highest in rural areas of the southern and northern parts of the country (Joint United Nations Programme on HIV and AIDS [UNAIDS] & World Health Organization [WHO], 2001). Indeed it is evident in Kelly (1999) results that the high rate of orphanhood and the demographic, economic, and social effect of HIV/AIDS are working synergistically to affect progress towards the Millennium Development Goals.

Access to assets, services, and economic opportunities is profoundly unequal across the population (U.S. Government, CIA, 2012). Larger households are more likely to be poor, particularly those with many children (Joint United Nations Programme on HIV and AIDS [UNAIDS] & World Health Organization [WHO], 2001). Access to education, a major driver of relative wealth, is highly inequitable as well (Malawi Government, Ministry of Health, 2012). Almost 30% of poor children do not start primary school, which is free in Malawi (Joint United Nations Programme on HIV and AIDS [UNAIDS] & World Health Organization [WHO], 2001). Secondary and higher education is not available to poor households, mainly due to the required enrollment fees (Malawi Government, Ministry of Health, 2012). Limited access to markets and services is another constraint (Malawi Government, Ministry of Health, 2012). Poor rural people tend to live in remote areas with few roads and means of transport, which limits their economic

opportunities (Malawi Government, Ministry of Health, 2012). Access to financial services is severely restricted, especially for smallholder farmers (Malawi Government, Ministry of Health, 2012). The yearly income for the average Malawian is the equivalent of \$320 US dollars (Malawi Government, Ministry of Health, 2012).

Malawi is an overwhelmingly rural country, with 85% of its population residing in the rural areas and approximately 80% engaged in farming as their main occupation (Malawi Government, Ministry of Health, 2012). It is one of sub-Saharan Africa's poorest countries (Bryceson, Bradbury, & Bradbury, 2006). Poor rural people in Malawi are unable to diversify out of agriculture and tend to remain underemployed for part of the year (Malawi Government, Ministry of Health, 2012). More than a third of rural households earn their livelihood only from fishing or farming (Malawi Government, Ministry of Health, 2012). An additional 25% combine work on their farm with other jobs, largely in agriculture (Malawi Government, Ministry of Health, 2012). Other income sources tend to be limited to poorly paid agricultural labor (Malawi Government, Ministry of Health, 2012). Few economic opportunities combined with marked seasonality of rain fed agriculture leads to labor shortages during the critical phases of the cropping season with underemployment for the rest of the year (Malawi Government, Ministry of Health, 2012). School attendance is the lowest during rainy season.<sup>17</sup> Rainy season in Malawi commences in August and ceases in January. Rainy season is characterized by tremendous amounts of precipitation that inhibits transportation by making roads impassable, a significant increase in snakebites, and the frequent closing of schools due to the lack of school buildings.

Despite the availability of technology, the economic productivity of most crops has not improved since the 1970s, largely as the result of soil fertility (Malawi Government, Ministry of

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<sup>17</sup> Mr. Victor, the program director at Mtendere Village, stated that school attendance is the lowest during rainy season due to lack of proper clothing, household chores, and lack of transportation. In addition, many schools do not have buildings. During rainy seasons teachers are unable to teach as a result of the weather.

Health, 2012). Also contributing to the low yields are poor access to financial services, poor water sources, limited access to water, limited access to markets, unfavorable weather, small landholdings, and a limited supply of fertilizers. Post-harvest losses are estimated at 40% of production (Malawi Government, Ministry of Health, 2012).

The recurrence of welfare-depriving processes frustrates attempts to escape rural poverty (Malawi Government, Ministry of Health, 2012). The most common hardships are weather-related, such as crop failures and increases in the price of food (Malawi Government, Ministry of Health, 2012). Illness or injury is very common, as are disruptions associated with death of family members, heightened by the HIV/AIDS pandemic that has affected a large proportion of the population (Malawi Government, Ministry of Health, 2012). Unexpected occurrences often force households to sell assets, thereby undermining their ability to engage in productive activities (Malawi Government, Ministry of Health, 2012). As a result, poor households have to adapt to costly coping strategies such as selling assets, withdrawing children from school and reducing food consumption (Malawi Government, Ministry of Health, 2012).

All of these problems contribute to the increasing number of new incidences of HIV/AIDS. The problem that rests in these social determinants is the key factor that they prevent Malawians from escaping the cycle of poverty. It is essential to address all of these problems in order to help combat the HIV/AIDS pandemic in rural Malawi. Creating an effective response to the HIV/AIDS pandemic in rural Malawi is critical to help relieve the detrimental impact that HIV/AIDS contributes to the global community. The Southern African Migration Project, [SAMP], and International Organization for Migration, [IOM], (2005) indicated that the pathology of the pandemic has become generalized in Malawi; heterosexual sexual intercourse among low-risk individuals is the most common pathway of infection for rural

populations. Thus, behavioral change with respect to sexual relationships, marriage, divorce, condom use, and partner selection is therefore crucial for all efforts targeted at curtailing the disease.

### **Sexual Risks/Behavior Change**

A consistent theme that appears in all background research on the HIV/AIDS pandemic in the sub-Saharan region is the impact of socioeconomic status on the development of risk perceptions about risky sexual behaviors that could lead to HIV/AIDS and its impact on an individual's social network and human capital (Peter-Kohler et al., 2007 and Schultz, 2004). The majority of Malawians' economic security and means to provide a good quality of life has been compromised by the HIV/AIDS pandemic. As with previous studies conducted on the HIV/AIDS pandemic, the impact of social interaction (Delvande & Peter-Kohler, 2009) and (Peter-Kohler et al., 2007), human capital (Watkins, 2004), and the TRA (Ajzen & Fishbein, 1980), help set the stage for the analysis of health and wellness education programs serving as a potential strategic intervention.

Former studies have focused on the implications of structured social interactions for the dynamics of social, cultural, and intellectual change. This line of research in social psychology has demonstrated the influence of social contexts on individuals' behaviors and social influences (Watkins, 2004; Delvande & Peter-Kohler, 2009; Peter-Kohler et al., 2007). In addition, several theoretical frameworks that sought to identify the determinants of risk-taking behaviors in the context of HIV/AIDS, such as rational choice theories (Philipson & Posner, 1993), the health-belief-model (Adih & Alexander, 1999), the TRA (Ajzen & Fishbein, 1980), or the information-motivation behavioral skills (IMB) model (Fisher & Fisher, 1992) emphasized expectations

about AIDS risks as a central prerequisite for behavioral change and have been used as theoretical frameworks for previous studies (Peter-Kohler et al., 2007).

The fact that the highest numbers of new incidences of HIV/AIDS occur in persons aged 15–49 years and pregnant women in rural communities demonstrates the critical need for the Malawian government to invest in its national response to HIV/AIDS by implementing health and wellness education programs into all Malawian schools. The low socio-economic status of women and gender inequalities constitutes some of the major drivers of the pandemic in several ways. For example, barriers to accessing services, and also cultural practices such as widow inheritance, gender based violence and poor bargaining power for condom use or faithfulness reinforces a context that creates lower than expected prevention (Malawi Government, Ministry of Health, 2012). Another factor contributing to high levels of HIV infections is the high prevalence of multiple and concurrent partnerships, which are due to low-levels of risk perception especially among young people and low self-efficacy in general (Malawi Government, Ministry of Health, 2012).

Interestingly, the 2004 and 2010 Malawi Demographic and Health Survey identified that HIV prevalence generally increases with educational level (Malawi Government, Ministry of Health, 2012). Persons with higher educational qualifications are the ones who are at higher risk of contracting HIV and yet are the ones who have the most knowledge about HIV, including how it is transmitted and prevented. Most research on the correlation between socioeconomic status and HIV reveals that persons with a higher socioeconomic status are less likely to be impacted by HIV. Nevertheless, HIV is higher among the more educated in Malawi because Malawians who possess an education are more likely to live in urban areas where interaction with the opposite sex is more acceptable and less supervised.

Table 5 presents data collected from a study examining the relationship between socioeconomic status and the HIV/AIDS pandemic in the sub-Saharan region. The table demonstrates the years of schooling, the years of no schooling and the wealth index in-group 1 which consisted of women. Table 6 illustrates the socioeconomic status and HIV among men in Burkina Faso, Cameroon, Ghana, Kenya, and Tanzania. Tables 5 and 6 show that the countries with the sample population that attain a higher rate of schooling have a higher wealth index. Similar to Tables 1-4, Tables 5 and 6 consist of data about countries in the sub-Saharan region to represent the trend and context of HIV/AIDS in Malawi. Plagued with an increasing rate of new incidences of HIV/AIDS and other chronic diseases such as infant mortality, maternal mortality, and tuberculosis, the countries in Tables 5 and 6 accurately depict the correlation of socioeconomic status and HIV/AIDS in Malawi.

Table 5  
*Sample Means of Socioeconomic Status Group 1, Women* (Marco International, Inc., 2008).

Variable	Burkina Faso	Cameroon	Ghana	Kenya	Tanzania
Full Sample					
Years of schooling	1.38	5.618	5.898	7.122	5.363
Years of schooling = 0	0.803	0.227	0.284	0.128	0.222
Wealth Index	0	0.338	0.337	0.3	0.268
Rural	0.784	0.452	0.516	0.749	0.691
Age	29.119	27.775	29.511	28.546	28.367
Number of Observations	12,477	10656	5,691	8,195	6,893

Table 6

*Sample Means of Socioeconomic Group 2, Men* (Marco International, Inc., 2008).

Variable	Burkina Faso	Cameroon	Ghana	Kenya	Tanzania
A. Men					
Full Sample					
Years of schooling	2.621	7.067	7.751	7.938	6.202
Years of schooling =0	0.652	0.119	0.177	0.067	0.112
Wealth Index	0	0.348	0.344	0.304	0.277
Rural	0.759	0.427	0.551	0.746	0.697
Age	31.31	30.355	31.627	29.565	28.606
Number of Observations	3,605	5,280	5,015	3,578	5,659

Schultz (2004) conducted a research study that employed the concept of health human capital to analyze and examine the socioeconomic impact of HIV/AIDS on education outcomes in developing countries. Schultz utilized Michael Grossman's (1972) paper to build the argument for utilizing the school systems in Uganda as a source of social change to curtail the HIV/AIDS pandemic. Schultz (2004) implicitly stated that persons with a stronger taste for health human capital investments are more likely to migrate out of the high prevalence region and into another region less threatened by the disease. Hence, stating that individuals who possess more social capital such as an education have access to a larger social network, and are more likely to migrate to other areas that are less impacted by HIV/AIDS (Schultz, 2004). Building upon existing social research that supports the notion that education is a key factor in increasing an individual's quality of life by lowering the chances of poverty, Schultz (2004) advocated for the consideration of the utility of schools in discussions pertaining to health and human capital by asserting that education can serve as a source of human capital to increase an

individual's resiliency against of HIV/AIDS. By increasing human capital, you can increase a person's social capital and social network which poses many implications (Schultz, 2004 and Peter-Kohler et al., 2007). While Schultz's (2004) findings asserted the use of education to increase the resilience of HIV/AIDS, Delvande and Peter-Kohler's (2009) study focused on the behaviors of individuals in relation to HIV and AIDS.

Delvande and Peter-Kohler (2009) identified that the adoption of behavioral change in AIDS related behaviors depended critically on individuals' subjective expectations<sup>18</sup> about their own HIV infection status and life expectancy, the prevalence of HIV in the local population, and the availability of antiretroviral treatments for AIDS. The authors employed rational choice theories (Philipson & Posner, 1993), the health belief model (King, 1999), the TRA (Ajzen & Fishbein, 1980), and the TRA (Vallerand, Dshaies, Cuerrier, Pelletier, & Maongeau, 1992), as their theoretical framework to identify the determinants of risk-taking behaviors in the context of HIV/AIDS. Delvande and Peter-Kohler (2009) stated uncertainty in the lives of residents of the sub-Saharan region is a major factor in the instance when the consequences of an individual's behavior depend on the behaviors of others.

### **Cultural Factors/Barriers**

Most literature on HIV/AIDS prevention addresses behavior change. Chilisa (2006) argued that sex education remains one of the greatest challenges for policy makers and practitioners in the sub-Saharan region. The highly polarized abstinence versus condom promotion framing the international HIV prevention debate in recent years (Kirby, 2002, 2008; Underhill, Operario, & Montgomery, 2007; Weed et al., 2007) has not only undermined the importance of broader sexual health education, but arguably also taken us further away from a crucial question such as how to best provide young adults with the necessary skills and

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<sup>18</sup> A subjective expectation (Delvande and Peter-Kohler, 2009) is synonymous to a risk perception (Peter-Kohler et al., 2007).



knowledge to make informed decisions about their sexual behavior and form healthy relationships (Christie & Viner, 2005; Hansen, Mann, McMahon, & Wong, 2004; Kirby 2002, 2008; Kirby, Laris, & Rolleri, 2008).

Interestingly, Delvande and Peter-Kohler (2009) noted that few studies have used well-defined subjective expectations in their analysis of HIV infection risks and the determinants of risk taking behaviors. In most of the previous studies, the methods utilized to elicit probabilistic expectations were implemented in populations with relatively high levels of literacy and numeracy compared to the sub-Saharan African countries where HIV/AIDS is most prevalent, or were limited to small-scale surveys without extensive socioeconomic status or demographic information (Delvande & Peter-Kohler, 2009). This research study is essential because it is one of few that took into account that literacy is defined differently in the sub-Saharan region. Many researchers assume that literacy should be measured in accordance with English; however, many countries in the sub-Saharan region do not have English as their primary language. In a region with very low literacy rates, various researchers have missed the mark in capturing an absolute calculation of the subjective expectations due to this factor. With this in mind, Delvande and Kohler (2009) developed a bean system to measure the subjective interpretations and to eliminate the misinterpretation of a verbal scale in a country with very low literacy.

Because the pandemic has become *generalized*<sup>19</sup> heterosexual sexual intercourse among low-risk individuals is the most common pathway of infections for rural populations (Gouws, Mishra, & Fowler, 2008). Delvande and Peter-Kohler (2009) reported that 17% of respondents in their study used condoms with their spouse. The 2006 Malawi Diffusion and Ideational

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<sup>19</sup> Gouws et al. (2008) utilized the term 'generalized' to illustrate that the epidemiology and discourse of HIV/AIDS has become common in the sub-Saharan region.

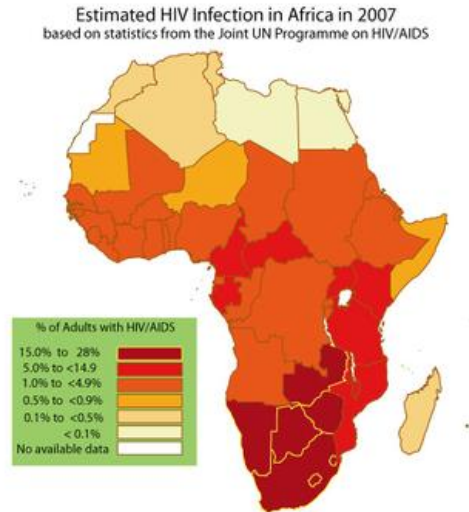
Change Project (MDICP)<sup>20</sup> revealed that 65% of respondents did not believe that it was acceptable to use condoms with a spouse for protection against HIV/AIDS despite the commonality of extra-marital sex in villages (Bryceson et al., 2006). In fact, many villagers view extra-marital sex as an established pattern of behavior because it is an old culture (SAMP & IOM, 2005). Another reason extra-marital affairs are common in villages is due to the financial profit that husbands gain when sharing their wives with richer men (SAMP & IOM, 2005). Nevertheless, there is a gradient by age in condom use expectations exemplifying that younger respondents are more likely to report a positive likelihood of using condoms which reflects changing attitudes and behaviors among young adults (Delvande & Peter-Kohler, 2009). This change in behavior and attitudes among younger respondents is a direct result of the increased efforts to provide education on the causes and consequences of HIV/AIDS in the sub-Saharan region (Delvande & Peter-Kohler, 2009).

### **Proposed Solutions**

Previous research argues that Malawians form risk perceptions through structured social interaction (Peter-Kohler et al., 2007). Ultimately, Delvande and Peter-Kohler (2009) discovered that heterogeneity exists in the beliefs on subjective expectations of being infected with HIV. This can be attributed to differences in socioeconomic status, education levels, and social networks (Peter-Kohler et al., 2007). Figure 6 illustrates that the most HIV/AIDS infections in 2007 occurred in the southern region. Malawi is included in the area that is severely infected with HIV/AIDS.

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<sup>20</sup> The Malawi Diffusion and Ideational Change Project (MDICP) is a longitudinal research project that aims to investigate the multiple processes and influences that contribute to variation in HIV risks in a sub-Saharan African context, identifying prevention strategies for managing risks and assessing the potential effect of HIV risk reduction programs on infection risk and disease dynamics. An unusual feature of the data is information on social networks, which permits examination of the role of social interaction on attitudes related to contraceptive use and family planning as well as AIDS knowledge and risk behavior (Anglewicz, Adams, Obare, Peter-Kohler, & Watkins, 2009).



*Figure 6.* An Illustration of HIV Infection in Africa in 2007. Taken from <http://femonomics.blogspot.com>.

In addition, Delvande and Peter-Kohler (2009) identified that individuals' subjective expectations of being infected with HIV was an underestimation of the accurate probability of becoming infected with HIV. Many participants, mostly women, in the study underestimated their partner's participation in risky sexual behavior, which can be attributed to social desirability and the cultural sensitivity of HIV.

Another report estimates that 5-10% of adults in sub-Saharan Africa are infected with HIV (CDC, 2013). Due to the fact that the primary mode of transmission is heterosexual sex, Oster (2007) emphasized that sexual behavior change should be a major focus of HIV prevention efforts and understanding changes in behaviors to predict the future path of the pandemic, and to develop public health policy. Oster (2007) examined the behavioral responses to the HIV/AIDS pandemic in the sub-Saharan region and noted that little progress has been made in changing individuals' participation in risky sexual behaviors. Unlike the United States, where much progress has been gained in reducing risk behaviors and ultimately reducing the number of new

infections, the sub-Saharan region has seen limited behavior change. Oster (2007) explored the Africa-specific cultural barriers to changing behaviors.<sup>21</sup> Oster (2007) discovered that behavior change is associated with subjective expectations of life expectancy. For instance if individuals perceived a longer life expectancy they were more likely to have an incentive for not participating in risky sexual behaviors that could lead to HIV/AIDS. Numerous people who reside in the sub-Saharan region may be impacted by child mortality, famine, or poverty and are less likely to possess an incentive to avoid engaging in risky sexual behaviors (Malawi Government, Ministry of Health, 2012).

As opposed to evaluating the impact of behavioral change on the HIV/AIDS pandemic in the sub-Saharan region, Watkins' (2004), Schultz's (2004), Peter-Kohler et al.'s (2007) and Delvande & Peter-Kohler's (2009) research studies argued that social interactions are essential for understanding the determinants of individuals' perceptions of becoming infected with HIV/AIDS. According to Watkins (2004) in order to understand the determinants of rural Malawians perceptions of acceptable strategies of prevention, it is essential to understand social interactions. Behavioral change with respect to sexual relationships, marriage/divorce, condom use, and partner selection is therefore crucial for all efforts targeted at curtailing the disease (King, 1999). However, the adoption of behavioral change in AIDS-related behaviors depends critically on individuals' subjective expectations about their own HIV infection statistics, life expectancy, the prevalence of HIV in the local population, and the availability of antiretroviral treatments for AIDS (Delvande & Peter-Kohler 2009). Bennell, Hyde, and Swainson (2002) emphasized that school-based programs also provided the opportunity to start educating children at an early age. Research shows that sexual and reproductive health education is likely to be

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<sup>21</sup> Oster (2007) defined cultural barriers as the lack of knowledge about HIV/AIDS, limited bargaining power for women, and fatalism that exists in rural communities due to high infant and maternal mortality rates, HIV/AIDS, malnutrition, and malaria.

more effective if it is started before children become sexually active and have already acquired attitudes and practices that are often counterproductive to positive behaviors and attitudes (King, 1999).

Kasiyre and Hisali (2010) revealed that 23 million of the 34 million of residents residing with HIV/AIDS in Africa reside in the sub-Saharan region and one of the biggest impacts that HIV/AIDS has had on the sub-Saharan region is the increasing number of orphans. The research conducted by Kasiyre and Hisali (2010) provided evidence for the necessity of implementing health and wellness education programs into all Malawian schools to decrease the number of orphans who could potentially increase the new incidences of HIV/AIDS, essentially arguing the importance for schooling for all children in the sub-Saharan region to curtail the HIV/AIDS pandemic. Kasiyre and Hisali (2010) stated that ensuring schooling for all children would decrease the number of orphans; thus decreasing the new incidences of HIV/AIDS in the sub-Saharan region.

It is through the process of social interaction and forming social networks that establishes the validation for health and wellness education programs in all Malawian schools (Peter-Kohler et al., 2007). Health and wellness education programs can function as a tool for social change to curtail the HIV/AIDS pandemic by educating students through exposure to the consequences of the disease and prevention methods such as condom use. Most research that has examined the impact of the HIV/AIDS pandemic in the sub-Saharan region has noted that the HIV/AIDS pandemic has played a major role on the education sector in Malawi. Kelly (1999) noted that behavioral change is the only way currently available for dealing on a large scale with the pandemic, and that the ones likely to be HIV-free are those in the primary and lower secondary

school age groups. Thus, Kelly (1999) stressed the urgent need to make school systems proactive in communicating health education about HIV and AIDS.

The HIV/AIDS mortality rates are significant and have resulted in small student intakes that could possibly lead to a reduction in the number of school aged children and an increase in the number of orphans; thus leading to more young adults who could be impacted by the HIV/AIDS pandemic. Bennell et al. (2002) argued that it is necessary to institute sexual and reproductive health in schools and school based HIV/AIDS education and prevention could reduce risky behaviors and promote a decrease in HIV infection, promote positive attitudes and behaviors that will promote abstinence, chastity and safer sex, contribute to the creation of an environment in which the children are not being subjected to involuntary sexual activity and help students to avoid infection through involuntary contact with contaminated body fluids. Social scientists typically assume that individuals use available information to form subjective expectations about uncertain events, and rely on these expectations to make decisions (Green et al., 1997; Peter-Kohler et al., 2007).

In sum, knowing individuals' expectations is therefore crucial to making accurate inferences about the determinants of an individual's behavior (Kelly, 1999). Indeed, knowing an individuals' expectation is critical to making inferences about the determinants of their behavior. However, it is pointless to analyze these expectations without making a resolution to ensure the individuals' expectations are accurate so that they can make informed decisions and behave in a way that makes them resilient to the HIV/AIDS pandemic. The implementation of health and wellness education programs in all Malawian schools will enable public health agencies to accurately assess and influence individuals' expectations, attitudes, and behaviors towards the HIV/AIDS pandemic. The transformation of attitudes and behaviors that may result in the

avoidance of risky sexual behaviors is essential in decreasing the number of new incidences of HIV and AIDS among Malawians.

## CHAPTER 3: DATA AND METHOD

### Introduction

The primary goal of this study is to suggest a course of action with informed policy suggestions to assist Malawi in decreasing the number of new incidences of HIV/AIDS among adults 15–49 years of age. In this chapter, the variables presented in chapters 1 and 2 that were labeled, as the social determinants of health will be discussed. The variables selected for review were chosen on their ability to illustrate the impact and scope of the HIV/AIDS pandemic in Malawi and how HIV/AIDS can be ameliorated in Malawi. The TRA will be utilized to explain the correlation between behavioral interventions and behavior change to promote a social policy that includes implementing health and wellness education programs in Malawian schools.

Employing secondary data analysis, I utilized the data from the Malawi Demographic and Health Survey, 2004, 2010 (World Health Organization, World Health Survey, 2004, 2010), in comparison to data from the Zimbabwe Demographic and Health Survey, 2005–2006, 2010–2011 (World Health Organization, World Health Survey, 2005–2006, 2010, 2011) to evaluate the following research questions: (1) Can health and wellness education programs serve as a strategic intervention to decrease the number of new incidences of HIV/AIDS in adults aged 15–49 years and (2) What are the potential incentives of implementing health and wellness education programs in Malawian schools?<sup>22</sup>

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<sup>22</sup> From the National Statistical Office (NSO) and ICF Marco. Copyright 2011. *Malawi Demographic and Health Survey 2010*. Zomba, Malawi, and Calverton, Maryland, USA: NSO and ICF Marco. Adapted with permission.

From the National Statistical Office (NSO) & ORC Marco. Copyright 2005. *Malawi Demographic and Health Survey, 2004*. Calverton, Maryland: NSO and ORC Marco. Adapted with permission.  
From the Central Statistical Office (CSO) [Zimbabwe] and Marco International, Inc. Copyright 2007. *Zimbabwe Demographic and Health Survey 2005-06*. Calverton, Maryland: CSO and Marco International Inc. Adapted with permission.



Malawi is being compared to Zimbabwe because there is data available in Zimbabwe that shows a positive outcome in AIDS reduction and Malawi and Zimbabwe have important similarities. Coupled with this, Zimbabwe has managed to decrease its HIV prevalence rate during 1996-2009 from 25% to 13.7% despite political and economic instability. Additionally, through fieldwork during my stay at Mtendere Village, I was able to observe the phenomenon and this added to my ability to interpret the data.

Demographically, Malawi and Zimbabwe have similar characteristics. For instance, due to the similarities in culture, economy, and politics, Zimbabwe has a large Malawian diaspora and Malawi has a large Zimbabwean diaspora (Kishor, 2005). This fact is extremely critical in selecting a unit of analysis that mirrored Malawi culturally. In addition to sharing demographic similarities, Zimbabweans and Malawians have been subjected to famine, extreme poverty, and high prevalence rates of HIV/AIDS. Many countries in the sub-Saharan region have been impacted by high prevalence rates of HIV/AIDS, famine, and extreme poverty. Nevertheless, the scope and dynamics to which these phenomena have occurred in Malawi and Zimbabwe are identical (Asiedu, Asiedu, & Owusu, 2012). Although Zimbabwe and Malawi share these characteristics, Zimbabwe has utilized key resources such as its education system and government to develop policies that incorporated health and wellness education programs into its schools. Consequently, this action aided Zimbabwe significantly because it decreased its number of new incidences of HIV/AIDS in the midst of political and economic instability (O'Brien & Broom, 2011). As a result of Zimbabwe's success with decreasing the number of new incidences of HIV/AIDS and its demographic characteristics that are similar to Malawi,

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From the Zimbabwe National Statistics Agency (ZIMSTAT) and ICF International. Copyright 2012. *Zimbabwe Demographic and Health Survey 2010-2011*. Calverton, Maryland: ZIMSTAT and ICF International Inc. Adapted with permission.

Zimbabwe was selected as the unit of analysis to be compared to Malawi for missing data to suggest informed policy and a course of action for Malawi's HIV/AIDS pandemic.

This research study explored the potential impact of health and wellness education programs on the number of new incidences of HIV/AIDS in Malawi by comparing the HIV prevalence rates in Malawi to HIV prevalence rates in Zimbabwe. The trend of HIV prevalence rates can be utilized in the TRA to explain the context of HIV/AIDS in Malawi as it relates to behavior change.

**Malawi Demographic and Health Survey, 2004, 2010 and Zimbabwe Demographic and Health Survey, 2005–2006, 2010–2011<sup>23</sup>**

The Malawi Demographic and Health Survey, 2004, 2010 and the Zimbabwe Demographic and Health Survey, 2005–2006, 2010–2011 were utilized as the data sources for this study. The WHO published the surveys in 2004 for Malawi and 2005–2006 for Zimbabwe. The surveys represent the comprehensive data report of HIV/AIDS in Malawi and Zimbabwe and the attitudes towards HIV/AIDS. The process of data collection is assigned to the country's government. For instance, the WHO funds the data collection and gives the country the task of establishing and developing its own method of collecting data about its country. Contrary to

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<sup>23</sup> Tables 7-25 are taken from the Malawi Demographic and Health Survey, 2004, 2010 and Zimbabwe Demographic and Health Survey, 2005–2006, 2010–2011. World Health Organization, World Health Survey. (2004). Malawi Demographic and Health Survey. [MWI 2003 WHS Strata 8 Datafiles [ .dta]] Retrieved from [http://apps.who.int/healthinfo/systems/surveydata/index.php/access\\_licensed/track/816](http://apps.who.int/healthinfo/systems/surveydata/index.php/access_licensed/track/816). World Health Organization, World Health Survey. (2005–2006). Zimbabwe demographic and health survey. Retrieved from <http://www.measuredhs.com/pubs/pdf/FR186/FR186.pdf>. World Health Organization, World Health Survey. (2010). Malawi demographic and health survey. Retrieved from <http://dhsprogram.com/pubs/pdf/FR247/FR247.pdf>. World Health Organization, World Health Survey. (2010–2011). Zimbabwe demographic and health survey. Retrieved from <http://dhsprogram.com/pubs/pdf/FR254/FR254.pdf>.

Malawi, Zimbabwe has utilized the funds effectively from the WHO to gather information about its population. Zimbabwe effectively coordinated with other agencies such as civil society organizations (CSOs), schools, and community centers to accurately collect data. Due to this, Zimbabwe was able to decrease social desirability in response to questions about culturally sensitive topics.

Malawi did not utilize CSOs or alternative independent agencies outside of the government to collect data about its population. Instead, the Ministry of Health in Malawi collected the data. It is my belief that this increased social desirability among the participants who did not want to be subjected to being discriminated against or marginalized due to their HIV/AIDS status or attitudes towards HIV/AIDS. The impact that social desirability had on data collection is exemplified in the results reported and published by the WHO.

The variables that I utilized from the Zimbabwe Demographic and Health Survey, 2005–2006 included information that was collected on sexual activity, comprehensive knowledge of HIV/AIDS, adult support of education about condom use, HIV prevalence, and risky sexual behaviors regarding HIV/AIDS and other sexually transmitted infections. It is important to note that the Zimbabwe Demographic and Health Survey, 2005–2006 was the first survey in Zimbabwe to provide population-based estimates for HIV among women and men aged 15–49 (World Health Organization, World Health Survey, 2005-2006). I selected the Zimbabwe Demographic and Health Survey, 2005–2006, for comparison as a result of the assertion of Cohn, Russell, Baker, Kayongo, Wanjiku, and Davis (2011) that community coordination with civil society organizations (CSOs) is the best way to increase and sustain health investments. CSOs have played a key role in connecting communities to care in helping patients navigate health systems (Patcharanarumol, 2008) and in successfully implementing health programming

(Carter, 2008; Cornell & Shankland, 2008; Kohn, 2008). The Zimbabwe Demographic and Health Survey is a great example of effectively utilizing CSOs to maximize health investments.

The Zimbabwe Demographic and Health Survey, 2005–2006 consisted of a representative sample of 10,800 households (World Health Organization, World Health Survey, 2005–2006). Three questionnaires were utilized for the 2005–2006 Zimbabwe Demographic and Health Survey. In addition, three language versions of the questionnaires were produced: Shona, Ndebele, and English.<sup>24</sup> The household<sup>25</sup> response rate was 95%.

I utilized the data from the Malawi and Zimbabwe Demographic and Health Surveys to review trends in condom usage and HIV prevalence, which were labeled as the social determinants in Chapter 2, in order to evaluate the trend of HIV/AIDS in Malawi in comparison to Zimbabwe. My analysis highlighted that HIV prevalence is increasing in Malawi. The increase in HIV prevalence rates in Malawi is demonstrated in the Malawi Demographic and Health Survey, 2010. In comparison to Zimbabwe, Malawi has made little progress. Zimbabwe has instituted a complex interplay of policy and health and wellness education programs that target individual behavior change, and economic patterns that have shaped the epidemiological waning of HIV prevalence in Zimbabwe (O'Brien & Broom, 2011). In the 2005–2006 the Zimbabwe Demographic and Health Survey published a HIV prevalence rate of 18%. In the 2010–2011 the Zimbabwe Demographic and Health Survey published a 15% HIV prevalence rate. In the three years, Zimbabwe has managed to decrease its HIV prevalence rate by 3% (World Health Organization, World Health Survey, 2010–2011) by transforming its national

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<sup>24</sup> As previously stated in chapter 2, literacy needs to be addressed for research conducted on the sub-Saharan region. Many researchers develop questionnaires without taking into consideration the native language of the country. The Zimbabwe Demographic and Health Survey took this thought into account when developing its questionnaires.

<sup>25</sup> The Zimbabwe Demographic and Health Survey, 2005–2006 defined a household as “a person or group of related and unrelated persons who live together in the same dwelling unit(s), who acknowledge one adult male or female as head of household, who share the same housekeeping arrangements, and who are considered one unit. A member of the household is any person who usually lives in the household, and a visitor is someone who is not a usual member of the household but had slept in the household the night before the interview date” (World Health Organization, World Health Survey, 2005–2006, pg. 9).

response to HIV/AIDS shifted from a biomedical approach, focusing more on disease control, to a social and behavioral change approach. The incentives of this transition are displayed in this chapter. I suggest that if Malawi emulates Zimbabwe's response to its HIV/AIDS pandemic, Malawi can experience a decrease in the number of new incidences of HIV/AIDS.

### **Available Data from Malawi**

Data from the Malawi Demographic and Health Survey 2004 will be compared to data from the Zimbabwe's Demographic and Health Survey, 2005–2006. The tables presented in this chapter will be analyzed in terms of effectiveness of the health programs and policies implemented by the Zimbabwean government. Specifically, I will be comparing HIV Prevalence rates, and condom usage trends from the Malawi Demographic and Health Survey, 2004 to the Zimbabwean Demographic and Health Survey, 2005–2006. Zimbabwe has experienced one of the worst infection rates in sub-Saharan Africa (World Organization, World Health Survey, 2005–2006). Yet, Zimbabwe strongly believed that changing risk behaviors was the most important factor in lowering new incidences of HIV/AIDS among Zimbabweans (O'Brien & Broom, 2011). In doing so, Zimbabwe invested heavily in its national response to its HIV/AIDS pandemic by implementing health and wellness education programs into Zimbabwean schools, which helped to lower the number of new incidences of HIV/AIDS in Zimbabwe.

According to the Centers for Disease Control and Prevention, the social determinants of HIV/AIDS are defined as population health outcomes that are significantly influenced by complex, integrated, and overlapping social and economic systems (CDC, 2013). HIV prevalence, HIV prevention, adult support of education, programs about condom usage, and higher risk sex participation serve as key indicators of population health outcomes that are impacted by overlapping social and economic systems. For the purposes of this study, HIV

prevalence, adult support of education, programs about condom usage, and higher risk sex participation will be labeled as the social determinants for the HIV/AIDS pandemic in Malawi. These social determinants serve as markers for Malawians' human health capital, socioeconomic status, education, conditions for early childhood development, employment, income, food security, and access to services, social exclusion and stigma.

Tables 7–13 include data from the Malawi Demographic and Health Survey, 2004 with variables such as HIV prevalence by sexual behavior, HIV prevalence by socioeconomic status, HIV prevalence by age, risky sexual behaviors, comprehensive knowledge of AIDS, knowledge about HIV prevention methods, and adult support of HIV prevention methods such as condom usage. The data in these tables illustrates the scope of the limitations experienced in this research study. Due to the limited available data on the Malawian population, I utilized available data from Zimbabwe as a proxy to explore the potential impact of implementing health and wellness education programs in Malawian schools. With this in mind, Tables 7–13 represent data collected by the WHO about HIV/AIDS in Malawi. It is important to note that the data presented in the table are skewed by non-representative data collection methods conducted by the Ministry of Health.

Tables 7, 8, 9, 18, and 19 represent the demographic similarities and similarities in the trend of HIV/AIDS between Malawi and Zimbabwe. These tables provide supporting data for the fact that individuals with a higher socioeconomic status are more likely to be HIV positive. In addition, they support the assertion in the literature about HIV/AIDS in the sub-Saharan region that HIV/AIDS prevalence rates are higher among women and men in urban areas. Table 18 demonstrates data that represents a higher HIV prevalence rate for men and women who reside in urban areas in Zimbabwe. Table 8 also represents a higher HIV prevalence rate for men

and women residing in urban areas in Malawi. Table 7 represents HIV prevalence by sexual behavior in Malawi and Table 19 represents HIV prevalence by sexual behavior in Zimbabwe. Table 7 exemplifies that Malawi has lower percentage of HIV positive men and women who have participated in sexual intercourse before the age of 15 and a lower number of participants who participated in higher risk intercourse in the past 12 months. In addition, Table 9 represents HIV prevalence by age for Malawi.

In contrast to 1,682 Zimbabwean women aged 15–19 years who have a positive HIV rate of 6.2%, 500 Malawian women aged 15–19 years have a positive HIV rate of 3.7%. The number of participants that were measured in the Malawi Demographic and Health Survey, 2004 were significantly lower than those measured in the Zimbabwe Demographic and Health Survey, 2005–2006. The Zimbabwe Demographic and Health Survey, 2005–2006 has twice as many participants. Nevertheless, when compared to data published in the 2010 Malawi Demographic and Health Survey, the results of the implementation of health and wellness education programs in Zimbabwean schools is revealed in the decreased number of new incidences of HIV/AIDS.

Tables 20 and 22 represent this trend. In contrast to Tables 20 and 22, Tables 21 and 23 represent a steady increase in the number of new incidences of HIV/AIDS. Tables 12 and 16 are also significant and will be utilized as evidence to suggest the implementation of health and wellness education programs in Malawian schools. Tables 12 and 16 represent comprehensive knowledge about AIDS and a source of condoms among youth in Malawi and Zimbabwe. Table 12 demonstrates significantly lower rates of comprehensive knowledge about HIV/AIDS and a condom source among Malawians. Table 16 demonstrates that Zimbabweans possess a higher rate of comprehensive knowledge about HIV/AIDS and a condom source. Drawing on the data from the Malawi Demographic and Health Survey 2010 in comparison to the Malawi

Demographic and Health Survey, 2004, HIV prevalence has increased significantly while HIV prevalence in Zimbabwe has decreased.



Table 7<sup>26</sup>

## HIV Prevalence by Sexual Behavior (World Health Organization, World Health Survey, 2004)

Sexual Behavior Characteristic	Women		Men		Total	
	Percentage		Percentage		Percentage	
	HIV Positive	Number	HIV Positive	Number	HIV Positive	Number
Age at first sexual intercourse						
<15	18	462	11.7	270	16	732
15–17	14.2	1,063	10.3	841	13	1904
18–19	2.6	472	14.1	508	13.4	981
20+	14.6	99	9.2	539	10.7	739
Higher risk intercourse in past 12 months						
More than secondary/Had higher-risk intercourse	21	171	9.1	488	12	652
Had sexual intercourse, not higher risk	12.8	1,982	12.5	1470	13	3452
No sexual intercourse in past 12 months	21	284	7.9	241	15	525
Number of sexual partners in past 12 months						
0	21	284	7.9	241	15	525
1	13.3	2,135	11	113	12	3849
2	*	18	17.3	210	19.4	227
3+	*	0	4.4	31	4.3	31
Number of higher risk partners in past 12 months						
0	13.9	2,266	11.9	1708	13	3,974
1	19.6	162	10.1	408	12.8	570
2	*	10	3	60	10.7	69
3+	*	0	*	20	*	20
Paid for sex						
In past 12 months	na	na	11.3	123	na	na
Prior to past 12 months	na	na	17.7	343	na	na
Never	na	na	9.9	1733	na	na
Any condom use						
Ever used condom	15.4	263	13.8	103	14.2	1296
Never used condom	14.6	1999	8.9	113	2.6	3112
Never heard of condom	10.3	171	9.7	52	10.2	223
Total	14.4	2438	11.2	2199	12.9	4636

<sup>26</sup> From the National Statistical Office (NSO) & ORC Marco. Copyright 2005. *Malawi Demographic and Health Survey, 2004*. Calverton, Maryland: NSO and ORC Marco. Adapted with permission.

Table 8<sup>27</sup>  
HIV Prevalence by Socioeconomic Status, Malawi (World Health Organization, World Health Survey, 2004)

Background Characteristic	Women		Men		Total	
	Percentage HIV Positive	Number	Percentage HIV Positive	Number	Percentage HIV Positive	Number
<b>Residence</b>						
Urban	18	410	16.3	462	17	872
Rural	12.5	2276	8.8	2003	11	4279
<b>Education</b>						
No education	13.6	667	9.2	295	12	962
Primary	12.3	60690	6.5	550	10	1240
Secondary	13.2	958	10.8	957	12	1916
More than secondary	15.1	370	12.9	662	13.7	1032
<b>Employment</b>						
Currently working	14.6	1545	13.4	1360	14	2904
Not currently working	11.6	1141	6.3	105	9	2246
<b>Wealth Quintile</b>						
Lowest	10.9	455	*	*	8.3	755
Second	10.3	546	33	67	8	1033
Middle	12.7	581	49.4	75.9	12	1149
Fourth	14.6	595	65.1	71.1	13	11159
Highest	18	508			16.4	1054

<sup>27</sup> From the National Statistical Office (NSO) & ORC Marco. Copyright 2005. *Malawi Demographic and Health Survey, 2004*. Calverton, Maryland: NSO and ORC Marco. Adapted with permission.

Table 9<sup>28</sup>*HIV Prevalence by Age, Malawi (World Health Organization, World Health Survey, 2004)*

Age	Women		Men		Total	
	Percentage HIV		Percentage HIV		Percentage HIV	
	Positive	Number	Positive	Number	Positive	Number
15–19	3.7	500	0.4	467	2.1	967
20–24	13.2	661	3.9	442	9.5	1103
25–29	15.5	477	9.8	509	12.6	986
30–34	18.1	382	20.4	397	19.2	779
35–39	17	257	18.4	162	17.7	520
40–44	17.9	235	16.5	242	17.2	477
45–49	13.3	173	9.5	146	11.6	319
Total age 15–24	9.1	1,161	2.1	910	6	2071
Total age 15–49	13.3	2,686	10.2	2,465	11.8	5,150
Total age 15–54	na	na	10.2	2,580	na	na

na = Not applicable

<sup>28</sup> From the National Statistical Office (NSO) & ORC Marco. Copyright 2005. *Malawi Demographic and Health Survey, 2004*. Calverton, Maryland: NSO and ORC Marco. Adapted with permission.

Table 10<sup>29</sup>*Higher Risk and Condom Use at Last Higher Risk Sex in the Past Year Among Young Women and Men, Malawi*

(World Health Organization, World Health Survey, 2004)

Background Characteristic	Women				Men			
	% Engage in higher risk sex in past 12 months	# Sexually active in past 12 months	% Used condom at last higher risk sex	# 15–24 who had higher risk sex in past 12 months	% Engaging in higher risk sex in past 12 months	# Sexually active in past 12 months	% Used condom at last higher risk sex	# 15–24 who had higher risk sex in past 12 months
<b>Age at First Sexual Intercourse</b>								
15–17	44.9	380	37.9	171	98.6	96	28	95
18–19	18.3	715	30.9	131	91.9	127	42	116
15–19	27.5	1095	34.9	302	94.8	223	35.8	211
20–22	8.9	1,614	34.3	144	53.2	249	54.7	133
23–24	6	885	39	53	35	186	66.3	65
20–24	7.9	2,499	25.6	197	45.4	435	58.5	98
<b>Marital Status</b>								
Never Married	99	395	38.5	391	98.5	366	46	360
Ever Married	3.4	3,199	23	108	16.6	292	54	49
<b>Residence</b>								
Urban	22.4	685	48.6	153	74.2	129	58	95
Rural	11.9	2,910	29.2	346	59.2	529	43	313
<b>Education</b>								
No education	5.3		10.4	23		53	15	24
Primary 1-4	7.9	434	21.8	80		187	41.6	110
Primary 5-8	14.2	1,018	30.7	210	46	238	43	151
Secondary +	28.1	1,481	48.9	186	58.5	180	6.5	124
<b>Wealth Quintile</b>								
Lowest	13.2	620	21.6	82	48.2	103	39.7	50
Second	7.6	792	15.1	60	59.4	139	46.4	82
Middle	8.5	776	35.6	66	52.4	138	39.2	72
Fourth	13.1	691	33	91	64.7	123	44.9	79
Highest	28	715	47.5	201	80.5	155	55.4	125
<b>Knows Condom Source</b>								
Yes	13.9	2,827	34.8	394	61.5	591	48.3	364
No	13.8	767	36.5	106	67.8	66	34.4	45

<sup>29</sup> From the National Statistical Office (NSO) & ORC Marco. Copyright 2005. *Malawi Demographic and Health Survey, 2004*. Calverton, Maryland: NSO and ORC Marco. Adapted with permission.

Table 11<sup>30</sup>  
*Adult Support of Education about Condom Use to Prevent AIDS, Malawi* (World Health Organization, World Health Survey, 2004)

Background Characteristic	Women		Men	
	Percent	Number	Percent	Number
<b>Age</b>				
18–19	52.3	1054	62.5	283
20–24	54.1	2870	57.3	587
25–29	50.8	2157	56.6	634
30–39	47.8	2595	55.4	779
40–49	42.5	1684	50.7	464
<b>Marital Status</b>				
Never Married	50.4	863	57.8	720
Ever had Sex	54	459	61.1	542
Never had sex	46.3	404	47.6	179
Married/living together	50.3	8104	55.1	1935
Divorced/separated/widowed	46.5	1393	61.7	91
<b>Residence</b>				
Urban	53.3	1830	56.1	585
Rural	49	8530	56	2162
<b>Education</b>				
No education	42.3	2679	52.1	337
Primary 1–4	48.7	2673	52.5	631
Primary 5–8	53.5	3428	57	979
Secondary +	56.3	1579	59.2	799
<b>Wealth Quintile</b>				
Lowest	45	1830	56.8	329
Second	47.4	2069	53.6	541
Middle	49.8	2132	56.8	604
Fourth	51.4	2062	55.5	590
	54.4	2266	57.2	683

(table continues)

<sup>30</sup> From the National Statistical Office (NSO) & ORC Marco. Copyright 2005. *Malawi Demographic and Health Survey, 2004*. Calverton, Maryland: NSO and ORC Marco. Adapted with permission.

Table 11 (continued)  
Highest

Total 18-49	49.8	10360	56	2747
Total men 18-54	na	na	55.5	2895

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na = Not applicable

Table 12<sup>31</sup>

*Comprehensive Knowledge about AIDS and of a Source of Condoms Among Youth, Malawi* (World Health Organization, World Health Survey, 2004)

Background Characteristic	Women			Men		
	% with Comprehensive Knowledge of AIDS	% Who Know a Condom Source	# 15–24	% with Comprehensive Knowledge of AIDS	% Who Know a Condom Source	#15–24
<b>Age</b>						
15–17	21.5	64	138	35.7	81	367
18–19	20.7	76	1054	33	87.2	283
15–19	21.1	69.1	392	34.5	83.7	650
20–22	25	83	1888	36.1	91	69
23–24	26.6	84	981	42	96.2	218
20–24	25.6	2,499	2870	38.3	92.9	587
<b>Marital Status</b>						
Never Married	24.1	69	1869	37.1	86.7	937
Ever had sex	28	83	600	37.9	91.6	561
Never had sex	22.2	62	1269	35.9	79.2	375
Ever Married	23.3	81	3393	33.7	92.6	300
<b>Residence</b>						
Urban	30.3	82	1063	48	94.5	269
Rural	21.9	76	4199	33.1	86.3	968
<b>Education</b>						
No education	11.8	63	497	19.9	91.8	64
Primary 1–4	16.5	67	1351	22.4	75.8	39
Primary 5–8	0.7	79	2243	37.5	89	493
Secondary +	34.7	89	1170	49.9	96.1	360
<b>Wealth Quintile</b>						
Lowest	17	71	868	33.6	82.8	165
Second	19.1	72	1013	29.6	82.5	248
Middle	22.1	76	1061	34.5	86.7	225
Fourth	24.8	78	1060	35.4	91.4	255
Highest	32	86	1260	44.2	93.1	344
<b>Total</b>	23.6	77	5262	36.3	88.1	1237

<sup>31</sup> From the National Statistical Office (NSO) & ORC Marco. Copyright 2005. *Malawi Demographic and Health Survey, 2004*. Calverton, Maryland: NSO and ORC Marco. Adapted with permission.

Table 13<sup>32</sup>

Knowledge of HIV Prevention Methods, Malawi (World Health Organization, World Health Survey, 2004)

Background Characteristic	Women					Men				
	Using condoms	Limiting sex to one uninfected partner	Using condoms and limiting sex to one uninfected partner	Abstaining from sex	Number of women	Using condoms	Limiting sex to one uninfected partner	Using condoms and limiting sex to one uninfected partner	Abstaining from sex	Number of men
<b>Age</b>										
15–19	55.3	62.1	42	69.2	2392	72.4	74.7	59.4	83.1	650
20–24	61	67.9	50	70.9	2870	79.7	79.7	64.7	92.2	587
25–29	59.4	68.4	48.4	71.6	2157	76.1	76.6	63.5	90.9	634
30–39	55.6	70.8	47	71.4	2595	77	82.2	66.1	90.9	779
40–49	53.6	69.3	44	70.2	1684	71.5	83.9	62.5	92.8	464
15-24	58.4	65.2	47	70.2	5262	75.8	77.1	61.9	87.4	1237
<b>Marital Status</b>										
Never Married	55.1	63.1	43	70.6	1970	74.1	76.2	60.9	87.2	1084
Ever had sex	59.7	65.3	46	73.1	671	76.1	78.7	62.4	88.3	686
Never had sex	52.7	61.9	40	69.4	1299	70.5	71.8	58.3	85.4	398
Married/living together	57.7	68.8	47	70.9	8312	76.4	81.8	64.6	91.4	1936
Divorced/separated/widowed	57.9	67.1	47	69.2	1416	74.4	82.5	65.8	87.9	93
<b>Residence</b>										
Urban	54.8	66.7	45	70.6	2076	73.5	80.2	60.6	90.7	661
Rural	57.8	67.8	47	70.6	9621	76.1	79.8	64.1	89.6	2453
<b>Education</b>										
No education	48.9	62	39	62.9	2734	73.6	71.2	55.5	90.4	350
Primary 1–4	57.3	65.4	50	69.2	2998	73	73.7	59.4	86.1	746
Primary 5–8	61.6	70.9	49	73.3	4154	77.5	82.4	66.3	89	1171
Secondary +	60.1	72.2	89	79	1811	75.8	85.5	66.1	94	845
<b>Wealth Quintile</b>										
Lowest	53.6	63.2	42	67.1	2037	73.9	76	60.8	86.9	383
Second	56.4	64.7	45	67.7	2277	75.9	80.5	65.2	88.7	614
Middle	58.6	68.5	48	70.4	2383	74.8	80.6	62.9	89.5	666
Fourth	59.7	70.5	49	72.4	2361	76.6	79.1	63.1	91.1	666
Highest	57.6	70.2	47	74.7	2639	75.9	81.3	63.7	91.3	785
Total 15–49	57.3	67.6	47	70.7	11698	75.5	79.9	63.4	89.8	3114
Total men 15–54	na	na	na	na	na	75.1	80.2	63.2	89.9	326

na = Not applicable

<sup>32</sup> From the National Statistical Office (NSO) & ORC Marco. Copyright 2005. *Malawi Demographic and Health Survey, 2004*. Calverton, Maryland: NSO and ORC Marco. Adapted with permission.



## **Data from Zimbabwe/Comparison of Effectiveness of Programs**

The following tables contain data from the Zimbabwe Demographic and Health Survey, 2005–2006 and 2010–2011. Data missing from the Malawi Demographic and Health Survey, 2004 and 2010 will be compared to available data from the Zimbabwe Demographic and Health Survey, 2005–2006 and 2010–2011. Tables 15-17 represent the impact that the implementation of health and wellness education programs has had on the attitudes of Zimbabweans about HIV/AIDS and prevention methods. In comparison to Malawi, Zimbabwe has experienced substantial improvement in decreasing the number of new incidences of HIV/AIDS among adults aged (15–49) years. This trend can be explained by the high rate of adults who support HIV prevention methods, comprehensive knowledge about HIV/AIDS, knowledge about HIV prevention methods, and the HIV prevalence rates.

Additional tables (14, 15, 17, 24, and 25) were included in this chapter to exemplify the context of the HIV/AIDS pandemic in Malawi. The tables demonstrate the progress that Zimbabwe has made in comparison to Malawi from 2004-2011. In addition, the tables present the challenges that Malawi faces with its HIV/AIDS pandemic. They highlight the problem that Malawians aren't being educated about the HIV/AIDS pandemic. Tables 12 and 16 demonstrate the impact that the lack of comprehensive knowledge of HIV/AIDS among men and women has on HIV prevalence rates. These tables are critical in justifying the use of health and wellness educations as a strategic intervention to curtail the HIV/AIDS pandemic in Malawi.

Table 14<sup>33</sup>

*Comprehensive Knowledge about HIV/AIDS: Women, Zimbabwe (World Health Organization, World Health Survey, 2005–2006)*

Background Characteristic	Women		Men	
	Has heard of HIV or AIDS	Number of Women	Has heard of HIV or AIDS	Number of Men
<b>Age</b>				
15–24	97.2	4,104	98.6	3,358
15–19	96.5	2,152	97.9	1,899
20–24	97.9	1,952	99.5	1,459
25–29	98.6	11,466	99.7	1,082
30–39	98.5	2,050	99.8	1,545
40–49	98.5	1,287	99.9	878
<b>Marital Status</b>				
Never Married	97.2	2,404	98.6	3,404
Ever had sex	97.8	559	99.6	1,611
Never had sex	97	1,845	97.7	1,793
Married/Living Together	98	5,143	99.8	3,132
Divorced/Separated/Widowed	98.5	1,360	99.6	327
<b>Residence</b>				
Urban	99.2	3,502	99.8	2,767
Rural	97	5,405	98.8	4,096
<b>Education</b>				
No education	95.5	380	96.6	88
Primary	96.2	2,902	97.9	1,782
Secondary	98.9	5,355	99.7	4,588
More than secondary	99.5	270	100	405
<b>Wealth Quintile</b>				
Lowest	96.6	1,552	98.9	1,042
Second	96.2	1,500	98.1	1,137
Middle	97.6	1,546	99.1	1,194
Fourth	98.5	2,006	99.6	1,194
Highest	99.5	2,304	99.8	1,892
Total 15–49	97.9	8,907	99.2	1,599
Total 15–54	na	na	99.2	7,175

na = Not applicable

<sup>33</sup> From the Central Statistical Office (CSO) [Zimbabwe] and Marco International, Inc. Copyright 2007. *Zimbabwe Demographic and Health Survey 2005-06*. Calverton, Maryland: CSO and Marco International Inc. Adapted with permission.

Table 15<sup>34</sup>

*Adult Support of Education about Condom Use to Prevent HIV, Zimbabwe*, (World Health Organization, World Health Survey, 2005–2006)

Background Characteristic	Women		Men	
	Has heard of HIV or AIDS	Number of Women	Has heard of HIV or AIDS	Number of Men
<b>Age</b>				
18–24	41.6	2,871	51.4	2,193
18–19	39.1	919	45	734
20–24	42.8	1,952	54.6	1,459
25–29	41.2	1,466	48.9	1,082
30–39	41.2	2,050	45	1,545
40–49	41.2	1,287	43.8	878
<b>Marital Status</b>				
Never Married	44.7	1,327	50.1	2,240
Married or Living Together	39.7	5,002	45.9	3,132
Divorced/Separated/Widowed	44.2	1,345	53.9	326
<b>Residence</b>				
Urban	47.3	3,506	50.9	2,434
Rural	37.4	4,618	45.9	3,264
<b>Education</b>				
No education	37.7	377	51.2	86
Primary	36.6	2,525	42.9	1,396
Secondary	43.7	4,503	48.9	3,814
More than secondary	52.6	269	56.3	402
<b>Wealth Quintile</b>				
Lowest	96.6	1,353	43.3	828
Second	96.2	1,277	46.8	925
Middle	97.6	1,291	44.8	881
Fourth	98.5	1,755	49.9	1,677
Highest	99.5	1,998	51.3	1,386
Total 18–49	97.9	7,674	48	5,698
Total 18–54	na	na	47.6	6,010

na = Not applicable

<sup>34</sup> From the Central Statistical Office (CSO) [Zimbabwe] and Marco International, Inc. Copyright 2007. *Zimbabwe Demographic and Health Survey 2005-06*. Calverton, Maryland: CSO and Marco International Inc. Adapted with permission.

Table 16<sup>35</sup>

*Comprehensive Knowledge about HIV/AIDS: Youth, Zimbabwe* (World Health Organization, World Health Survey, 2005–2006)

Background Characteristic	Women			Men		
	Percentage with comprehensive knowledge of HIV/AIDS	Percentage who know a condom source	Number of Women	Percentage with comprehensive knowledge of HIV/AIDS	Percentage who know a condom source	Number of Men
<b>Age</b>						
15-19	41.4	62.5	2,152	43.5	73.5	1,899
15-17	39.2	56.1	1,233	41.2	69.2	1,165
18-19	44.3	71	919	47	80.4	734
20-24	46.3	78.2	1,952	48.4	73.3	1,459
20-22	46.4	76.7	1,212	46.3	74.5	928
23-24	46.2	80.6	740	51.9	71.3	531
<b>Marital Status</b>						
Never married	45.5	63.9	2,195	45.7	71.8	2,988
Ever had sex	49.9	79.9	414	47	65.2	1,266
Never had sex	44.5	60.1	1,781	44.7	76.7	1,722
Ever married	41.7	77	1,909	44.9	86.5	370
<b>Residence</b>						
Urban	49.9	75.6	1,711	51.1	76.9	1,279
Rural	39.3	65.9	2,392	42.2	71.3	2,079
<b>Education</b>						
No education	*	*	19	*	*	10
Primary	30.1	60.3	1,077	33	67	852
Secondary	48.5	73.2	2,947	49.4	75.9	2,400
More than secondary	59.5	91.9	60	65.1	71.1	97
<b>Wealth Quintile</b>						
Lowest	31	66.5	660	37.1	72.6	498
Second	38.6	66.2	679	40.6	70.3	550

(table continues)

<sup>35</sup> From the Central Statistical Office (CSO) [Zimbabwe] and Marco International, Inc. Copyright 2007. *Zimbabwe Demographic and Health Survey 2005-06*. Calverton, Maryland: CSO and Marco International Inc. Adapted with permission.

Middle	44	63.7	715	42.2	70.4	710
Fourth	46	71.9	905	51.7	74.7	828
Highest	52.1	76.6	1,146	51.2	77.5	773

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Table 17<sup>36</sup>*HIV Prevalence by Age, Zimbabwe* (World Health Organization, World Health Survey, 2005–2006)

Age	Women		Men		Total	
	Percentage HIV		Percentage HIV		Percentage HIV	
	Positive	Number	Positive	Number	Positive	Number
15–19	6.2	1682	3.1	1692	4.6	3374
20–24	16.3	1518	5.8	1247	11.6	2766
25–29	28.8	1149	13.1	907	21.8	2056
30–34	35.5	956	29.5	716	32.9	1672
35–39	34.5	656	32.1	546	33.4	1201
40–44	25.7	529	32.9	404	28.9	934
45–49	18	458	26	335	21.4	793
50–54	na	na	20	253	20	253
total 15–49	21.1	6947	14.5	5848	18.1	12796
total 15–54	na	na	14.8	6102	na	na

<sup>36</sup> From the Central Statistical Office (CSO) [Zimbabwe] and Marco International, Inc. Copyright 2007. *Zimbabwe Demographic and Health Survey 2005-06*. Calverton, Maryland: CSO and Marco International Inc. Adapted with permission.

Table 18<sup>37</sup>

*HIV Prevalence by Socioeconomic Status, Zimbabwe* (World Health Organization, World Health Survey, 2005–2006)

Background Characteristic	Women		Men		Total	
	Percentage HIV Positive	Number	Percentage HIV Positive	Number	Percentage HIV Positive	Number
<b>Residence</b>						
Urban	21.6	2,670	15.7	2319	19	4990
Rural	20.8	4,277	13.8	3529	18	7806
<b>Education</b>						
No education	20	301	23.4	61	20.6	362
Primary	22.4	2,263	15	1550	19	3813
Secondary	20.7	4,194	14.3	3936	18	8131
More than secondary	15.8	189	12.8	32	14	490
<b>Employment</b>						
Not employed	18.9	3,949	8.3	1785	16	5733
Employed	24	2,994	17.3	4084	20	7042
Missing	*	4	*	16	*	21
<b>Wealth Quintile</b>						
Lowest	17.7	1,223	13.4	898	15.9	2,121
Second	21.1	1,183	15.1	997	18.4	2,180
Middle	22.7	1,240	12.2	1041	17.9	2,281
Fourth	26.8	1,579	17.7	1618	21.9	3,197
Highest	17.1	17,722	13.5	1296	15.6	3,018

<sup>37</sup> From the Central Statistical Office (CSO) [Zimbabwe] and Marco International, Inc. Copyright 2007. *Zimbabwe Demographic and Health Survey 2005-06*. Calverton, Maryland: CSO and Marco International Inc. Adapted with permission.

Table 19<sup>38</sup>*HIV Prevalence by Sexual Behavior, Zimbabwe* (World Health Organization, World Health Survey, 2005-2006)

Sexual Behavior Characteristic	Women		Men		Total	
	Percentage		Percentage		Percentage	
	HIV Positive	Number	HIV Positive	Number	HIV Positive	Number
<b>Age at first sexual intercourse</b>						
<16	26.9	1,078	16.4	554	23	4990
16-17	25	1,504	18.2	826	23	7806
18-19	25.9	1474	20.4	1120	23.5	
20+	24.7	1,220	18.9	1722	21.3	362
Missing	25.8	248	30.4	34	26	3813
<b>Higher risk intercourse in past 12 months</b>						
More than secondary/Had higher-risk intercourse	38.7	537	12.4	1362	20	490
Had sexual intercourse, not higher risk	20.6	4,088	23.9	2310	22	
No sexual intercourse in past 12 months	40.2	900	14.3	584	30	5733
<b>Number of sexual partners in past 12 months</b>						
0	40.2	897	14.3	584	30	21
1	22.3	4,561	20.5	3113	22	
2	54.3	58	15.2	470	19.5	2,121
3+	*	6	14.8	81	14.4	2,180
<b>Number of higher risk partners in past 12 months</b>						
0	24.1	4,988	21.9	2883	23.3	3,197
1	37.6	501	13.7	1064	21.3	3,018
2	60.6	32	8.2	222	14.8	
3+	*	4	10.7	87	10.8	
<b>Condom Use</b>						
Ever used a condom	32.1	1,441	20.9	2920	24.6	4361
Never used a condom	23.1	4,057	14.6	1327	21	5384
Missing	47.3	27	*	8	38.6	35

(table continues)

<sup>38</sup> From the Central Statistical Office (CSO) [Zimbabwe] and Marco International, Inc. Copyright 2007. *Zimbabwe Demographic and Health Survey 2005-06*. Calverton, Maryland: CSO and Marco International Inc. Adapted with permission.



(table 19 continued)

	Women		Men		Total	
	Percentage	Number	Percentage	Number	Percentage	Number
	HIV Positive		HIV Positive		HIV Positive	
<b>Condom use at last sexual intercourse in past 12 months</b>						
Used condom	39.1	375	15.1	97	21.7	1352
Did not use condom	21.3	4250	21.3	2694	21.3	6944
No sexual intercourse in past 12 months	40.2	900	14.3	584	30	1484
<b>Condom use at last higher risk intercourse in past 12 months</b>						
Used condom	39.9	234	12.9	986	18.1	1220
Did not use condom	37.9	303	11.8	387	23.2	691
No higher risk intercourse/no sexual intercourse past 12 months	24.1	4988	21.9	2883	23.3	7870
<b>Number of lifetime partners</b>						
1	18.1	3612	6.6	757	16.1	4369
2	37.1	1201	14.8	78	28.3	1979
3 to 4	42.2	567	20.3	1160	27.5	1727
5-9+	43.9	106	22.1	931	24.3	1037
10+	*	20	31.1	52	32.5	572
Missing	*	19	34.8	78	39.5	97
<b>Paid for sexual intercourse in past 12 months</b>						
Paid sexual intercourse	na	na	12.5	209	na	na
Used condom	na	na	10.2	152	na	na
Did not use condom	na	na	18.6	58	na	na
No paid sex/no sexual intercourse in past 12 months	na	na	19.2	4046	na	na
Total:	25.6	5525	18.9	4256	22.7	9780

Table 20<sup>39</sup>*HIV Prevalence by Age, Zimbabwe* (World Health Organization, World Health Survey, 2010–2011)

Age	Women		Men		Total	
	Percentage HIV Positive	Number	Percentage HIV Positive	Number	Percentage HIV Positive	Number
15–19	4.2	1553	3.4	1569	3.8	3121
20–24	10.6	1463	3.8	1204	7.5	2667
25–29	20.1	1354	10.3	1082	15.8	2437
30–34	29	1010	17.3	845	23.7	1855
35–39	29.1	843	25.2	710	27.3	1554
45–49	25.7	588	26.2	506	25.9	1094
50–54	22.5	501	29.9	333	25.5	834
Total 15–49	na	na	19.5	334	na	na
Total 15–54	17.1	7,313	12.3	6,250	15.2	13,563

<sup>39</sup> From the Zimbabwe National Statistics Agency (ZIMSTAT) and ICF International. Copyright 2012. *Zimbabwe Demographic and Health Survey 2010-2011*. Calverton, Maryland: ZIMSTAT and ICF International Inc. Adapted with permission.

Table 21<sup>40</sup>*HIV Prevalence by Age*, Malawi (World Health Organization, World Health Survey, 2010)

Age	Percentage HIV	Number	Percentage HIV	Number	Percentage HIV	Number
	Positive		Positive		Positive	
15–19	4.2	1545	1.3	1703	2.7	3248
20–24	6.4	1401	2.8	1176	4.7	2577
25–29	13.5	1407	6.9	1041	10.7	2448
30–34	20.7	937	10.8	885	15.9	1821
35–39	23.8	806	18.1	757	21	1563
40–44	20.4	533	20.9	506	20.7	1039
45–49	16.1	462	14.9	429	15.5	891
Total 15–49	12.9	7,091	8.1	6497	10.6	13588
50–54	na	na	13.1	341	na	na
Total men 15–54	na	na	8.4	6,839	na	na

<sup>40</sup> From the National Statistical Office (NSO) and ICF Marco. Copyright 2011. *Malawi Demographic and Health Survey 2010*. Zomba, Malawi, and Calverton, Maryland, USA: NSO and ICF Marco. Adapted with permission.

Table 22<sup>41</sup>

*HIV Prevalence by Socioeconomic Status, Zimbabwe* (World Health Organization, World Health Survey, 2010–2011)

Background Characteristic	Women		Men		Total	
	Percentage HIV Positive	Number	Percentage HIV Positive	Number	Percentage HIV Positive	Number
<b>Residence</b>						
Urban	19.6	2,297	13.1	1866	17	4163
Rural	16.8	5,015	12	4384	15	9399
<b>Education</b>						
No education	15.2	168	15.8	50	15	218
Primary	20.1	2,156	13.6	1402	18	3559
Secondary	16.9	4,688	12.1	4402	14.6	9090
More than secondary	13.7	300	9.3	396	11	696
<b>Employment</b>						
Not employed	15	5,002	9.1	1976	13	6199
Employed	21.4	3,090	13.8	4274	17	7363
<b>Wealth Quintile</b>						
Lowest	17.1	1,375	14.7	1040	16	2415
Second	16.3	1,411	12.2	1200	15	2611
Middle	19.9	1,457	12	1296	16.2	2753
Fourth	19.7	1,527	11.6	1383	16	2910
Highest	15.5	1,544	11.5	1330	14	2874
Total 15–49	17.7	7,313	12.3	6250	15	13563

na = Not applicable

<sup>41</sup> From the Zimbabwe National Statistics Agency (ZIMSTAT) and ICF International. Copyright 2012. *Zimbabwe Demographic and Health Survey 2010-2011*. Calverton, Maryland: ZIMSTAT and ICF International Inc. Adapted with permission.

Table 23<sup>42</sup>*HIV Prevalence by Socioeconomic Status, Malawi (World Health Organization, World Health Survey, 2010)*

Background Characteristic	Women		Men		Total	
	Percentage HIV Positive	Number	Percentage HIV Positive	Number	Percentage HIV Positive	Number
<b>Residence</b>						
Urban	22.7	1,389	12	1866	17	2772
Rural	10.5	5,702	7.1	5114	9	10816
<b>Education</b>						
No education	14.1	1,096	10.9	397	13	1493
Primary	11.6	4,569	7.7	4052	10	8621
Secondary	16.1	1,292	8.1	1848	11.4	3140
More than secondary	16.3	134	11.9	201	14	335
<b>Employment</b>						
Not employed	9.6	5,002	9.1	1976	13	6199
Employed	14.2	3,090	13.8	4274	17	7363
Missing	*	3	*	1	*	4
<b>Wealth Quintile</b>						
Lowest	8.9	1,202	5.6	932	8	2134
Second	9.3	1,392	6.5	1255	8	2646
Middle	10.6	1,293	8	1298	9.4	2691
Fourth	13.7	1,369	8.2	1308	11	2677
Highest	19.7	1,735	10.8	1704	15	3440
Total 15–49	12.9	7,091	8.1	6497	21	13588
50–54	na	na	13.1	341	na	na
Total men 15–54	na	na	8.4	6839	na	na

na= Not applicable

<sup>42</sup> From the National Statistical Office (NSO) and ICF Marco. Copyright 2011. *Malawi Demographic and Health Survey 2010*. Zomba, Malawi, and Calverton, Maryland, USA: NSO and ICF Marco. Adapted with permission.

Table 24<sup>43</sup>*HIV Prevalence by Sexual Behavior, Zimbabwe* (World Health Organization, World Health Survey, 2010-2011)

Sexual Behavior Characteristic	Women		Men		Total	
	Percentage HIV Positive	Number	Percentage HIV Positive	Number	Percentage HIV Positive	Number
<b>Age at first sexual intercourse</b>						
<16	22.7	1010	14.6	506	20	1516
16–17	20.3	1732	15.5	845	18.8	2578
18–19	19.9	1489	16	1166	18.2	2655
20+	19.2	1447	14.1	2020	16	3467
Missing	26	366	26.2	140	26	506
<b>Multiple Sexual Partners and Partner</b>						
<b>Concurrency in Past 12 months</b>						
0	33.4	974	10.5	424	26	1398
1	18	4907	15.8	3563	17	8470
2+	34	79	14.9	638	17	717
Had Concurrent Partners	*	20	13.6	231	13.5	251
No Sexual Partners were Concurrent	41.7	59	15.7	407	18.9	466
Missing	18.3	84	20.3	52	19	136
<b>Condom Used at Last Sexual Intercourse</b>						
<b>in Past 12 months</b>						
Ever used a condom	41.4	701	19.4	1140	27.8	1841
Never used a condom	14.5	4285	14.3	3061	14.4	7346
Missing	32.2	1058	11.6	477	25.8	1534

(table continues)

<sup>43</sup> From the Zimbabwe National Statistics Agency (ZIMSTAT) and ICF International. Copyright 2012. *Zimbabwe Demographic and Health Survey 2010-2011*. Calverton, Maryland: ZIMSTAT and ICF International Inc. Adapted with permission.

Table 24 (continued)

Sexual Behavior Characteristic	Women		Men		Total	
	Percentage HIV		Percentage HIV		Percentage HIV	
	Positive	Number	Positive	Number	Positive	Number
<b>Number of Lifetime Partners</b>	12.1	3867	4	866	10.6	4733
1	32.2	1345	12.3	830	24.6	2176
2	40.6	608	13.8	1249	22.6	1858
3 to 4	46.9	137	20.6	983	23.8	1119
5 to 9	40.6	62	27.2	544	28.6	606
10+	52.8	24	25.9	206	28.7	230
Missing						
<b>Paid for Sexual Intercourse in Past 12 Months</b>						
Yes	na	na	13.4	183	na	na
Used Condom	na	na	14.2	161	na	na
Did Not Use Condom	na	na	*	22	na	na
No (Did not pay for sexual intercourse/no sexual intercourse in past 12 months)	na	na	15.3	4494	na	na
Total 15-49	20.7	6044	15.2	4677	18.3	10721
50-54	na	na	19.5	333	na	na
Total 15-54	na	na	15.5	5011	na	na

na = Not applicable

Table 25<sup>44</sup>*HIV Prevalence by Sexual Behavior, Malawi* (World Health Organization, World Health Survey, 2010)

Sexual Behavior Characteristic	Women		Men		Total	
	Percentage		Percentage		Percentage	
	HIV Positive	Number	HIV Positive	Number	HIV Positive	Number
<b>Age at first sexual intercourse</b>						
<16	16.6	2181	8.4	1993	12.7	4173
16-17	14.4	1752	9.5	958	12.6	2710
18-19	10.8	1199	10.7	1116	11	2315
20+	12.2	635	9.1	1379	10	2014
Missing	18.7	400	12.6	95	18	494
<b>Multiple Sexual Partners and Partner Concurrency<sup>45</sup> in Past 12 Months</b>						
0	24.7	831	4.9	783	15	1614
1	12.7	5262	9.7	4137	11	9400
2+	31.8	64	11.8	614	13.7	678
Had Concurrent Partners	*	26	12.1	482	13.5	508
No Sexual Partners were Concurrent	26.6	38	10.5	132	14.1	170
Missing	*	8	*	7	*	15
<b>Condom Use</b>						
Ever used a condom	20.3	1292	11.8	3183	14.3	4475
Never used a condom	12	4865	5.8	2345	10.6	7210
Missing	*	9	*	13	16.6	21

(table continues)

<sup>44</sup> From the National Statistical Office (NSO) and ICF Marco. Copyright 2011. *Malawi Demographic and Health Survey 2010*. Zomba, Malawi, and Calverton, Maryland, USA: NSO and ICF Marco. Adapted with permission.

<sup>45</sup> A respondent is considered to have had concurrent partners if he or she had overlapping sexual partnerships with two or more people during the 12 months before the survey. Respondents with concurrent partners include polygamous men who had overlapping sexual partnerships with two or more wives (World Health Organization, World Health Survey, 2010).



(table 25 continued)

Sexual Behavior Characteristic	Women		Men		Total	
	Percentage HIV Positive	Number	Percentage HIV Positive	Number	Percentage HIV Positive	Number
<b>Condom use at last sexual intercourse in past 12 months</b>						
Used condom	29.1					
Did not use condom	11.2					
No sexual intercourse in past 12 months	24.4	839	4.8	789	14.9	1628
Missing	*	1	*	5	*	6
<b>Number of Lifetime Partners</b>	7.1	3298	1.9	1158	5.7	4457
1	16.8	1916	6.5	1362	12.6	3278
2	33.7	812	10.1	1746	17.6	2558
3 to 4	53.1	104	16	875	19.9	980
5 to 9	*	18	20.4	304	20.8	322
10+	*	17	26.2	96	25.4	113
Missing						
<b>Paid for Sexual Intercourse in Past 12 Months</b>						
Yes	na	na	8.6	320	na	na
Used Condom	na	na	11.5	192	na	na
Did Not Use Condom	na	na	4.1	129	na	na
No (Did Not Pay for Sexual Intercourse/No Sexual Intercourse in Past 12 Months)	na	na	9.3	5221	na	na
Total 15-49	14.5	6166	9.3	5541	12	11707
50-54	na	na	13.1	341	na	na
Total men 15-54	na	na	9.5	5882	na	na

na = Not applicable

## CHAPTER 4: THEORY/PROGRAM MODEL

### Theory of Reasoned Action

The TRA states that an individual's attitude impacts their intentions which determines their behavior.

“In this theory, a person's attitude toward a behavior consists of 1) a belief that a particular behavior leads to a certain outcome, and 2) an evaluation of the outcome of that behavior. Thus, if the outcome seems beneficial to the individual, he or she may then intend to or actually participate in a particular behavior. Also included in one's attitude toward a behavior is their concept of the subjective norm. Subjective norm is a person's perception of what others around them believe that the individual should do. Subjective norm is a form of peer pressure. Whether or not a person participates or intends to participate in any behavior is influenced strongly by the people around them. These people may include friends, family, co-workers, church congregation members, community leaders, or celebrities. People may also be inclined or not inclined to participate in a behavior based upon their desire to comply with others. Laws or rules prohibiting a behavior may have an impact on one's attitude toward participating in a behavior. Ultimately, one's attitude toward a behavior can lead to an intention to act, or not to act as the case may be. This intention may or may not lead to a particular behavior. (Michigan State University, Department of Fisheries & Wildlife, 2008, ¶ 1–4).”

The subjective norm plays a critical role in the HIV/AIDS pandemic in Malawi. As a result of the cultural barriers and factors that inflict stigma, discrimination, and marginalization against Malawians who are infected with HIV/AIDS, the discussion of the causes and consequences of HIV/AIDS is a culturally sensitive topic and is often discouraged. In addition, the subjective norm of HIV/AIDS also impacts Malawians condom usage and participation in risky sexual behaviors. In essence, Malawians are not choosing to utilize condoms as a result of the negative perception condom usage has within the Malawian community. In Chapter 2, the subjective expectation was defined as an individual's overall understanding of their AIDS related risk (Green et al., 1997). Essentially, a subjective expectation is a direct result of the subjective norm. Implementing culturally competent health and wellness education programs that educate Malawians about HIV/AIDS would be achieved by increasing the subjective expectations of Malawians, which would change the subjective norm to one of decreased HIV/AIDS risk.

In the case of HIV/AIDS prevention, the TRA model suggests that self-management and self-efficacy are key elements that could alter the subjective expectations of Malawians. These three elements would be taught from the health and wellness education programs and would change Malawians normative and behavioral beliefs about HIV/AIDS. The dialogue about HIV/AIDS gained from the health and wellness education programs would impact the subjective norms and attitudes towards HIV/AIDS. Thus, the behavioral intentions and subsequent behaviors of Malawians will be vastly impacted. The TRA is a key to understanding how HIV/AIDS can be ameliorated in Malawi as it relates to Malawians rationalizing the decision to partake in risky sexual behaviors and not utilize condoms. The TRA adds to existing research and understanding of how to decrease the pandemic by providing a method to influence the attitudes and beliefs of Malawians about HIV/AIDS.

In Malawi, the TRA can be applied to the HIV/AIDS pandemic and how individuals rationalize participation in risky sexual behaviors, but Figure 7 represents the best way to curtail the HIV/AIDS pandemic with the implementation of health and wellness education programs in Malawian schools. In congruence with McLeroy et al. (1988) health promotion model, Figure 7 is constructed on the premises of the TRA and assumes that appropriate changes in the social environment, also known as the subjective norm, will produce changes in individuals.

Furthermore, the TRA explains the current context of the HIV/AIDS pandemic in Malawi. The TRA suggests that the attitudes and beliefs of Malawians have resulted in behavioral intentions and subsequent behaviors that have significantly impacted the HIV/AIDS pandemic. Fortunately, it also provides support for a course of action that will target the attitudes and beliefs of Malawians about HIV/AIDS.

I favor the implementation of health and wellness education programs in Malawian schools as a result of the dictates of the TRA. A development of a theory based sexual and reproductive health and wellness education program in Malawian schools that teaches HIV prevention through self-management, dialogue, health promotion, and self-efficacy is critical. Sex education is intended to provide youth with the information and skills needed to make healthy and informed decisions about sex (Mueller, Gavin, & Kulkarni, 2007). The comparisons of HIV prevalence between Malawi and Zimbabwe led me to formulate a program model for Malawi. Figure 7 represents the proposed program model for health and wellness education programs for Malawi. The model's design is based on Ajzen's and Fishbein's (1980) TRA. It demonstrates how the key variables examined in the Malawi Demographic and Health Survey, 2004 such as HIV prevalence and condom usage can be utilized in the TRA to promote a social

policy that will have an impact on Malawians' behavior to decrease the number of new incidences of HIV/AIDS.

In Chapter 1, self-management was defined as the act of engaging in health promotion (Lorig & Holman, 2003). Self-management is the combination of health behavior and disease management. It has three critical components (1) behavioral management, (2) role management, and (3) emotional management (Lorig & Holman, 2003). Self-efficacy is defined as the belief in one's ability to organize and execute the course of actions required producing given attainments and it is associated with changes in health behavior and health status (Lorig & Holman, 2003). According to Park (2000) and McLaughlin (2000), dialogue is defined as the process for talking together in a way that allows individuals to understand the thoughts, feelings, and values, amongst themselves and others, facilitating a joint construction of meaning that possibly transforms our understanding. Dialogue prompts awareness within an individual called conscientisation that allows the individual to devise solutions to their predicaments. Thus, the dialogue becomes a prelude to behavior change.

Figure 7 exemplifies the role of self-management, self-efficacy, and dialogue on behavior change in Malawians. It takes into account that self-management skills must be gained by Malawians in order to increase their self-efficacy and belief about the impact of HIV/AIDS in the Malawian community. In addition, Figure 7 also takes into account the evaluation process of Malawians and illustrates the impact that dialogue could have on changing how Malawians evaluate and rationalize their participation in risky sexual behaviors. Moreover, this figure illustrates that in order for Malawians to partake in behavior change they must obtain self-management skills from health and wellness education programs to have the resources to decline participating in risky sexual behaviors. Self-efficacy equips Malawians with the resources to

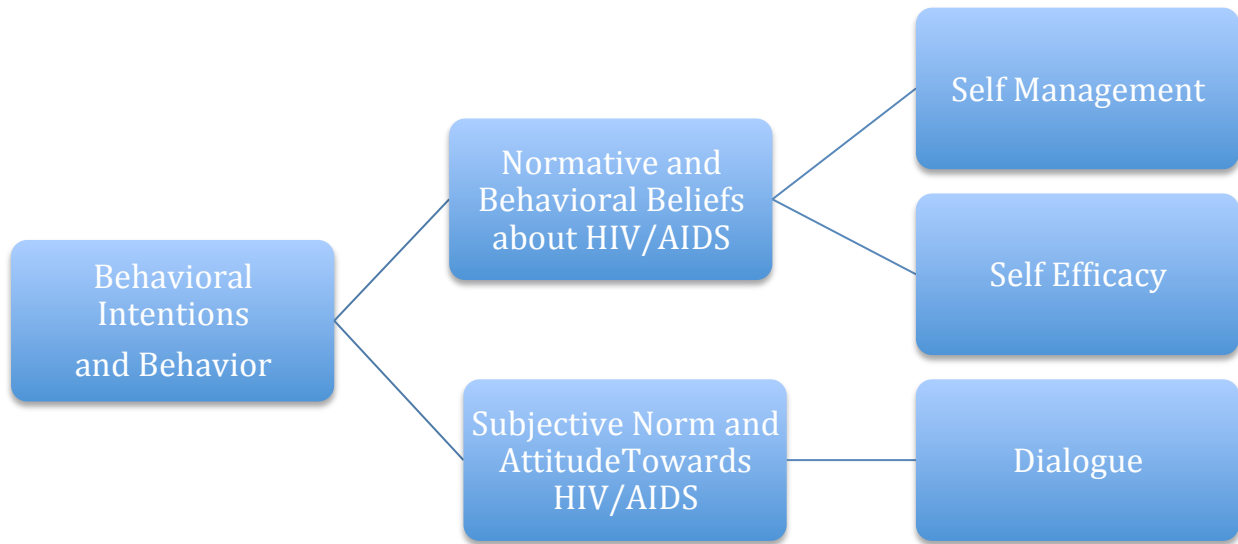


Figure 7. Proposed Model for Health and Wellness Education Programs for Malawian Schools

understand the value of not participating in risky sexual behaviors to their health. The dialogue created during participation in health and wellness education programs enables the Malawians to construct meaningful reasons to not participate in risky sexual behaviors among their peers. The dialogue also enables them to expand the meaningful reasons to not participate in risky sexual behaviors beyond the school. All of these factors contribute to changing the subjective norm, which is key in curtailing the HIV/AIDS pandemic in Malawi

It is critical to address why health and wellness education programs were selected as the source for strategic intervention to curtail the HIV/AIDS pandemic in Malawi and why the proposed program model is different from the TRA. Health and wellness education programs were selected because they have proven to be very effective in Zimbabwe, where they educated their citizens about HIV/AIDS which had an immense impact on the citizen's subjective

expectations about the context of HIV/AIDS. Subjective expectations play a key role in an individual's understanding of AIDS related risk behavior. The premise behind the proposed program model relies heavily on an individual's subjective expectation. If Malawians were properly educated about the causes and consequences of HIV/AIDS, their subjective expectations about infection would be higher which would decrease the HIV prevalence rate because Malawians would understand that participating in risky sexual behaviors would decrease their resiliency to HIV/AIDS.

The proposed program model for health and wellness education programs for Malawian schools is based on the principles of the TRA. These principles state that the behavior and behavioral intentions of an individual are reasoned and justified by their normative attitudes and subjective beliefs. Essentially, a person rationalizes a behavior based upon their social environment. Malawians are rationalizing their participation in risky sexual behaviors and condom usage based upon their social environment. In order to create change within Malawians' behavior and behavioral intentions, their subjective and normative beliefs must be changed through behavioral interventions. The proposed program model differs from the TRA because it takes into account three elements that are not considered in the TRA: Self Management, Self-Efficacy, and Dialogue. Self-Management, self-efficacy, and dialogue are three main skills that are gained from participating in health and wellness education programs that will assist Malawians in behavior change as it relates to participating in risky sexual behaviors.

Figure 7 justifies why the school setting is a great venue to promote behavior change. The school venue would allow Malawians to engage in dialogue about HIV/AIDS in an environment without cultural barriers and Malawians would be able to have a systematic method of being educated about HIV/AIDS. Secondly, the dialogue will greatly impact Malawians subjective

norm and attitudes toward HIV/AIDS. This change will impact Malawians participation in risky sexual behavior and condom usage. Cultural constraints such as the lack of bargaining power for women as it relates to condom usage and reproductive health and the cultural barriers impacting the discussion of HIV/AIDS in Malawi exemplifies the importance of utilizing the school as a structured social network to systematically educate Malawians about HIV/AIDS. Figure 7 was formulated from my fieldwork in Malawi and participant observation of the HIV/AIDS pandemic in Malawi.

### **Fieldwork in Malawi, Africa**

My personal immersion at Mtendere Village in Lilongwe, Malawi equipped me with the lens and experience to understand and interpret my research and the literature in a way that other researchers may not. My fieldwork and conversations with the adults and children of the village, and voyages to the countryside, safari, and Lake Malawi enabled me to understand firsthand the importance of health and wellness education programs on the HIV/AIDS pandemic in Malawi. The blue print for my research study was influenced by my experience at Mtendere Village. At Mtendere Village, there is a health and wellness education program in place at the primary and secondary school that are conducted by the teachers. The curriculum consisted mostly of abstinence. Although, their health and wellness education program may be considered out of date by the literature, it had an impact on the residents of the village. The majority of the children residing at the village were orphaned due to the HIV/AIDS pandemic in Malawi. The health and wellness education programs were successful because they encouraged dialogue about the pandemic among adults and children. The dialogue taught the children self-management skills to understand their AIDS related behavior and the self-efficacy to not partake in risky sexual behaviors because of the threat to their health. I believe the dialogue that was created had



a significant influence on the residents' attitudes and behaviors about avoiding risky sexual behaviors.

As a result of my immersion in the Malawian culture, I witnessed key cultural constraints that were apart of the subjective norm for Malawians. The first constraint was the disproportionate impact that the HIV/AIDS pandemic had on women. Fifty-eight percent of all individuals infected with HIV/AIDS in the sub-Saharan region of Africa are women (Malawi Government, Ministry of Health, 2012). In Malawi, the UNAIDS (2012) estimates that 520,000-590,000 women 15 years of age and older are living with HIV/AIDS. Coupled with women being disproportionately impacted by the pandemic with HIV/AIDS, Malawian women are subjected with high infant and maternal mortality rates. All of these issues impact the bargaining power for Malawian women. As a result of the cultural sensitivity and subjective norm of women's sexual reproductive health and condom usage among women, women are less likely to utilize condoms and seek testing for HIV/AIDS due to the stigma.

The issues of gender and sexuality are key cultural constraints that restrict Malawians from curtailing the number of new incidences of HIV/AIDS. Heterosexual transmission accounts for 90% of HIV/AIDS transmission (Marcus, 1993), therefore it is crucial to analyze gender and sexuality as it relates to the HIV/AIDS pandemic in Malawi. Figure 7 takes into account the issue of gender and sexuality by suggesting a program model that engages students, female and male, in dialogue about HIV/AIDS.

Coupled with the cultural constraints on gender and sexuality in Malawi, are cultural constraints that are apart of the subjective norm like widow inheritance<sup>46</sup>, polygamy, traditional

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<sup>46</sup> Widow inheritance is a form of forced marriage. When a husband dies, the brother of the deceased husband inherits his widow. Women in the sub-Saharan region of Africa are perceived to face widespread discrimination in asset and property inheritance following the death of a spouse (Peterman, 2011). In the terms of the HIV/AIDS pandemic in Malawi, widow inheritance imposes hardships on women that impact their ability to obtain access to healthcare and transportation. As a result it disables their likelihood of being able to obtain a condom source or HIV/AIDS testing. Most importantly, it limits their bargaining power for safer sex.

medicines, witchcraft, geographical disparities, poverty, lifestyles, and beliefs. All of these factors are key in understanding how health and wellness education programs can change the subjective norm by altering the subjective expectations of Malawians. The health and wellness education programs must be culturally competent in their approach to educating Malawians about HIV/AIDS. In order for the program to be successful, the health and wellness education program has to take into consideration these key cultural constraints. Kondowe and Mulera (1999) noted that it is imperative to consider taking a cultural approach in order for behavior change patterns to be long term.

Culture is dynamic and it plays a key role in the infrastructure of society. In Malawi, culture dictates the value of sex (Kondowe & Mulera, 1999). Cultural views about sex are a key social factor of the HIV/AIDS pandemic in Malawi; especially when the general population has not been educated properly about the pandemic. In order for the subjective norm to be changed, a culturally competent health and wellness education program must be implemented in Malawian schools. The three skills: self-management, self-efficacy, and dialogue illustrated in Figure 7 would enable Malawians to overcome the challenges imposed by cultural factors and barriers.

### **Policy Statement**

“One of the defining characteristics of public health—apart from its emphasis on the health of populations rather than individuals—is the use of regulatory policies, procedures, and laws to protect the health of the community.” (McLeroy et al., 1988).

Although policies implemented by international public health agencies such as PEPFAR, Leadership and Investment in Fighting An Epidemic, and the International Mother and Child Prevention Initiative have contributed immensely to containing or stemming the HIV/AIDS

pandemic in the sub-Saharan region, it is essential for Malawi to invest in its response to HIV/AIDS by implementing health and wellness education programs all Malawian schools that address behavior change, condom usage, and HIV prevention strategies. There are several important roles for health promotion professionals in policy development, policy advocacy, and policy analysis. Policy development activities may include increasing public awareness about specific health and policy issues (McLeroy et al.,1988).

The challenges for policy development for Malawi are the efforts to reorganize thinking and reorient current policies in a new direction that encourages innovative ideas that promote early access to care and treatment, HIV prevention methods, discourage stigma and discrimination and promote education about HIV/AIDS (Malawi Government, 2003). The highest rates of infected persons living with HIV/AIDS reside in urban areas in Malawi; however, only a few urban centers in Malawi have access to AIDS treatment (Malawi Government, 2003). Coupled with the challenge of creating innovative ideas, a second obstacle for policy development in Malawi is the lack of coordination between civil society organizations (CSOs), nongovernmental organizations (NGOs), and faith based organizations (FBOs). Although these organization have become engaged in various ways in the fight against HIV/AIDS in activities and interventions that seek to mitigate its impact on individuals, families, communities, and institutions (Malawi Government, 2003), the Malawian Government should utilize these organizations as a tool to provide knowledge, healthcare, and prevention methods to Malawians.

It is important to recognize that mediating structures in a community serve as connections between individuals and the larger social environment. Mediating structures serve as points of access to, and influence on, the policy-making

process. Thus, the task of health promotion professionals—whether in policy development, advocacy, or analysis—is to strengthen the ability of mediating structures to influence policy, thereby strengthening the mediating structures and their ability to meet the needs of their members. (McLeroy et al., 1988, pg. 366 ¶4).

The advocacy component for Malawi involves the National HIV/AIDS Policy. The goals of the National HIV/AIDS Policy are (1) to prevent the further spread of HIV infection, and (2) to mitigate the impact of HIV/AIDS on the socioeconomic status of individuals, families, communities, and the nation (Malawi Government, 2003). The Malawian Government (2003) stated that the National HIV/AIDS Policy was formulated in major part to consolidate these efforts, to expand interventions that have great promise and to direct the response to new areas that call for attention. This policy is described as a homegrown, designed to respond to the particular experiences of Malawi, addressing the specific issues by developing appropriate local strategies (Malawi Government, 2003). Investing in the National HIV/AIDS policy that funds the implementation of health and wellness education programs in Malawian schools will decrease the number of new incidences of HIV/AIDS. A culturally competent health and wellness education program that addresses cultural and religious practices that influence HIV/AIDS is essential. The National HIV/AIDS Policy developed by the Malawian Government is the best way to develop and implement culturally competent health and wellness education programs in Malawian schools. The implementation of health and wellness education programs should be advocated through the National HIV/AIDS policy because it will ensure a systematic method educating Malawians about the causes and consequences of HIV/AIDS without cultural barriers.

The absence of a discourse on healthy sexuality remains a significant obstacle to HIV prevention in various settings (Harrison, 2008). Health and wellness education programs can serve as a strategic tool to help decrease the number of new incidences of HIV/AIDS among Malawians because it will create an atmosphere in the school setting for dialogue that is not restricted by cultural barriers for HIV/AIDS to be discussed. According to the Emancipatory Theory of Paulo Freire, it is through dialogue that people unveil their world (Kiragu & McLaughlin, 2011). The dialogue in the school setting will create social persuasion<sup>47</sup> (Lorig & Holman, 2003) by encouraging Malawians to discuss the consequences of HIV/AIDS. This social persuasion will influence their attitudes towards partaking in risky sexual behaviors such as not using condoms, having unprotected sex with high-risk partners, and having multiple sexual relationships. Ultimately, the dialogue processes can be useful to the process of constructing realistic and contextually relevant HIV/AIDS education (Kiragu & McLaughlin, 2011).

In addition to creating an atmosphere for dialogue that is not shielded with cultural barriers, health and wellness education programs will teach the core self-management skills: problem solving, decision making, finding and utilizing resources, helping people to form relationships with healthcare providers, and self-tailoring (Lorig & Holman, 2003). In fact, Lorig and Holman (2003) indicated that self-management education makes a difference in terms of changes in behavior, health status, and health care utilization.

Traditional health promotion and patient education programs have operated on the assumption that people should change behaviors to improve health status (Lorig & Holman, 2003). Indeed, Lorig and Holman (2003) are correct that behavior change is correlated with

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<sup>47</sup> Lorig and Holman (2003) notes that social persuasion is a powerful means of increasing self-efficacy. For example, their research stated that if those around an individual are participating in a behavior, or not participating in a behavior, the individual is more likely to follow.

changes in one's health outcomes. Yet, a crucial question remains, what is the best way to conduct behavior change in Malawi? Kelly (1999) believes that the school system is the only social structure with the potential to spark behavior change and that the school systems must be proactive in communicating an unremitting series of messages, and information about HIV/AIDS. Due to the fact that developing effective vaccines and funding is an ongoing challenge (Markel, 2005), a large part of the national HIV strategic plan must focus on behavioral prevention (Lyles et al., 2006).

Coupled with lowering the number of new incidences of HIV/AIDS among Malawians, health and wellness education programs can assist Malawi in collecting systematic data about its HIV/AIDS pandemic in Malawi. Analysis is critical as the government data were not sufficient. Policy analysis data are critical and can help fill in some of the inaccuracies or missing information. The limited availability of systematic information on Malawians with HIV/AIDS suggests the need for more focused research (Kelly, 1999).

Most importantly, implementing health and wellness education programs into Malawian schools will inoculate Malawians against sexual risks through informing them of their rights, choices, and responsibilities and ensure economic security, social tranquility and effective public health (Hong et al., 2010). Advancing a public health-based response that integrates principles of prevention, treatment, care and support (Malawi Government, 2003) is the most effective way to decrease the number of new incidences of HIV/AIDS in Malawi. HIV/AIDS must be viewed within socioeconomic and environmental parameters that contribute to people's health risk behaviors and prevention education (Ardley & Sileo, 2009).

## CHAPTER 5: DISCUSSION

This research study contributes to discussions about HIV/AIDS education and the health promotion approach similar to Hong et al. (2010) research study. The goal was to suggest a course of action for Malawi's HIV/AIDS pandemic by pointing to the need for Malawi to invest in health and wellness education programs because 69% of the world's total population living with HIV/AIDS resides in the sub-Saharan region of Africa, which contains Malawi. In fact, HIV/AIDS accounts for 70% of all hospital admissions and for the recent drop in life expectancy of parents and other adults from 43-29 years (The World Bank, 2004).

With a population estimate ranging from 13-15.9 million people, the WHO estimates 1.1 million Malawians are infected with HIV/AIDS. Among those infected, adults aged 15-49 years possess the highest HIV prevalence rates. Yet, young adults aged 15-19 years possess the highest rates of new incidences and the rate is steadily increasing. The challenges that Malawians face with its HIV/AIDS pandemic result from the fact that Malawians are not being educated about HIV/AIDS. This research study concluded that health and wellness education programs would serve as a great strategic intervention as a behavior change program.

The implementation of health and wellness education programs in Malawian schools was the course of action that was proposed. The 2010 and 2004<sup>48</sup> Malawi Demographic and Health Surveys, and 2010–2011 and 2005–2006 Zimbabwe Demographic and Health Surveys were utilized to evaluate if health and wellness education programs could help decrease the number of new incidences of HIV/AIDS among persons aged 15–49 years. In addition, the data from these surveys were utilized to explore the incentives of implementing health and wellness education

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<sup>48</sup> The Malawi Demographic and Health Survey 2003 is the most reliable data source about Malawi. The World Health Organization funds the Malawi Demographic and Health Survey.

programs on health outcomes such as HIV and AIDS in Malawian schools. Specifically, the potential benefits of health and wellness education programs on key variables such as HIV prevalence, HIV prevention knowledge, adult support of education programs about condom usage, and higher risk sex participation were analyzed.

Due to the limitations as a result of the limited data from Malawi, the 2010 and 2005–2006 Zimbabwe Demographic and Health Surveys were utilized to review the trends and effectiveness of health and wellness education programs on the variables. As a result of the positive outcome that Zimbabwe has experienced with decreasing the number of new incidences of HIV/AIDS with the implementation of health and wellness education programs in Zimbabwean schools, it is suggested that Malawi emulates Zimbabwe’s course of action.

The success that Zimbabwe experienced in decreasing the number of new incidences of HIV/AIDS should be utilized to construct policies for Malawi that reflect Zimbabwe’s response to its HIV/AIDS pandemic. In congruence with the literature, it is evident that health and wellness education programs have proven to be a key tool in curtailing the health outcomes of individuals with HIV/AIDS globally.

### **Future Research**

Although research has identified that the school setting is the only way to curtail the HIV/AIDS pandemic in Malawi, the problem of continuity presents a major problem. The cost of further schooling makes the problem of continuity impact the school setting as a way of curtailing the HIV/AIDS pandemic in Malawi. At Mtendere Village, the cost of schooling was US \$40.00 per year. In Malawi, many parents are unable to afford the cost of schooling. Therefore it is imperative that future research further evaluates the role of the church, the media,



family, and community in the dialogue of HIV/AIDS. The success of health and wellness education programs relies on the expansion of the HIV/AIDS dialogue beyond the school.

Zimbabwe has achieved great success in lowering the number of new incidences of HIV/AIDS because it invested in the implementation of health and wellness education programs that address sexual health, condom usage, and HIV/AIDS in Zimbabwean schools. In addition, Zimbabwe has expanded its intervention efforts to educate Zimbabweans about HIV/AIDS to the media. Zimbabwe has an active campaign to circumcise its men. The campaign is promoted daily on a local radio station in Zimbabwe. The campaign has prompted Zimbabweans to engage in dialogue about sexual health and the quality of their sex life in venues outside of the school.

Future research should focus on the development of sexual and reproductive health promotion and HIV/AIDS prevention programs in Malawi by focusing on the infrastructure of such programs by evaluating the curriculum, collecting a needs assessment aimed at exploring the best methods to teach sexual and reproductive health and HIV/AIDS prevention programs from parents, teachers, and early adolescents, and collecting a needs assessment from the Malawian government aimed at providing a resolution for the difference in opinions between adults and adolescents regarding the contents of the curriculum. In addition, future research should extend research on analyzing the impact of sexual and reproductive health dialogues from other structured social settings such as the home and church. The school and home setting are primary socialization agents and it would be interesting to review the impact of dialogue about HIV/AIDS in the home setting in comparison to dialogue from the school setting in terms of effectiveness. Research should extend its analysis of the impact of dialogue to the church and home setting about the HIV/AIDS pandemic on the number of new incidences.

Equally important to examining dialogue and its impact on HIV/AIDS knowledge and prevention methods, future research should extend this research study and continue to examine different program models for the implementation of health and wellness education programs in Malawian schools. Future research studies should explore different methods to implement health and wellness education programs, the curriculum, and qualification and training standards for teachers to teach students about HIV/AIDS.

One of the biggest concerns for future research on the HIV/AIDS epidemic in the sub-Saharan region is the lack of available data. Previous research has indicated that in order to achieve the Millennium Development Goals<sup>49</sup> developed by the United Nations Foundation, the sub-Saharan region must implement laws that allow systemic data collection. There is a critical need for accurate data on Malawi's population so that Malawi can provide the proper assistance and funding to its citizens.

It's crucial for Malawi to implement culturally competent health and wellness education programs into Malawian schools to help decrease the number of new incidences of HIV/AIDS. The implementation of culturally competent health and wellness education programs in Malawian schools provides child-centered management of sexual socialization<sup>50</sup> (Wilbraham, 2008). Culturally competent HIV/AIDS prevention must embrace social, economic, cultural, religious, and spiritual contexts that impact Malawian lives (CDC, 2007; Ladson-Billings, 2000; National Minority AIDS Council, 2006). HIV/AIDS prevention professionals must be familiar with community systems, policies, facilitators, and barriers that affect program implementation (Ardley & Sileo, 2009). Thus, they must reach beyond school settings and work with parents,

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<sup>49</sup> The UN Millennium Project created the Millennium Development Goals. The goal of this project is to reduce extreme poverty in its many dimensions and combat HIV/AIDS.

<sup>50</sup> Sexual socialization is defined as the educational process of students learning about behaviors that encourage avoiding risky sexual behaviors through social interactions from school, home, and experience.

civic, and religious leaders, health and social service personnel to guarantee that programs are idiosyncratic to community members' health risk, beliefs, and customs (Ardley & Sileo, 2009).

The success for this evidence-based approach resolution for Malawi's HIV/AIDS pandemic has been exemplified in China, the United States, and Zimbabwe. In the case with Malawi, sociohistorical experiences create formidable barriers to HIV/AIDS prevention. As a result, the educators of the health and wellness education programs must understand and display sensitivity when developing and implementing health and wellness education programs in Malawian schools (Ardley & Sileo, 2009). Ardley and Sileo (2009) stated that this awareness promotes acceptance and understanding of others' lifestyles, communication, and curricular and pedagogical needs. Perhaps implementing health and wellness education programs into Malawian schools is the most effective way to decrease the number of new incidences of HIV/AIDS due to the fact that typical HIV/AIDS prevention messages about condom use, multiple sex partners, and receptive intercourse may not reach Malawians due to cultural influences and lack of instructional strategies and materials (Ardley & Sileo, 2009). The window of hope for curtailing the HIV/AIDS pandemic in Malawi is centralized on the implementation of health and wellness education programs.

The school setting is the only way to reach out to young people. Hence there is critical and urgent need to ensure that school systems in seriously affected countries are proactive in communicating an unremitting series of messages and information about HIV/AIDS. (Kelly, 1999, pg. 8).

The complexity of the HIV/AIDS pandemic and the solution are vast. There isn't one direct factor that can pin point the cause of the pandemic and there isn't one solution to the

HIV/AIDS pandemic in Malawi. This research study took this factor into account and acknowledged the complexity of the HIV/AIDS pandemic in Malawi.

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