

**ADDRESSING HIV/AIDS AND GENDER-BASED VIOLENCE THROUGH
COMPREHENSIVE PROGRAMMING:
THE “OUR HEALTH, OUR RESPONSIBILITY” PROGRAM**

by

Summer Miller-Walfish

BA in Political Science, Swarthmore College, 2011

Submitted to the Graduate Faculty of
the Department of Behavioral and Community Health Sciences
Graduate School of Public Health in partial fulfillment
of the requirements for the degree of
Master in Public Health

University of Pittsburgh

2017

UNIVERSITY OF PITTSBURGH

Graduate School of Public Health

This thesis was presented

by

Summer Miller-Walfish

It was defended on

August 4th, 2017

and approved by

Jessica Burke, PhD, Associate Professor, Behavioral and Community Health Sciences,
Associate Chair, Graduate School of Public Health, University of Pittsburgh

Elizabeth Miller, MD, PhD, Professor of Pediatrics, School of Medicine, University of
Pittsburgh

Joanne Russell, MPPM, Assistant Professor, Behavioral and Community Health Sciences and
Director, Center of Global Health
Graduate School of Public Health, University of Pittsburgh

Thesis Director: Martha Ann Terry, PhD, Associate Professor, Behavioral and Community
Health Sciences, Graduate School of Public Health, University of Pittsburgh

Copyright © by Summer Miller-Walfish

2017

**ADDRESSING HIV/AIDS AND GENDER-BASED VIOLENCE THROUGH
COMPREHENSIVE PROGRAMMING
THE “OUR HEALTH, OUR RESPONSIBILITY” PROGRAM**

Summer Miller-Walfish, MPH

University of Pittsburgh, 2017

ABSTRACT

Similar to other developing countries, Zambia is experiencing high rates of both gender-based violence (GBV) as well as Human Immunodeficiency Virus/Acquired Immune Deficiency Syndrome (HIV/AIDS). Both of these issues present significant public health concerns for the country. Research suggests that there is a relationship between the two. Programs addressing one or the other of these issues have been implemented in Zambia; however, projects addressing both issues are limited in number. Combined programs have been successfully implemented in other countries that share characteristics similar to Zambia, so it is likely that this type of program could be successfully implemented in Zambia. This paper reviews eight programs addressing HIV, GBV, or both that were implemented in Zambia and other countries. Key successful components of those programs are identified to inform the design of a potential program in Zambia.

TABLE OF CONTENTS

PREFACE.....	IX
ACRONYMS.....	X
1.0 INTRODUCTION.....	1
2.0 BACKGROUND	4
2.1 HIV/AIDS	4
2.2 GENDER BASED VIOLENCE.....	5
2.3 CONNECTION BETWEEN HIV AND GBV.....	6
2.3.1 Women and HIV/AIDS.....	7
Biological Factors.....	7
Cultural Factors.....	8
Socioeconomic Factors	8
Behavioral Factors.....	8
2.4 FACTS ABOUT ZAMBIA.....	9
2.5 HIV/AIDS AND GBV IN ZAMBIA.....	10
HIV/AIDS in Zambia	10
GBV in Zambia	15
A Framework for HIV and GBV in Zambia.....	16
3.0 METHODS	22
4.0 RESULTS	23
4.1 HIV	23
4.2 GBV.....	25

4.3	HIV AND GBV	26
5.0	DISCUSSION	32
5.1	THE SUGGESTED PROGRAM	33
	Objective	34
	Framework.....	34
	Intervention	35
	Curriculum.....	39
	Evaluation.....	44
6.0	CONCLUSION.....	45
	APPENDIX: PUBMED SEARCHES.....	48
	BIBLIOGRAPHY	49

LIST OF TABLES

Table 1: Mechanisms of the Socio-Ecological of GBV's Amplification of HIV	21
Table 2: Programs reviewed for results	29
Table 3: Logic Model for "Our Health, Our Responsibility"	38

LIST OF FIGURES

Figure 1: Maps of Zambia.....	9
Figure 2: HIV Prevalence in Zambia in 2015.....	11
Figure 3: Causes of Premature Death	12
Figure 4: Disability Adjusted Life Years.....	14
Figure 5: Percent of Zambian Experiencing GBV	15
Figure 6: Socio-Ecological Model of GBV's Amplification of HIV	17
Figure 7: Socio-Ecological Model of “Our Health, Our Responsibility”	35

PREFACE

ACKNOWLEDGEMENTS

I would like to acknowledge Simon Banda for his assistance in helping me find the appropriate data. Thanks to Julie Pulerwitz and Suzanne Maman for providing advice based on personal experience working in southern Africa. Thank you to Barbara Folb for assistance with the literature search. My thesis committee members Dr. Elizabeth Miller, Dr. Jessica Burke, and Joanne Russell have provided invaluable advice, guidance, and support throughout the entire thesis process for which I am very grateful. Many thanks go to my thesis advisor Dr. Martha Ann Terry, who not only supported me through the thesis writing process, but who has also provided extensive guidance and assistance throughout my entire master's degree journey. Thank you so much to my friends and family for sticking by my side and providing unending love and support. And lastly, thanks to the people of Zambia, for warmly welcoming me into their country during my two years of Peace Corps service and sparking my interest in and passion for the topic of this thesis.

ACRONYMS

ABI: Abuse Behavior Inventory

AGEP: Adolescent Girls Empowerment Program

AIDS: Acquired Immune Deficiency Syndrome

ART: Anti-Retroviral Therapy

CE: Community Engagement

CHW: Community Health Worker

DALY: Disability Adjusted Life Year

GE: Group Education

GBV: Gender-Based Violence

GEM: Gender Equitable Men

GRZ: Government of the Republic of Zambia

HIV: Human Immunodeficiency Virus

IMAGE: The Intervention with Microfinance for AIDS and Gender Equity

LMIC: Lower Middle-Income Country

MSM: Men who have Sex with Men

STI: Sexually Transmitted Infection

UN: United Nations

WHO: World Health Organization

YLD: Years of Life lost to Disability

YLL: Years of Life Lost

1.0 INTRODUCTION

One of the primary public health focuses worldwide is the Human Immunodeficiency Virus/Acquired Immune Deficiency Syndrome (HIV/AIDS). From men who have sex with men (MSM) to intravenous drug users, public health officials and healthcare providers the world over have been working for years to prevent the transmission of the disease and improve outcomes for those affected by it. The “face” of HIV has changed from the 1980s when it was believed to be a disease that affected only MSM to a much more diverse one in 2017. We now know that this disease exists in all parts of the world, and that it affects men, women, children, and the elderly. While there is some disagreement as to the relationship between poverty and HIV prevalence, it is clear that developing countries bear a greater burden of this disease than developed countries (1, 2). Within developing countries, one population in particular is experiencing very high rates of HIV infection. Young women, specifically in sub-Saharan Africa, are contracting HIV at high rates (3).

As with many public health issues, it is important to consider factors that may be contributing to these high rates of HIV in young women. Not only do sub-Saharan African women live in developing countries that are experiencing high rates of HIV, they also live in societies where gender-based violence (GBV) is rampant. Data from seven sub-Saharan countries in 2010 indicated that on average, 44% of women ages 15-49 years old have experienced GBV (4). GBV

has been established as a risk factor for HIV for various reasons that change throughout the lifespan (5).

Zambia has suffered from the HIV epidemic since the 1980s when the virus was first discovered and the virus continues to cause a large burden of disease in the country. Women in Zambia experience HIV at higher rates than their male peers due to multiple factors. First, aspects of a woman's anatomy put her at higher risk of contracting HIV than a man. Second, experiencing GBV increases a woman's risk of contracting HIV as she may not be able to negotiate condom use.

Like their peers in other sub-Saharan countries, women in Zambia are suffering from both HIV/AIDS and GBV at high rates (6). A large body of research indicates that exposure to GBV amplifies the risk of contracting HIV, and programs in other sub-Saharan African countries addressing the two issues together have proven successful in increasing knowledge about GBV, decreasing self-reported experiences with GBV, and decreasing HIV/AIDS transmission. A review of the literature was completed and eight programs addressing HIV, GBV, or HIV and GBV together were identified.

Based on these programs, two key components were identified as necessary for a successful intervention. The first is the involvement and education of boys. Successful programs' curriculums included programming about healthy relationships, gender-equitable attitudes, and GBV for young men. The second key component is microfinance education for the girls. Girls' financial dependence on men can be one of the reasons that they enter or stay in abusive relationships. Teaching them to be self-confident and financially independent can reduce their chances of being involved in an abusive relationship, thus decreasing their chances of contracting HIV as a result of GBV.

These eight programs and the two key components identified from them will inform the design of the program proposed in this paper, entitled “Our Health, Our Responsibility.” The intervention will target boys and girls ages 15-24, because this is the age range during which the HIV rate begins to become higher for girls than for boys and also because many girls experience GBV for the first time before the age of 24. It will take place in 10 villages across Zambia, with each village having a girls program and a boys program. One hundred boys and 100 girls will participate nationwide.

Research has shown that GBV is a major risk factor for HIV transmission. Research has also shown that it is possible to implement programs that address GBV as an amplifier of HIV risk. Countries that share similar characteristics to Zambia have successfully implemented such programs and can serve as examples when designing a program for Zambia. It is possible to implement such a program in Zambia and could contribute to the reduction of HIV/AIDS and GBV rates.

2.0 BACKGROUND

2.1 HIV/AIDS

HIV/AIDS has had a profound impact on the health and economies of societies worldwide since the 1980s, when HIV was first discovered. While the virus itself will infect any host, social and structural factors create contexts such that certain populations have experienced significantly higher rates compared to others. The first case of AIDS was diagnosed in 1981 and by 1985 17,000 cases had been reported worldwide (7). AIDS was first seen in men who had sex with men (MSM) in the United States (8). Scientists began working to isolate the virus that caused this disease, which had not been seen previously (8). When the disease was first discovered, it was primarily focused among MSM, so it was thought to be a disease that only they could contract; however, within a few years of discovery it began appearing in hemophiliacs, intravenous drug users, and heterosexual people, including in Africa (8). Within four years of the discovery of AIDS, it was found in all regions of the world (8). Thus started the world-wide pandemic that persists today.

HIV is a virus that attacks the body's immune system by destroying the CD4 cells, leaving the body at higher risk of contracting other serious illnesses and unable to fight off the infections. If left untreated, HIV leads to AIDS, which happens when the body's immune system is so depleted that it is no longer able to fight off infections. The most common illnesses contracted by HIV positive patients, particularly in developing countries, are tuberculosis, hepatitis B, Cryptococcus, and malaria (9). Therefore, patients do not die from HIV itself, instead they die from the cumulative effect of the coinfections. As the scope of the disease became more apparent, so too did the modes of transmission. Although it was originally speculated that only MSM could contract

HIV (and consequently develop AIDS), as research progressed it became apparent that the virus could be transmitted through blood, semen, vaginal fluids, and breastmilk (8).

2.2 GENDER BASED VIOLENCE

GBV is a widespread public health issue and a concern for women across the globe. According to the World Health Organization (WHO), approximately 35% of women worldwide have experienced GBV (10). GBV is a broad issue, with multiple definitions and requiring a wide variety of responses. The terms “violence against women,” “intimate partner violence,” “sexual violence,” and “gender based violence” are often used interchangeably (11).

The WHO and the United Nations (UN) define violence against women as “any act of gender-based violence that results in, or is likely to result in, physical, sexual or mental harm or suffering to women, including threats of such acts, coercion or arbitrary deprivation of liberty, whether occurring in public or in private life” (10). This paper will use this definition and the term “gender-based violence” rather than “violence against women.” “Gender-based violence” is more inclusive of lesbian, gay, bisexual, transgender, and queer people than “violence against women.” In addition, the definition used for this paper includes “intimate partner violence” (which is often used interchangeably with “gender-based violence” or “violence against women”) as well as non-partner violence. This is because the violence against women in Zambia is not only being perpetrated by intimate partners. In some cases, it takes the form of transactional sex, wherein a man gives a woman money or gifts in exchange for sex. This is particularly an issue among young girls who are having sex with older men in exchange for money to pay their school fees.

Until the late 20th century, GBV was rarely viewed as an issue that needed to be addressed. This may be rooted in many societies' history of Judeo-Christianity, Greek philosophy, and the Common Law, which all encourage patriarchy as a societal norm (12). While both men and women can experience GBV, this paper will be examining its impact on women. In 1993 the UN General Assembly signed the "Declaration on the Elimination of Violence Against Women." This declaration identified the multitude of ways in which GBV violates a woman's human rights as well as pinpointed the specific groups (minorities, refugees, and female children, among others) that are most at risk of experiencing GBV (13).

Beginning in the mid-2000s, the Zambian government began taking the topics of HIV and GBV very seriously and is implementing programs to decrease the rates of these issues. However, programming up until now has focused on either HIV or GBV, not both. It is important to understand any connections that might exist between the two to create specific, targeted programming.

2.3 CONNECTION BETWEEN HIV AND GBV

Beginning in the late 1990s, researchers started to recognize that there might be a relationship between HIV/AIDS and GBV. They found that women who are in abusive relationships are at a higher risk of contracting HIV and women who have HIV are more likely to have experienced GBV than those who are not HIV positive (8, 14). In "The Intersections of HIV and Violence: Directions for Future Research and Interventions" Maman et al. examined multiple studies looking at the relationship between HIV/AIDS and GBV. This review indicated that various types of violence (e.g. childhood violence, intimate partner violence) put women at higher risk of

contracting HIV across various age groups and countries (15). The fact that these trends were seen in women of various backgrounds strengthens the argument that there is a relationship between HIV/AIDS and GBV.

Very few studies have been conducted specifically on this intersection in Zambia. It is possible that Zambia shares some characteristics with other countries also experiencing high rates of GBV and HIV, but it is also possible that there are confounding factors, such as government structure, healthcare resources, and education system structure, that are impacting these issues in Zambia.

2.3.1 Women and HIV/AIDS

In 2016 women made up 51% of adults living with HIV worldwide (16). In general, women experience higher rates of HIV than their male counterparts for a multitude of reasons. These include biological, cultural, socioeconomic, behavioral, and structural factors. While statistics for all adults are relatively similar for men and women, young women have recently accounted for twice as many new HIV infections as their male peers (17).

Biological Factors

Biologically, women have more mucosal surface area than men, meaning they are more exposed to infectious pathogens and fluids during sexual intercourse with an HIV positive person (18). Adolescent girls are at an even higher risk of contracting HIV than adult women because they have more vaginal mucus and higher chances of developing vaginal inflammation, two factors which increase their risk (17). Previous sexually transmitted infections (STIs) increase a person's risk of

contracting HIV. STIs are difficult to diagnose in women, making them a contributing factor to women's risk of contracting HIV (18).

Cultural Factors

Cultural beliefs and practices can result in higher rates of HIV in women than in men. These can vary between countries, but may include traditional practices or cultural beliefs about gender norms and roles (18). In many patriarchal cultures, women have little control over their health statuses and may even be limited in their ability to seek care.

Socioeconomic Factors

Low socioeconomic status has been associated with an increased risk of contracting HIV (18). This is due to multiple factors, including “earlier sexual experience, lower condom use at last sex act, having multiple sex partners, increased chances that the first sex act is non-consensual, and a greater likelihood of having had transactional sex or physically forced sex” (18, pg. 9). Transactional sex, wherein someone (usually a man) pays someone else to participate in sexual acts, is a particularly common issue in Zambia (18). In Zambia, the issue of “sugar daddies,” wherein a young woman has sex with an older man in exchange for money or gifts, is an issue of particular importance (19).

Behavioral Factors

Risky sexual behaviors, such as lack of condom use and sex with multiple partners, increase the risk of HIV transmission for both men and women (18).

2.4 FACTS ABOUT ZAMBIA

Zambia is a sub-Saharan country which borders Tanzania and the Democratic Republic of the Congo to the north, Mozambique to the east, Zimbabwe, Botswana, and Namibia to the south, and Angola to the west (Figure 1) (20).



Figure 1: Maps of Zambia

It is a former British colony known as Northern Rhodesia and gained its independence from the United Kingdom in 1964 (21). Its population was approximately 15,510,711 as of 2016, which includes over 70 different tribal groups (20). The World Bank has classified Zambia as a Lower Middle-Income Country (LMIC) (22). This means that Zambia's Gross National Income is between \$1,026 and \$4,035 (23). Zambia's primary economic sectors are agriculture and mining (20).

2.5 HIV/AIDS AND GBV IN ZAMBIA

HIV/AIDS in Zambia

Sub-Saharan Africa was one of the first regions to experience high rates of HIV (7). Zambia was quickly affected by the disease, with the first case being diagnosed in 1988 (24). The prevalence rate of HIV/AIDS in Zambia peaked in 1997 at 15.8% (25). The prevalence rate then decreased steadily until 2007, when it reached 13.6% (25). Since that time, however, improvements in the prevalence rate have been small, with it sitting at 12.9% in 2015 (25).

Like many sub-Saharan African countries, Zambia experiences a high burden of disease from HIV/AIDS. According to the 2014 Zambian Demographic Health Survey, the prevalence rate for HIV among women ages 15-49 in Zambia is 15% compared to 11% for men ages 15-49 and is higher for women than men in every age group (Figure 2) (6). As previously described, women have a multitude of risk factors that increase their chances of contracting HIV. Zambia's status as a LMIC with poor infrastructure exacerbates many of these risk factors. Difficulty accessing quality healthcare, including Anti-Retroviral Therapy (ART), which is used to treat HIV/AIDS, combined with societal gender expectations, beliefs, and myths are contributing to the differences in rates of HIV/AIDS between men and women in Zambia (26, 27).

Cultural factors in Zambia play a significant role in these differences. For example, in Zambia, it is believed that a widow must be sexually "cleansed" after the death of her husband by having unprotected sexual intercourse with another man. Another belief is that if a HIV positive man has unprotected sex with a virgin he will be cured. Lastly, the practice of having "dry sex," in which a woman inserts various herbs into her vagina to dry it out, is common. This practice leaves women at higher risk of contracting HIV because the dry vagina causes the sexual intercourse to be abrasive, which can result in sores and cuts in the vagina through which HIV can

enter (18). While research and policy are beginning to highlight the danger of these practices they are still common in many areas.

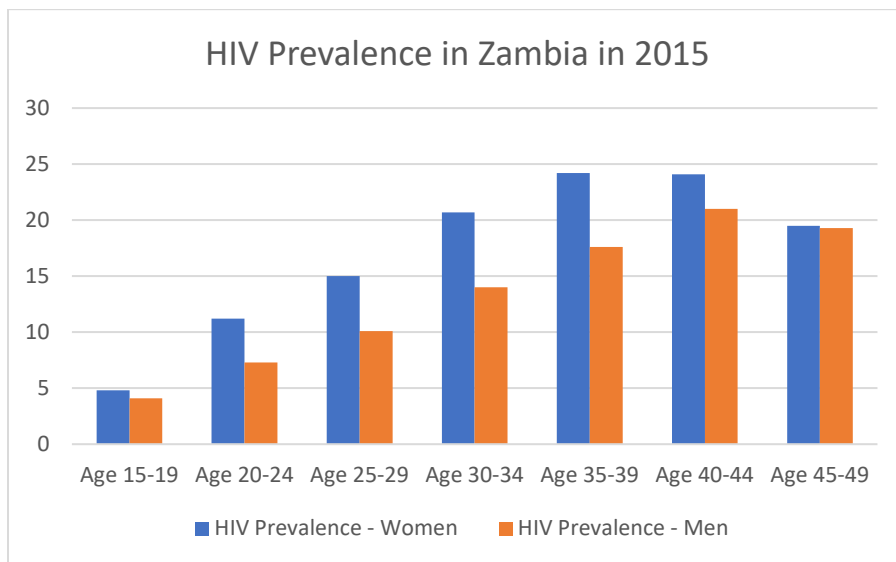


Figure 2: HIV Prevalence in Zambia in 2015

Despite improvements in the prevalence rate in Zambia, HIV/AIDS remains the number one cause of years of life lost (YLLs) (Figure 3) (28). The life expectancy in Zambia was estimated to be 52 years old in 2016, which is ranked 217th worst in the world (21). It can be presumed that one of the contributing factors to the low life expectancy in Zambia is the high number of YLLs caused by HIV/AIDS.

In addition to contributing to the low life expectancy and high numbers of YLLs, HIV/AIDS is a major contributor to the number of Years of Life Lived with Disability (YLDs) and Disability Adjusted Life Years (DALYs) (Figure 4) (28). YLDs are a metric used to measure the number of years that a person lives with a disability and DALYs measure the number of life years that a person loses due to death from a disability (29).

CAUSES OF PREMATURE DEATH

Years of life lost (YLLs) quantify premature mortality by weighting younger deaths more than older deaths.

Ranks for top 25 causes of YLLs 1990-2010, Zambia

# YLLs in thousands (% of total)	Rank and disorder 1990	Rank and disorder 2010	# YLLs in thousands (% of total)	% change
1,067 (14.6%)	1 HIV/AIDS	1 HIV/AIDS	1,745 (20.4%)	64
1,097 (14.9%)	2 Malaria	2 Malaria	1,155 (13.4%)	5
818 (11.2%)	3 Lower respiratory infections	3 Lower respiratory infections	688 (8.0%)	-16
756 (10.3%)	4 Diarrheal diseases	4 Diarrheal diseases	500 (5.8%)	-34
583 (8.0%)	5 Protein-energy malnutrition	5 Protein-energy malnutrition	474 (5.6%)	-21
351 (4.8%)	6 Meningitis	6 Meningitis	403 (4.7%)	13
184 (2.5%)	7 Tuberculosis	7 Neonatal encephalopathy	279 (3.3%)	55
177 (2.4%)	8 Neonatal encephalopathy	8 Syphilis	269 (3.1%)	52
177 (2.4%)	9 Syphilis	9 Tuberculosis	247 (2.9%)	33
134 (1.8%)	10 Preterm birth complications	10 Neonatal sepsis	210 (2.5%)	77
129 (1.8%)	11 Road injury	11 Preterm birth complications	194 (2.3%)	46
121 (1.7%)	12 Neonatal sepsis	12 Road injury	146 (1.7%)	14
99 (1.4%)	13 Fire	13 Stroke	128 (1.5%)	60
89 (1.2%)	14 Congenital anomalies	14 Fire	105 (1.2%)	7
79 (1.1%)	15 Stroke	15 Falls	98 (1.1%)	69
69 (0.9%)	16 Maternal disorders	16 Ischemic heart disease	81 (1.0%)	50
73 (1.0%)	17 Measles	17 Congenital anomalies	84 (1.0%)	-7
65 (0.9%)	18 Drowning	18 Drowning	77 (0.9%)	20
64 (0.9%)	19 Poisonings	19 Epilepsy	75 (0.9%)	50
56 (0.8%)	20 Falls	20 Interpersonal violence	75 (0.9%)	98
54 (0.7%)	21 Ischemic heart disease	21 Maternal disorders	76 (0.9%)	-5
50 (0.7%)	22 Epilepsy	22 Cirrhosis	68 (0.8%)	48
46 (0.6%)	23 Cirrhosis	23 Poisonings	60 (0.7%)	-7
38 (0.5%)	24 Interpersonal violence	24 Self-harm	54 (0.6%)	64
33 (0.4%)	25 Self-harm	25 Diabetes	48 (0.6%)	79
	26 Diabetes	26 Measles		

This chart shows the change in the top 25 causes of YLLs due to premature mortality from 1990 to 2010. Solid lines indicate a cause has moved up in rank or stayed the same. Broken lines indicate a cause has moved down in rank. The causes are color coded by blue for non-communicable diseases, green for injuries, and red for communicable, maternal, neonatal, and nutritional causes of death.

Figure 3: Causes of Premature Death

The increase in YLLs and DALYs not only impacts those individuals suffering from HIV/AIDS, it also has major implications for Zambian society. A decrease in the workforce due to disability or deaths from HIV/AIDS results in a negative ripple effect for the economy due to decreased numbers of skilled workers, which in turn leads to increased production costs, lower government revenues, and increased pressure on the social security system (30). One sector that has the potential to be greatly impacted by a loss of workers to HIV/AIDS is the agriculture sector. Agriculture is one of the primary sources of income for many Zambians. Without a sufficient number of physically capable laborers, the agriculture sector suffers. Not only does this influence those who work directly with the sector, it also has the possibility of affecting other Zambians, as a decrease in agriculture production will ultimately have an impact on the amount and cost of food available to Zambians, thus impacting their nutritional well-being (31).

DISABILITY-ADJUSTED LIFE YEARS (DALYs)

Disability-adjusted life years (DALYs) quantify both premature mortality (YLLs) and disability (YLDs) within a population. In Zambia, the top three causes of DALYs in 2010 were HIV/AIDS, malaria, and lower respiratory infections. The only cause to appear in the 10 leading causes of DALYs in 2010 and not 1990 was preterm birth complications.

The top 25 causes of DALYs are ranked from left to right in order of the number of DALYs they contributed in 2010. Bars going up show the percent by which DALYs have increased since 1990. Bars going down show the percent by which DALYs have decreased. Globally, non-communicable diseases and injuries are generally on the rise, while communicable, maternal, neonatal, and nutritional causes of DALYs are generally on the decline.

- Communicable, maternal, neonatal, and nutritional
- Non-communicable
- Injuries

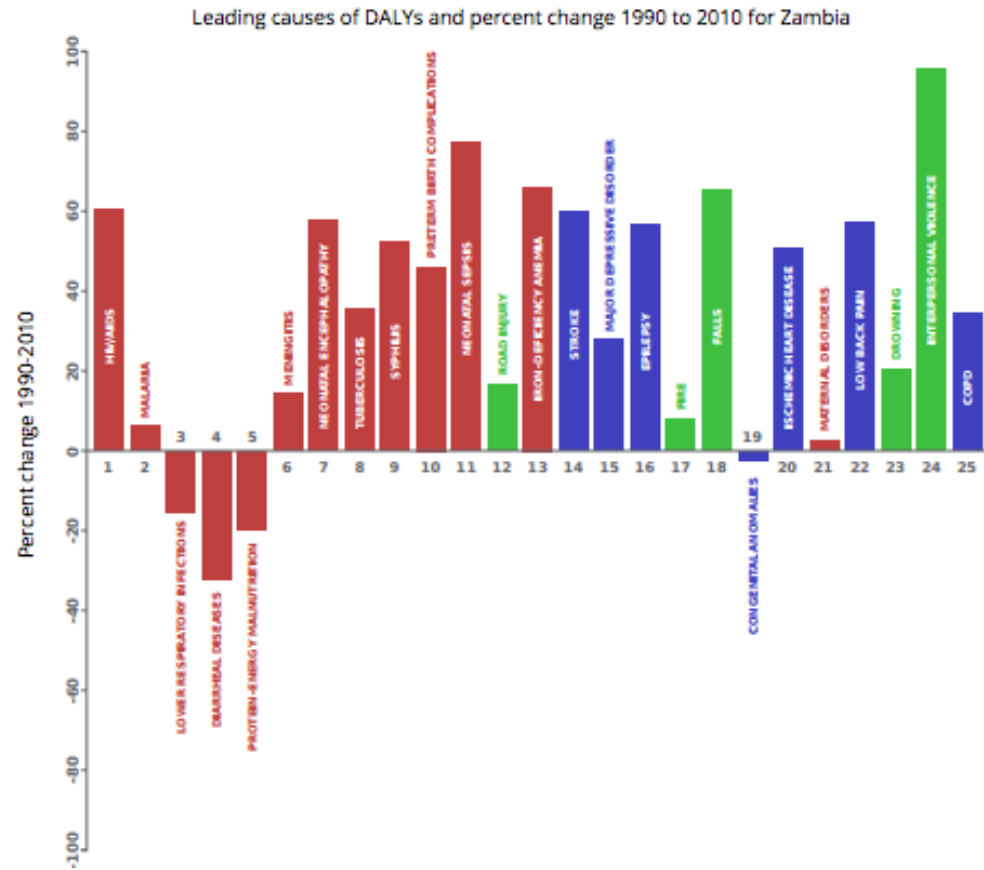


Figure 4: Disability Adjusted Life Years

GBV in Zambia

During their lifetime, 43% of Zambian women will experience GBV. Ninety-eight percent of these women will suffer their first abuse before the age of 24 and the abuse will most likely continue throughout their lives, with an average of 18% of Zambian women reporting abuse in the past 12 months (Figure 3) (6). Women living in urban areas experience slightly higher rates of GBV (44.7%) than their peers in rural areas (42.3%) (6). There are disparities in the rates across the 10 provinces in Zambia, with the highest rates seen in Northern Province (53.2%) and the lowest rates seen in Eastern Province (34.1%) (6). There is little evidence to explain why these differences exist. It is possible that certain regions have received more resources and interventions from international non-governmental organizations, but information to confirm this is not available.

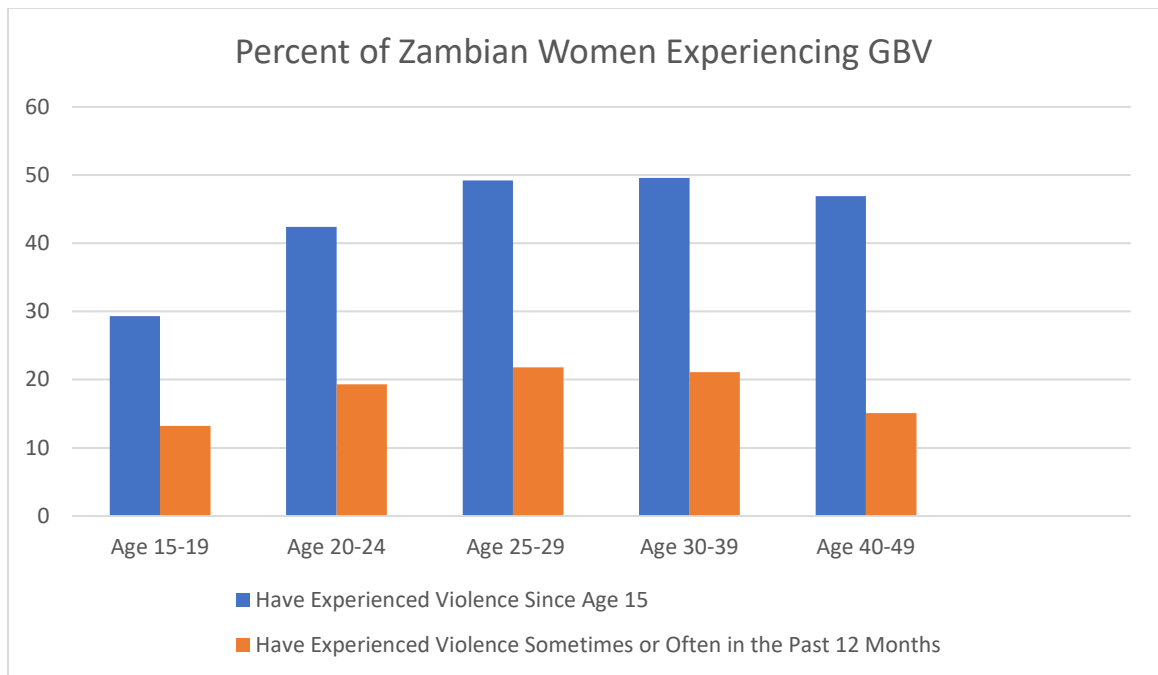


Figure 5: Percent of Zambian Experiencing GBV

Laws About GBV in Zambia

In 2011 the Zambian parliament took steps towards reducing GBV in its country by passing the “Anti-Gender-Based Violence Act, 2011.” The law defines GBV as

any physical, mental, social or economic abuse against a person because of that person’s gender, and includes... violence that results in, or is likely to result in, physical, sexual or psychological harm or suffering to the person, including threats of such acts, coercion or arbitrary deprivation of liberty, whether occurring in public or private life; and actual or threatened physical, mental, social or economic abuse that occurs in a domestic relationship (32, pg. 4).

The act includes provisions meant to protect people from experiencing GBV and protect victims of GBV from being re-victimized (32). Not only does the act protect against physical forms of GBV, it also protects against “economic abuse” and “emotional, verbal, and psychological abuse” (32, pg. 5). Inclusion of these protections is an indication that the Government of the Republic of Zambia (GRZ) recognizes the complexity of GBV. The act makes provisions for victims of GBV, including the ability to file restraining orders against their perpetrators, free medical care, and emergency shelters (33). Perpetrators who violate their restraining orders are subject to up to two years of imprisonment (33).

The Zambian legal system has two components: statutory and customary law. The Anti-Gender-Based Violence Act falls under the statutory system; however, many areas of Zambia are still governed by the more traditional customary law, which is based on male power and gender inequality, making it difficult to enforce the Anti-Gender-Based Violence Act (34). Data about the effectiveness and utilization of the law are not available.

A Framework for HIV and GBV in Zambia

GBV amplifies the risk of contracting HIV in multiple ways. The socio-ecological model provides a helpful framework for understanding all of the levels at which this occurs (Figure 6). It is possible

to influence some of the mechanisms in this model through programming; however, others, such as biological factors, cannot be changed.

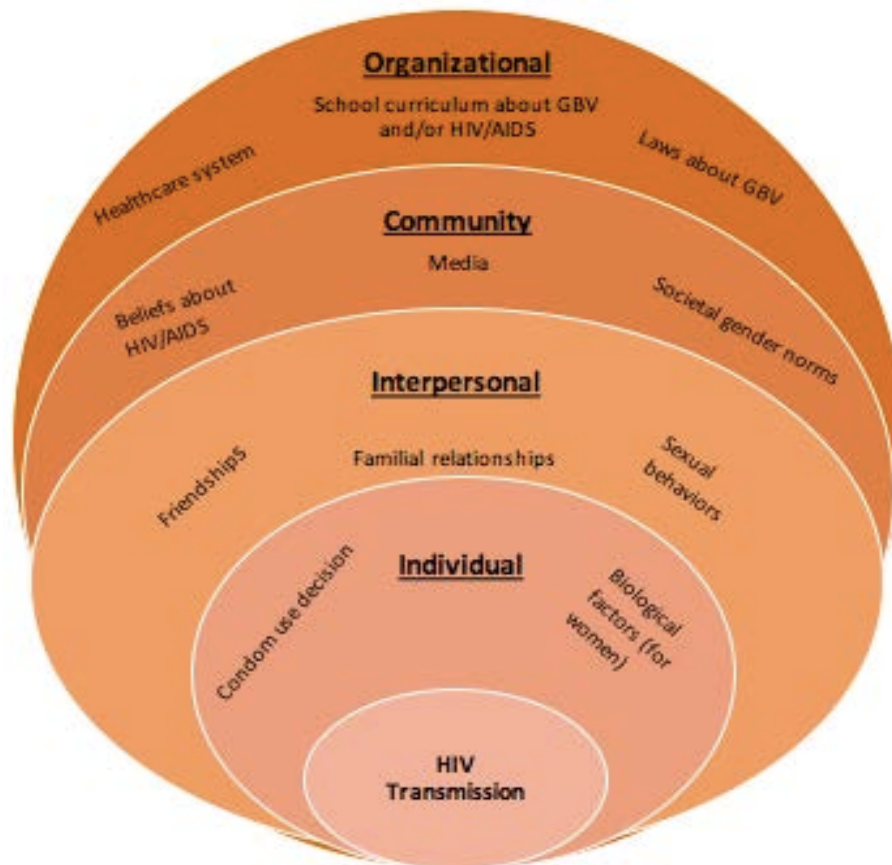


Figure 6: Socio-Ecological Model of GBV's Amplification of HIV

At the individual level, whether someone chooses to use a condom or not can influence their risk of contracting HIV. Both men and women have the ability to decide whether to use a condom during sexual intercourse; however, unequal power dynamics in a relationship can greatly influence a woman's ability to insist on condom use (35). In South Africa, researchers found a relationship among men between a history of gender-based violence perpetration and decreased condom use (36). Other aspects of the individual level of the socioecological model are the

biological factors discussed above that increase a woman's risk of HIV contraction. As previously mentioned, it is not possible to modify these factors.

Mechanisms of the interpersonal level of the socio-ecological model are friendships, familial relationships, and sexual behaviors. A young person's friendships and social networks can greatly influence their knowledge and beliefs about sex, relationships, and health. Fostering positive peer relationships between youth can have an impact on how they approach and act in sexual relationships. Familial relationships play important roles in modeling traits of a healthy relationship for a young person. If an adolescent witnesses GBV at home while growing up, they may be less likely to recognize it as an unhealthy relationship trait. The influences of friends and family on a young person's beliefs about sex and healthy relationships are of particular importance in rural Zambia, where families and communities are very tightknit. Lastly, a couple's decisions about sexual behaviors are at the interpersonal level; however, as previously mentioned, power dynamics in abusive relationships often mean that one member of the couple is primarily making all of the decisions.

Community can have a large influence on GBV's amplification of HIV. This can come from a community's or society's beliefs about gender norms. In patriarchal societies like Zambia, men and women both feel pressure to act in certain ways in a relationship. This generally manifests as the man having the majority of the decision-making power in a relationship and the woman being submissive to the man. A society's or community's beliefs about HIV/AIDS can contribute to GBV's amplification of HIV as well. Myths or misinformation about how HIV is transmitted can lead to higher rates of GBV, which in turn lead to higher rates of HIV transmission. An example of this in Zambia (as mentioned previously) is the myth that if a man has HIV, he can have sex with a virgin and be cured. This act of having sex with a virgin is a form of violence, as

the girl often does not have a choice in the matter. Another mechanism at the community level is the media. While much of Zambia is very rural and has limited access to media, youth are still exposed to various messages about relationships and sex. A popular form of media in the rural villages in Zambia is the radio, so youth are exposed to these messages through music.

The final level of the socio-ecological model at which GBV amplifies the risk of HIV transmission is at the organizational level. In Zambia, the organizational level encompasses the healthcare system, the school curriculum about GBV and HIV/AIDS, and the laws about GBV. The healthcare system plays multiple roles in GBV's amplification of the transmission of HIV. The Zambian healthcare system includes community health workers (CHWs), whose job it is to go out into the communities and provide health education. It is common for CHWs to educate about HIV/AIDS; however, it is not common for them to provide information about healthy relationships and GBV. For many people in rural areas, the CHWs are their only source of health information, so if CHWs do not provide GBV education, they might not be able to recognize traits of healthy or unhealthy relationships. At the health clinics, a person must sign a register in order to receive contraception, including condoms. This introduces an element of shame for people wanting to use condoms as they may not be able to trust that the register will be kept confidential. Women who are already in abusive relationships may be less likely to even attempt condom negotiation if they feel shamed by their healthcare provider when attempting to acquire condoms.

The school system in Zambia influences GBV's amplification of HIV transmission in a similar way to the healthcare system. HIV/AIDS information is provided in the health classes in the schools (although it could be argued that the curriculum is not always comprehensive). GBV does not receive the same sort of attention in the curriculum as HIV/AIDS. Without knowing the

traits of unhealthy relationships, girls are not as able to protect themselves against contracting HIV/AIDS as they would be if they received a more comprehensive education.

The last mechanism of the socio-ecological model of GBV's amplification of HIV in Zambia is the legal system. As previously mentioned, there is a law in Zambia addressing GBV. If a woman does not feel she has legal recourse to take against an abusive partner, she may be less likely to take action or try to leave the relationship. The longer she stays in an abusive relationship the more her risk of contracting HIV increases. See Table 1 for a summary of these mechanisms.

Table 1: Mechanisms of the Socio-Ecological of GBV's Amplification of HIV

Mechanism	Contribution to GBV Amplification of HIV
Individual	
Condom use decision	<ul style="list-style-type: none"> • Condom use is an individual choice • GBV can result in reduced condom use • Reduced condom use → increased risk of HIV transmission
Female biological factors	<ul style="list-style-type: none"> • Girls have certain biological factors that leave them at higher risk of contracting HIV. • Examples: friable vaginal mucosa, increased risk of vaginal inflammation in adolescence, vaginal tears, cervical ectopy
Interpersonal	
Friendships or social networks	<ul style="list-style-type: none"> • Friends and social networks can normalize GBV
Familial relationships	<ul style="list-style-type: none"> • Exposure to GBV as a child → increased risk of perpetrating and suffering from GBV
Sexual Behaviors	<ul style="list-style-type: none"> • GBV contributes to the practice of unhealthy sexual behaviors • Unequal power dynamics in relationships → decreased condom negotiation
Community	
Beliefs about HIV/AIDS	<ul style="list-style-type: none"> • Misinformation can influence a person's perceived risk of HIV contraction
Societal gender norms	<ul style="list-style-type: none"> • Gender norms can influence how partners behave in a relationship,
Organizational	
Laws about GBV	<ul style="list-style-type: none"> • If GBV perpetrators do not face legal threats, they are less likely to change their behaviors. • If a woman does not have legal recourse to take against her abuser, she is less likely to report the abuse or seek out a safer environment for herself.
School curriculum about HIV/AIDS and GBV	<ul style="list-style-type: none"> • Schools can be a major source of education about HIV/AIDS and GBV • HIV/AIDS prevention is taught as part of the health curriculum however GBV is not usually addressed
Healthcare system	<ul style="list-style-type: none"> • GBV's amplification of HIV transmission is affected by healthcare system in multiple ways • Women need healthcare providers to provide information about traits of healthy relationships, techniques for avoiding unhealthy relationships, and resources for leaving unhealthy relationships. • Difficulty acquiring or shame involved in acquisition of contraceptives decreases women's desire to use them (e.g. in Zambia, one must sign a register to receive male or female condoms). • Community Health Workers provide education about health topics during outreach efforts • HIV is a commonly addressed topic. GBV is not commonly addressed, leading to an amplification of HIV as a result.

3.0 METHODS

This paper is based on a search of relevant literature. This search was conducted with guidance from the Public Health Informationist at the University of Pittsburgh Health Sciences Library System. This search was conducted between April and June 2017 in both PubMed and MeSH (see appendix). The search terms returned 938,722 results. The results were narrowed by reading the titles and abstracts. Bibliographies from relevant articles found from these searches were examined and relevant articles from them were also included.

From the PubMed, MeSH terms, bibliography, and internet searches, eight articles reviewing programs were selected (n=8). The inclusion criteria for selecting these articles was that they reviewed programs that targeted HIV, GBV, or HIV and GBV together, were implemented in Africa, and were implemented after 1990. Articles that reviewed programs not implemented in Africa were reviewed for background information but were not included in the results.

4.0 RESULTS

Eight articles that met the inclusion criteria were identified through the literature search. The programs reviewed by these articles were entitled the Zambia NOW2 Intervention, the Partner Project, the GE + CE Intervention, the Stepping Stones Program, the Intervention with Microfinance for AIDS and Gender Equity (IMAGE), The Adolescent Girls Empowerment Program (AGEP), The Pigs for Peace Program, as well as an unnamed pilot program. Results are broken down into programs addressing HIV, programs addressing GBV, and programs addressing both HIV and GBV. Some programs addressed “intimate partner violence” or “IPV.” They are included in the results as the definition of GBV used for this paper includes IPV.

4.1 HIV

The Zambia NOW2 Intervention was designed based on the emerging hypothesis that having both members of a couple participate in HIV prevention programming would be more successful than previous programming that targeted only individuals. The intervention took place at University Teaching Hospital in Lusaka, Zambia, and was implemented from 2006-2008. The intervention group consisted of both serodiscordant (where one member of the couple was HIV positive and the other was HIV negative) and seroconcordant couples (where both members of the couple were HIV positive). Researchers believed that the serodiscordant couples could also benefit from participation in the study, as observing HIV prevention methods in serodiscordant couples can reduce the risk of transmitting ART resistance (37).

Four hundred thirty-two participants (216 couples) were randomized to either individual programming or gender-concordant group programming. While the intervention was intended to reduce HIV incidence and transmission of ART resistance, researchers were also interested in looking at whether access to barrier methods, IPV, or communication styles influenced a couple's likelihood of using protection during intercourse. Intervention sessions addressed IPV and introduced techniques for stress reduction (e.g. deep breathing and meditation). The study recognized that attempts to negotiate condom use combined with unequal power in relationships could result in IPV and that future interventions to address IPV could serve to reduce HIV transmission (37).

Results for multiple variables were determined for this study: demographics, barrier method acceptability, barrier method use, conflict resolution studies, predicting use of barrier methods with sexual barrier acceptability, predicting use of barrier methods with willingness to use them, and predicting use of barrier methods from communication and violence. A decrease was seen in negative communication and violence, while positive communication and extreme violence increased after 12 months. In addition, researchers examined whether communication skills could predict barrier use and found that an increase in positive communication resulted in a decrease in barrier use (37).

The Partner Project was another intervention that examined the sexual risk behaviors of seroconcordant and serodiscordant couples in Zambia. It was implemented between 2003-2006. This study was specifically looking at the role that men play in making decisions about sexual behavior in a relationship. Eighty-three couples (166 participants) participated in gender-concordant group sessions, with all the women participating in three sessions, while some of the men participated in three sessions and some participated in one session. This was done to assess

the impact of exposing the men to more programming on the couples' sexual risk behaviors. After 12 months, men who participated in multiple sessions reported increased condom use compared to men who participated in one session, and women reported an increase in use of female condoms compared to baseline (38).

4.2 GBV

In “Changing Gender Norms and Reducing Intimate Partner Violence: Results From a Quasi-Experimental Intervention Study With Young Men in Ethiopia,” Pulerwitz et al. examined the GE + CE (Group Education and Community Engagement) intervention in Ethiopia targeting males ages 15-24. The intervention was implemented in 2008 and assigned 809 boys to groups that participated in GE and CE, just CE, or neither GE or CE. The community engagement component of the intervention involved having the boys participate in a march on International Father's Day, music and drama skits performed for communities, and the distribution of newsletters. The group education curriculum involved discussions, role plays, and personal reflection (39). Results indicated that participants in the GE and CE expressed “increased support for gender equitable norms” as well as decreased rates of IPV experienced by their partners (39).

The Pigs for Peace intervention took place in the Democratic Republic of the Congo. Eight-hundred and thirty-three households were enrolled. Eighty-four percent of those households were headed by women. Participants were given female pigs as productive assets to serve as “savings accounts” for future difficult times. Participants “paid off” the pigs by giving two of their piglets to other villagers. After this, participants were to continue raising their pigs and selling them in order to achieve financial stability. Eighteen months after taking the baseline survey, participants

in the intervention group were 24.7% less likely to have outstanding loans or credit than the control group, had improved their subjective health statuses by 8.2% compared to the control group, reduced their symptoms of anxiety by 57.1% compared to the control group, and improved their symptoms of post-traumatic stress disorder by 5.7% compared to the control group. In addition, male participants in the both the intervention and control groups reported a decrease in perpetration of all types of violence, and female participants in both the intervention and control groups reported a decrease in experienced violence (40).

4.3 HIV AND GBV

The Stepping Stones Program was originally implemented in Uganda and has since been adapted and implemented in over 40 countries. The implementation in South Africa had 2,776 female and male participants between the ages of 15-26 (41). The program was 50 hours long and consisted of 13 sessions covering sexual and reproductive health, communication, love, risky sexual behaviors, GBV, STDs and HIV, preparing for the future, and dealing with grief and loss. The groups were gender concordant and conducted in 70 villages. The groups were led by facilitators of the same gender as the participants and slightly older age. The program did not result in a reduction in HIV rates. Male participants reported a reduction in GBV perpetration, however female participants reported increased rates of transactional sex (42).

Another program targeting young men was implemented in Dar es Salaam, Tanzania. This program recruited 44 young men and eight young women from “camps” in the city, established areas where youth go to socialize. The program used microfinance as a means of reducing HIV and GBV perpetration among male participants. While the program was intended to target young

men, some of the camps had female “members” who were invited to participate. Participants were divided into two groups, one which taught about microfinance and one which taught peer health leadership skills. For the microfinance group, researchers partnered with a local microfinance organization to teach participants “skills in business training and management” (43). The peer health leadership group consisted of youth who were identified by their peers as having good leadership potential. They received a one-week training which addressed “myths and misconceptions related to HIV transmission and prevention, condoms, violence and multiple sexual partnerships” (43). Participants reported increased support for gender-equitable norms and decreased rates of IPV perpetration (from 53% at baseline to 38% at follow up) (43).

The Intervention with Microfinance for AIDS and Gender Equity (IMAGE) study in the Limpopo region of South Africa combined microfinance education with programming about gender roles, cultural beliefs, relationships, communications, domestic violence, HIV, and leadership skills for a total of 860 women (40 per group) between 2001 and 2005. Compared to control groups, these women reported a significant decrease in experiencing GBV (44). Additionally, young women participating in the program demonstrated increased levels of “HIV-related communication, accessing HIV testing, and condom use” (44, pg. 2).

The Adolescent Girls Empowerment Program (AGEP) was implemented by the Population Council in Zambia between 2013-2015. The program aimed to reach 10,000 adolescent girls between the ages of 10-19 living in all parts of Zambia. The girls were divided into three groups. All three groups received programming on sexual and reproductive health, nutrition, life skills, and financial literacy. In addition, one group received vouchers to go to a healthcare provider while another group received vouchers to go to a healthcare provider and had savings accounts at local banks set up for them (45). Researchers were interested in looking at the effect that increasing

access to healthcare and financial services would have on the girls (46). Final results of the project were not available as of June 2017. See Table 2. for a summary of all programs reviewed.

Table 2: Programs reviewed for results

Program	Location	Target Population	Sample Size	Core Components	Victim or Perpetrator Focused?	Key Outcomes
Zambia NOW2 Program	Lusaka, Zambia	Married serocondordant and serodiscordant couples in Zambia	216 men, 216 women	<ul style="list-style-type: none"> • Sexual risk reduction • Consistent use of male and female condoms • Reducing sexual risk associated with alcohol or substance use • Conflict resolution • Sexual negotiation • Effective communication • Antiretroviral medication adherence (37) 	Both	<ul style="list-style-type: none"> • Increase in acceptability, willingness, and reported use of contraceptives after 1 year
Partners Project	Lusaka, Zambia	Married couples in Zambia	83 men, 83 women	<ul style="list-style-type: none"> • Males' role in couples' sexual decision making (38) 	Both	<ul style="list-style-type: none"> • All participants increased contraceptive use • Seronegative men who received 3 sessions increased condom use at a higher rate than seronegative men who received 1 session. • Seropositive men who received 3 sessions increased condom use at the same rate as seropositive men who received one session.
IMAGE Study	Limpopo, South Africa	Women living in rural villages of the Limpopo	860 women	<ul style="list-style-type: none"> • Financial literacy and stability 	Victim	<ul style="list-style-type: none"> • 55% reduction in IPV experienced after 2 years

Table 2 Continued

		region of South Africa		<ul style="list-style-type: none"> • Gender and GBV: Sisters for Life curriculum covered culture, gender roles, body image, domestic violence, and gender & HIV(44) 		<ul style="list-style-type: none"> • No reduction in rate of unprotected sexual intercourse
CE + GE	Ethiopia	Men ages 15-24	809 men	<ul style="list-style-type: none"> • Change in gender attitudes • Increase in community dialogue(39) 	Perpetrator	<ul style="list-style-type: none"> • Increase in gender equitable attitudes • 20% decrease in reported IPV experienced by partner
AGEP	Zambia	Girls ages 10-19		<ul style="list-style-type: none"> • Financial stability through curriculum that addressed: dreams, saving, earning, and managing money • Health and wellness knowledge through curriculum that addressed: reproductive health, GBV, life skills, HIV/AIDS and STIs, leadership skills, human rights, and nutrition (46). 	Victim	Not available as of June 2017
HIV and GBV Pilot Study	Dar es Salaam, Tanzania	Members of youth “camps”	44 men, 8 women	<ul style="list-style-type: none"> • Business skills training • Skill building in communication for addressing myths and misconceptions of HIV transmission and prevention, condoms, violence and multiple sexual partnerships (43). 	Perpetrator	<ul style="list-style-type: none"> • Increased support for gender-equitable norms • Decreased rates of IPV perpetration

Table 2 Continued

Stepping Stones	South Africa	Women and men, ages 15-26	1416 women, 1360 men	<ul style="list-style-type: none"> • Build knowledge, risk awareness, and communication skills (41). 	Both	<ul style="list-style-type: none"> • No reduction in HIV rates • Men reported reduction in GBV perpetration • Women reported increased rates of transactional sex
Pigs for Peace	Democratic Republic of Congo	Households	833 households (84% of which were headed by women)	<ul style="list-style-type: none"> • Improve the economic, health and empowerment statuses of women (40). 	Both	<ul style="list-style-type: none"> • Households in the intervention group decreased loans by 24.7% compared to control group • Increase in subjective health • Improvements in symptoms of anxiety and post-traumatic stress disorder • Reduction in perpetrated and experienced violence

5.0 DISCUSSION

Evidence suggests that HIV and GBV rates for women are interconnected and impact each other. Additionally, evidence suggests that it is possible to combine the two in interventions. Successful interventions demonstrate that interventions targeting HIV and GBV should focus on a few specific topics in order to see improvements.

The first type of successful intervention involved increasing leadership skills and self-confidence among women. The most successful programs included programming to teach about microfinance, through which women gain leadership skills, self-confidence, and the ability to lead financially independent lives.

The second type of programming involved intervening with boys and men. These interventions focused on increasing men's awareness of GBV, what constitutes GBV, skills for self-control to avoid abusing their partners, the importance of using contraception, and other means of preventing HIV transmission. While these programs do not specifically target women and girls, the secondary effects of the programs are to their benefit. These type of programs present GBV and HIV as problems that need to be addressed by all members of a community because they have the potential to negatively affect all members of a community.

The key to a successful program implementation of an intervention for both HIV and GBV in Zambia is to combine those parts of prior programs for either HIV or GBV with components of programs from other countries addressing these two issues. Some of the programs in other

countries targeted all adults. Because Zambia is experiencing such a sharp increase in rates of HIV and GBV in youth and young adults, it is most pragmatic to target the 15-24-year-old age group. Special considerations need to be taken when designing programming for youth and young adults as opposed to older adults. Of all the programs examined for this project, AGEV most closely resembles the ideal program to address HIV and GBV in Zambia. AGEV was aimed at improving the overall health of adolescent girls as opposed to just HIV and GBV prevention, but the format of the program would be appropriate for those topics. All of the programs reviewed have components that have the potential to be beneficial to use in Zambia, based on similar demographics and cultures.

5.1 THE SUGGESTED PROGRAM

The program proposed by this paper, entitled *Our Health, Our Responsibility*, is evidence based and designed to combat HIV transmission and GBV through comprehensive programming for adolescent girls and boys. It will be implemented simultaneously throughout the country of Zambia, targeting youth living in rural areas. Programming about HIV and GBV has historically been available primarily for youth living in urban areas, despite the fact that 59% of the population lives in rural areas (47).

Objective

The objective of this program is to reduce rates of both HIV and GBV through programming that targets these issues simultaneously. Studies conducted in other countries indicate that prevention of HIV and GBV among youth must be innovative and multifaceted.

Framework

The socio-ecological model provides a useful framework for the “Our Health, Our Responsibility” program (Figure 6). Because the relationship between HIV/AIDS and GBV is multifaceted, it is advantageous to intervene at multiple levels of the socio-ecological model. On the individual level, the intervention focuses on girls’ self-confidence, empowerment, independence, and knowledge about HIV transmission, as well as boys’ knowledge about HIV transmission. On the interpersonal level, boys’ anger management techniques, and boys’ and girls’ ability to interact utilizing healthy relationship behaviors will be addressed. The last level that the intervention takes place at is at the community level with the girls’ microfinance projects, which will not only impact them but their communities as well.

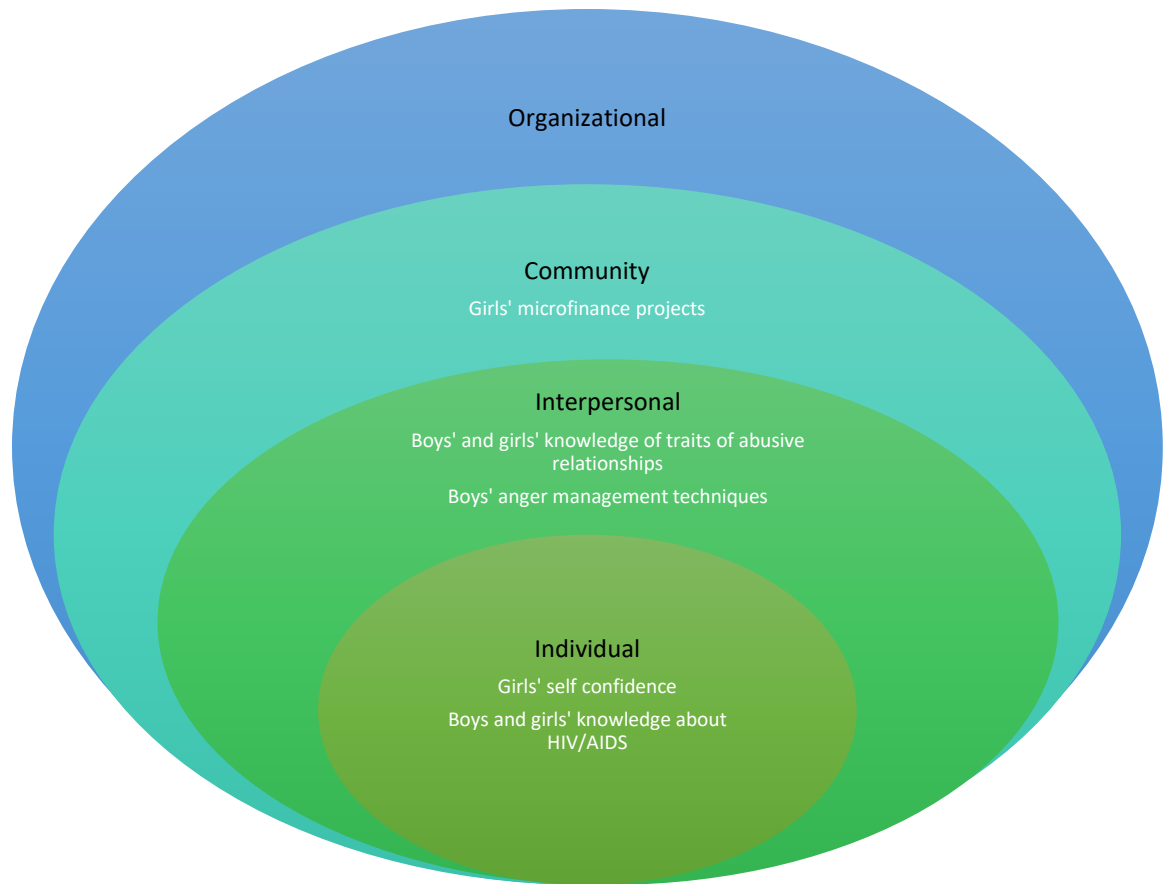


Figure 7: Socio-Ecological Model of “Our Health, Our Responsibility”

Intervention

Our Health, Our Responsibility will target boys and girls, as both have roles in preventing HIV transmission and GBV (48). While many programs choose to either target girls or boys, it is both possible and ideal to target both (48). Participants will be ages 15-24 because that is the age range in which the rate of HIV for Zambian females increases substantially, from 4.8% between the ages of 15-19 to 11.2% between ages 20-24 (6). Additionally, the majority of Zambian women experience GBV before the age of 24 (6). Sessions for the boys’ groups will address their roles in

preventing HIV transmission (including contraceptive use), sexual and reproductive health, traits of healthy relationships, treating girls and women properly, and challenging gender stereotypes. The girls' sessions will address improving and maintaining self-confidence, self-esteem, and self-efficacy, traits of healthy relationships, sexual and reproductive health (including contraceptive use and HIV transmission), and microfinance education (including design of and support for income generating activities). Both the boys' and the girls' sessions will be culturally appropriate. This will be achieved by working with local community leaders as well as facilitators to determine the most culturally appropriate and sensitive ways in which to address the topics of the program. Partnerships with local microfinance non-profits as well as Grassroot Soccer, which has a long history of working in Zambia, will also ensure that all components of the program are culturally appropriate and sensitive.

Group facilitators will be identified by speaking with village elders and leaders in villages. Facilitators will attend a national training in the capital city of Lusaka in order to learn the "Our Health, Our Responsibility" curriculum. They will then return to their villages and recruit youths ages 15-24. Ten villages will have both a boys and a girls group. Each group will have 10 members, for a total of 100 female participants and 100 male participants. Female facilitators will recruit for and facilitate the girls' groups. Male facilitators will recruit for and facilitate the boys' groups.

Short-term outcomes of this program will be increased confidence and knowledge about self-efficacy, finances, and traits of unhealthy relationships for the young women and increased knowledge of appropriate ways to treat girls and women and traits of healthy relationships for the young men. Both groups will have an increased knowledge of safe sexual practices, including proper use of contraception and modes of HIV transmission. These outcomes will be measured six months after completion of the program through surveys. The mid-term outcomes are that young

women will continue to demonstrate increased confidence and knowledge about self-efficacy, finances, and traits of unhealthy relationships and young men will demonstrate increased knowledge of appropriate ways to treat women. Both groups will continue to demonstrate knowledge of proper use of contraception and HIV prevention (Table 3). These outcomes will be measured one year after the completion of the program through surveys. The long-term impact of the program for the boys will be a reduction in transmission of HIV, a reduction of GBV perpetration, and an increase in gender equitable attitudes. The long-term impact of the program for the girls will be a reduction in incidence of HIV, a reduction of experienced GBV, an increase in girls' knowledge of traits of healthy relationships, an increase in girls' self-confidence, an increase in girls' knowledge of microfinance, and an increase in girls' self-reported financial independence. These long-term impact outcomes will be measured three years after completion of the program.

Table 3: Logic Model for "Our Health, Our Responsibility"

Our Health, Our Responsibility						
Objective: Educate both adolescent boys and girls about HIV and GBV through comprehensive programming						
	Inputs	Activities	Outputs	Short Term Outcomes (Within 6 Months of Program Completion)	Mid Term Outcomes (Within 1 Year of Program Completion)	Impact (Within 3 years of Program Completion)
Boys Program	<ul style="list-style-type: none"> Facilities for programs Office Space Office supplies Funding for transportation 	<ul style="list-style-type: none"> Yearly training for facilitators new facilitators Yearly training for returning facilitators 12 weekly training sessions for groups of 10 boys each at each site 	<ul style="list-style-type: none"> 10 male facilitators trained in boys curriculum 100 adolescent boys trained in appropriate ways to treat girls and women, sexual and reproductive health, and HIV/AIDS transmission 	<p>Interpersonal</p> <ul style="list-style-type: none"> Boys will express increased knowledge of appropriate ways to treat girls and women. Boys will demonstrate increased knowledge of safe sexual practices, including proper use of contraception and modes of HIV transmission. 	<p>Interpersonal</p> <ul style="list-style-type: none"> Boys report increase in gender equitable attitudes (through specific measures such as treatment of partner, beliefs about gender roles, etc.). Boys will report sustained practice of safe sexual health behaviors. 	<ul style="list-style-type: none"> Reduction in transmission of HIV Reduction of GBV Increase in gender equitable attitudes
Girls Program	<ul style="list-style-type: none"> Facilities for programs Office Space Office supplies Funding for transportation 	<ul style="list-style-type: none"> Yearly training for facilitators new facilitators Yearly training for returning facilitators 12 weekly training sessions for groups of 10 girls each at each site 	<ul style="list-style-type: none"> 10 female facilitators trained in girls curriculum 100 adolescent girls trained in techniques for improving self-efficacy, self-confidence, reproductive and sexual health, and financial independence 	<p>Interpersonal</p> <ul style="list-style-type: none"> Girls will express increased self-confidence and self-efficacy in interpersonal relationships. Girls will express increased knowledge of traits of unhealthy relationships within first 6 months of the program. Girls will demonstrate increased knowledge of safe sexual practices, including proper use of contraception and modes of HIV transmission. <p>Organizational</p> <ul style="list-style-type: none"> Girls will be able to articulate importance of financial independence. 	<p>Interpersonal</p> <ul style="list-style-type: none"> Girls will express a continued increase in self-confidence and self-efficacy in interpersonal relationships. Girls will express increased knowledge of traits of unhealthy relationships. Girls will report sustained practice of safe sexual health behaviors. <p>Organizational</p> <ul style="list-style-type: none"> Girls will sustain group microfinance projects. 	<ul style="list-style-type: none"> Reduction in transmission of HIV Reduction of GBV Increase in girls' knowledge of traits of healthy relationships Increase in girls' self confidence Increase in girls' knowledge of microfinance Increase in girls' self-reported financial independence

External Factors: Parents' willingness to allow their children to participate in the program, community support of the program, local and national government and traditional leaders' support of the program.

Assumptions: facilities and facilitators are available in the villages to conduct the program.

Curriculum

The curriculum used for this program is a combination of evidence-based activities, a partnership with Grassroot Soccer, and partnerships with local microfinance organizations.

The Girls' Curriculum

Week 1

Activity: Ice breaker

Description: Participants will introduce themselves by throwing a ball around a circle. When a girl catches the ball, she will say “My name is ____, I have the ball, I put it here (placing the ball on a body part such as head or knee), I pe pe ta!” (begin “dancing” by moving body part with ball in a circle). Others in the circle repeat after her and imitate the motion she is doing with the ball.

Activity: Introduction to program and establishment of ground rules.

Week 2

Activity: Life Path game

Description: Girls will play a board game similar to the Game of Life board game (49). They will be asked to make decisions that will affect their future.

Week 3

Activity: Microfinance activity 1

Description: Local microfinance organization will come teach the girls about microfinance.

Week 4

Activity: Sexual and reproductive health (50)

Description: Girls will be taught about sexual and reproductive health.

Week 5

Activity: Grassroot Soccer HIV session 1 (51)

Description: Grassroot Soccer will conduct a session on HIV transmission.

Week 6

Activity: Healthy relationships (50)

Description: Girls will put on skits depicting healthy and unhealthy relationships. They will then discuss what they believe constitutes a healthy or unhealthy relationship.

Week 7

Activity: Gender norms card game.

Description: Girls will be given cards with various jobs and roles written on them. Signs will be posted on either side of the room with the words “male/men” and “female/women” written on them. Girls will stand under the sign that they think aligns with the card they were given. A discussion about gender norms and roles will be held after that.

Week 8

Activity: Microfinance activity 2

Description: Local microfinance organization will return to help girls begin to design their own microfinance/income generating activities.

Week 9

Activity: Self-confidence and body image (52)

Description: Girls will discuss societal and cultural norms about beauty and body image, talk about their favorite parts of their body, and discuss ways to make themselves and others have better self-confidence.

Week 10

Activity: Grassroot Soccer HIV session 2 (51)

Description: Grassroot Soccer will conduct a second session on HIV transmission.

Week 11

Activity: Microfinance activity 3

Description: Girls will finalize their plans for implementing their microfinance projects (these can be done individually or in groups).

Week 12

Activity: Graduation

Description: Girls will participate in a graduation ceremony recognizing their participation in the program.

The Boys' Curriculum

Week 1

Activity: Ice breaker

Description: Participants will introduce themselves by throwing a ball around a circle. When a boy catches the ball, he will say “My name is ____, I have the ball, I put it here (placing the ball on a body part such as head or knee), I pe pe ta!” (begin “dancing” by moving body part with ball in a circle). Others in the circle repeat after him and imitate the motion he is doing with the ball.

Activity: Introduction to program and establishment of ground rules.

Week 2

Activity: Grassroot Soccer HIV session 1 (51).

Description: Grassroot Soccer will conduct a session on HIV transmission.

Week 3

Activity: What is GBV? card game

Description: Boys will be given cards with various behaviors written on them. Signs will be posted on either side of the room with “abusive” or “not abusive” written on them. Boys will stand under the sign that they believe aligns with what is written on their card. A discussion about healthy relationship traits will be held.

Week 4

Activity: Anger Management techniques session 1 (53)

Description: Boys will discuss what makes them angry and what are healthy ways of handling that anger.

Week 5

Activity: Grassroot Soccer HIV session 2 (51)

Description: Grassroot Soccer will conduct a second session on HIV transmission

Week 6

Activity: Gender norms card game (50)

Description: Boys will be given cards with various jobs and roles written on them. Signs will be posted on either side of the room with the words “male/men” and “female/women” written on them. Boys will stand under the sign that they think aligns with the card they were given. A discussion about gender norms and roles will be held after that.

Week 7

Activity: Healthy relationships

Description: Boys will put on skits depicting healthy and unhealthy relationships. They will then discuss what they believe constitutes a healthy or unhealthy relationship.

Week 8

Activity: Grassroot Soccer HIV session 3 (51)

Description: Grassroot Soccer will conduct a second session on HIV transmission.

Week 9

Activity: Leadership skills in GBV prevention

Description: Boys will participate in skits depicting various scenarios of boys talking about girls with each other. During a discussion they will identify tactics for talking about GBV with their peers.

Week 10

Activity: Anger management techniques session 2 (51)

Description: Boys will be taught concrete techniques (such as breathing techniques, meditation, or yoga) for anger management.

Week 11

Activity: Grassroot Soccer session 4 (49)

Description: Grassroot Soccer will conduct a second session on HIV transmission.

Week 12

Activity: Graduation

Description: Boys will participate in a graduation ceremony recognizing their participation in the program.

Evaluation

Evaluation of the program will be conducted six months after the completion of the program, twelve months after the completion of the program, and three years after the completion of the program (Table 3). At the beginning of the program, all participants (100 boys and 100 girls) will complete a survey consisting of questions from the Gender Equitable Men (GEM) Scale (for the boys) and the Partner Dependence Scale and the Abuse Behavior Inventory (ABI), which measures abuse experienced (for the girls) (54, 55). Both the boys' and girls' surveys will also contain questions about the transmission of HIV/AIDS and their HIV status, as well as questions from the Sexual Relationship Power Scale, the Gender Beliefs Scale, and the Gender Relations Scale (54). Participants will complete the same survey at six months, twelve months, and three years after the completion of the program.

6.0 CONCLUSION

HIV/AIDS has long been recognized as an issue with public health significance. Since the 1980s when HIV was first discovered, it has impacted people the world over. Originally, it was thought that HIV/AIDS could be contracted only by MSM; however, as the disease spread and research became more extensive, it became clear that heterosexual men and women could also contract the virus (8). It also began to disproportionately affect people living in developing countries, particularly sub-Saharan Africa (1). By 2007, 95% of HIV infections were in developing countries, with approximately 66% being in sub-Saharan Africa alone (1). The combination of this virus with poor access to healthcare and cultural beliefs that may perpetrate its transmission has created the perfect storm that has resulted in the HIV epidemic that sub-Saharan Africa is suffering from in 2017.

Gender based violence has only recently (late 20th century) been recognized as a public health issue in need of attention. Women and girls across the world suffer violence both at the hands of partners as well as others because of their gender. Not only does GBV have immediate effects on a woman's health, it can also have long-lasting negative impacts for her, which may result in negative impacts for her family and community (56).

Research has indicated that there is a relationship between high rates of HIV in a population and high rates of GBV (57). Programs have therefore been implemented throughout sub-Saharan Africa to simultaneously address both of these issues. They have demonstrated success both in increasing knowledge among men and young boys about the negative impacts of GBV and how to treat women as well as increasing knowledge in women and young girls about traits of unhealthy

relationships and the importance of having good self-confidence, self-efficacy, and financial literacy.

Zambia suffers from high rates of both HIV and GBV. Zambian women experience higher rates of HIV than their male counterparts (6). Rates of HIV among young Zambian women more than double from 4.8% to 11.2% between the ages of 19-24 (6). Forty-two percent of Zambian women have experienced GBV by the age of 24 (6).

There is a demonstrated need for comprehensive programming addressing HIV and GBV on a global level and specifically within Zambia. Adolescent girls are at particularly high risk of exposure to both of these issues and are in need of programming specifically designed for them. Programs have been successfully implemented in other countries addressing either HIV or GBV or both topics. The most successful programs have focused on reducing HIV and/or GBV through targeting adolescent boys, improving girls' self-esteem, or teaching girls about microfinance. A similar approach should be taken in Zambia. The Zambia NOW2 Intervention and the Adolescent Girls Empowerment Program have both been successfully implemented in Zambia and address issues and populations similar to, but not specifically HIV and GBV in adolescent girls. The Our Health, Our Responsibility intervention takes the necessary comprehensive approach to combating HIV and GBV through programming for both boys and girls.

There are limitations to this paper. Only papers written in English or translated into English were reviewed. Primary research was not conducted so no new data were added to the available data on HIV, GBV, or HIV and GBV. Some of the articles about the programs that were reviewed were written by the same people who designed and implemented the programs, which could introduce bias. Not every program that addresses HIV/AIDS, GBV or a combination of the two was reviewed.

Zambia is suffering greatly from both high rates of HIV/AIDS as well as high rates of GBV. These two health issues have devastating effects not only on the individuals suffering from them, but on their families, communities, and the Zambian population. Zambia wants to continue to develop and improve as a country, but these two issues will continue to hold it back from this goal unless addressed. Women are the heart of the Zambian family and without them, all Zambians would suffer. Zambian girls deserve the right to live long, healthy lives unencumbered by the burdens of HIV and GBV. Without comprehensive programming directed at both young women as well as young men, many will never be able to achieve that goal. Evidence and programs exist proving that it is possible to influence young men's ideas about how to treat women and young women's self-confidence, self-efficacy, and abilities to lead financially independent lives. If this type of programming is implemented in Zambia, the entire population can benefit.

APPENDIX: PUBMED SEARCHES

1. "Spouse Abuse" OR "Battered Women" OR "Domestic Violence" OR "Intimate Partner Violence" AND Poverty/prevention
2. ((rape/prevention AND control) AND ("Spouse Abuse" OR "Battered Women" OR "Domestic Violence" OR "Intimate Partner Violence"))
3. ("Spouse Abuse" OR "Battered Women" OR "Domestic Violence" OR "Intimate Partner Violence") AND Women's Rights
4. "gender based violence" OR "Spouse Abuse" OR "Battered Women" OR "Domestic Violence" OR "Intimate Partner Violence"
5. Poverty/prevention & control AND developing countries AND Spouse Abuse/economics
6. Zambia
7. Poverty
8. Human Immunodeficiency Virus OR Immunodeficiency Virus OR Human Immunodeficiency Viruses OR Human Virus OR Human Immunodeficiency Viruses OR Human Immunodeficiency OR "HIV"

BIBLIOGRAPHY

1. The World Health Organization, WHO | HIV / AIDS, (available at <http://www.who.int/immunization/topics/hiv/en/index1.html>).
2. J. O. Parkhurst, Understanding the correlations between wealth, poverty and human immunodeficiency virus infection in African countries. *Bull World Health Organ.* **88**, 519–526 (2010).
3. UNAIDS, “HIV prevention among adolescent girls and young women” (2016).
4. R. Borwankar, R. Diallo, A. E. Sommerfelt, “Gender-based Violence in Sub-Saharan Africa: A Review of Demographic and Health Survey Findings and Their Use in National Planning” (2008), (available at http://pdf.usaid.gov/pdf_docs/Pnadn126.pdf).
5. UNAIDS, “HIV/AIDS and Gender-Based Violence.”
6. Central Statistical Office, Ministry of Health, ICF International, Demographic and Health Survey 2013-2014 (2015) (available at <https://www.dhsprogram.com/pubs/pdf/FR304/FR304.pdf>).
7. M. H. Merson, J. O’Malley, D. Serwadda, C. Apisuk, The history and challenge of HIV prevention. *The Lancet.* **372**, 475–488 (2008).
8. S. M. Bertozzi, T. E. Martz, P. Piot, The evolving HIV/AIDS response and the urgent tasks ahead. *Health Aff (Millwood).* **28**, 1578–1590 (2009).
9. C. C. Chang *et al.*, HIV and co-infections. *Immunol Rev.* **254**, 114–142 (2013).
10. World Health Organization WHO | Violence against women (2016), (available at <http://www.who.int/mediacentre/factsheets/fs239/en/>).
11. IRIN, IRIN | Definitions of sexual and gender-based violence (2004), (available at <http://www.irinnews.org/feature/2004/09/01/definitions-sexual-and-gender-based-violence>).
12. V. Fox, Historical Perspectives on Violence Against Women. *Journal of International Women’s Studies.* **4**, 15–34 (2002).

13. United Nations General Assembly, A/RES/48/104. Declaration on the Elimination of Violence against Women (1993), (available at <http://www.un.org/documents/ga/res/48/a48r104.htm>).
14. N. Andersson, A. Cockcroft, B. Shea, Gender-based violence and HIV: relevance for HIV prevention in hyperendemic countries of southern Africa. *AIDS*. **22 Suppl 4**, S73–86 (2008).
15. S. Maman, J. Campbell, M. D. Sweat, A. C. Gielen, The intersections of HIV and violence: directions for future research and interventions. *Soc Sci Med*. **50**, 459–478 (2000).
16. amfAR, The Foundation for AIDS Research, Statistics: Women and HIV/AIDS : HIV / AIDS Research, (available at <http://www.amfar.org/about-hiv-and-aids/facts-and-stats/statistics--women-and-hiv-aids/>).
17. AVERT: AVERTing HIV and AIDS, Women and Girls, HIV and AIDS. *AVERT* (2017), (available at <https://www.avert.org/professionals/hiv-social-issues/key-affected-populations/women>).
18. G. Ramjee, B. Daniels, Women and HIV in Sub-Saharan Africa. *AIDS Res Ther*. **10**, 30 (2013).
19. Merriam-Webster, Sugar Daddy | Definition of Sugar Daddy by Merriam-Webster, (available at <https://www.merriam-webster.com/dictionary/sugar%20daddy>).
20. The Central Intelligence Agency, The World Factbook: Africa::Zambia (2016), (available at <https://www.cia.gov/library/publications/the-world-factbook/geos/za.html>).
21. BBC News, Zambia profile - Timeline - BBC News (2017), (available at <http://www.bbc.com/news/world-africa-14113084>).
22. The World Bank, World Bank Country and Lending Groups – World Bank Data Help Desk (2017), (available at <https://datahelpdesk.worldbank.org/knowledgebase/articles/906519>).
23. The World Bank, New country classifications by income level | The Data Blog (2016), (available at <https://blogs.worldbank.org/opendata/new-country-classifications-2016>).
24. National HIV/AIDS/STI/TB Council, Historical Background | National HIV/AIDS/STI/TB Council | Zambia, (available at <http://www.nac.org.zm/historical-background>).
25. Data | The World Bank, (available at <http://data.worldbank.org/>).
26. A. Mills, Health Care Systems in Low- and Middle-Income Countries. *N Engl J Med* (2014) (available at <http://www.nejm.org/doi/pdf/10.1056/NEJMra1110897>).

27. M. Giuliano, S. Vella, Inequalities in health: access to treatment for HIV/AIDS. *Ann Ist Super Sanita.* **43**, 313–316 (2007).
28. Institute for Health Metrics and Evaluation (IHME), “Country Profiles” (IHME, University of Washington, Seattle, WA, 2016), (available at <http://www.healthdata.org/results/country-profiles>).
29. Institute of Health Metrics and Evaluation, GBD Profile: Zambia (available at http://www.healthdata.org/sites/default/files/files/country_profiles/GBD/ihme_gbd_country_report_zambia.pdf).
30. United Nations International Labour Office, “HIV/AIDS: A threat to decent work, productivity, and development” (Geneva, Switzerland, 2000), (available at http://data.unaids.org/pub/report/2000/20000524_threat_decent_work_en.pdf).
31. United Nations Department of Economic and Social Affairs/Population Division, in *The Impact of AIDS*, pp. 61–67.
32. Government of Zambia, The Anti-Gender-Based Violence Act, 2011 (2011), (available at <http://www.zambialii.org/zm/legislation/act/1-12>).
33. C. R. Ndhlovu D, “Zambia Anti-GBV Act 2011” (2011).
34. Republic of Zambia Gender in Development Division Cabinet Office, National Action Plan on Gender-Based Violence (NAP-GBV) 2008-2013 (2008) (available at <http://evaw-global-database.unwomen.org/en/countries/africa/zambia/2008/national-action-plan-on-gender-based-violence>).
35. H. A. McGrane Minton, M. Mittal, H. Elder, M. P. Carey, Relationship Factors and Condom Use Among Women with a History of Intimate Partner Violence. *AIDS Behav.* **20**, 225–234 (2016).
36. N. J. Shai, R. Jewkes, M. Nduna, K. Dunkle, Masculinities and condom use patterns among young rural South Africa men: a cross-sectional baseline survey. *BMC Public Health.* **12**, 462 (2012).
37. D. Jones *et al.*, Risk reduction among HIV-seroconcordant and -discordant couples: the Zambia NOW2 intervention. *AIDS Patient Care STDS.* **28**, 433–441 (2014).
38. D. J. Jones *et al.*, Sexual risk reduction among Zambian couples. *SAHARA J.* **6**, 69–75 (2009).
39. J. Pulerwitz *et al.*, Changing Gender Norms and Reducing Intimate Partner Violence: Results From a Quasi-Experimental Intervention Study With Young Men in Ethiopia. *Am J Public Health.* **105**, 132–137 (2015).

40. N. Glass, N. A. Perrin, A. Kohli, J. Campbell, M. M. Remy, Randomised controlled trial of a livestock productive asset transfer programme to improve economic and health outcomes and reduce intimate partner violence in a postconflict setting. *BMJ Global Health*. **2**, e000165 (2017).
41. R. Jewkes *et al.*, Impact of stepping stones on incidence of HIV and HSV-2 and sexual behaviour in rural South Africa: cluster randomised controlled trial. *BMJ*. **337**, a506 (2008).
42. R. Jewkes *et al.*, “Evaluation of Stepping Stones:” (2007), (available at <http://www.mrc.ac.za/policybriefs/steppingstones.pdf>).
43. S. Maman *et al.*, Leveraging strong social ties among young men in Dar es Salaam: A pilot intervention of microfinance and peer leadership for HIV and gender-based violence prevention. *Glob Public Health*. **11**, 1202–1215 (2016).
44. Global Violence Prevention, The Intervention with Microfinance for AIDS and Gender Equity (IMAGE) Study (available at http://www.who.int/violenceprevention/about/participants/Intimite_partner_violence.pdf).
45. P. Hewett *et al.*, “Adolescent Girls Empowerment Programme: Research and Evaluation Baseline Technical Report” (Population Council, Lusaka, Zambia, 2014).
46. P. C. Hewett *et al.*, Cluster Randomized Evaluation of Adolescent Girls Empowerment Programme (AGEP): Study Protocol. *BMC Public Health*. **17**, 386 (2017).
47. The World Bank, Rural population (% of total population) | Data (2017), (available at <http://data.worldbank.org/indicator/SP.RUR.TOTL.ZS>).
48. J. Pulerwitz, Julie Pulerwitz Expert Interview (2017).
49. The Game of Life | Board Game | BoardGameGeek, (available at <https://boardgamegeek.com/boardgame/2921/game-life>).
50. Peace Corps Office of Overseas Programming and Training Support, *Life Skills Manual* (Washington, D.C.), vol. M0063 of *Peace Corps Information Collection and Exchange*.
51. Home - Grassroot Soccer - Grassroot Soccer, (available at <https://www.grassrootsoccer.org/>).
52. Dove Self Esteem Project, Teaching Resources | Dove Confident Me: Five Session Programme, (available at <http://selfesteem.dove.us/Articles/Written/Dove-Confident-Me-five-session-resources.aspx>).

53. Teen Anger Management Education: TAME, (available at <http://www.ncaddesgpv.org/services-provided/13-adolescent-programs/8-teen-anger-management-education-tame>).
54. N. Geeta, Compendium of Gender Scales (2011) (available at <https://www.c-changeprogram.org/content/gender-scales-compedium/household.html>).
55. M. F. Shepard, J. A. Campbell, The abusive behavior inventory. *J Interpers Violence*. **7**, 291–305 (1992).
56. L. Heise, M. Ellsberg, M. Gottmoeller, A global overview of gender-based violence. *International Journal of Gynecology & Obstetrics*. **78**, S5–S14 (2002).
57. World Health Organization WHO /London School of Hygiene and Tropical Medicine, Preventing Intimate Partner and Sexual Violence Against Women: Taking Action and Generating Evidence (2010) (available at http://www.who.int/violence_injury_prevention/publications/violence/9789241564007_eng.pdf).