

University of Witwatersrand School of Public Health

The role of a mass media campaign in uptake of HIV counselling and testing
among young people in five Southern Africa countries

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Declaration

I, Leonard Kamugisha declare that this research report is my original work. It is submitted in partial fulfilment of the requirements for the degree of Master of Public Health, in the field of Social and Behaviour Change Communication, at the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination to this or any other university.

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Abstract

Introduction

Southern Africa forms the epicentre of the HIV epidemic and young people commonly get diagnosed long after infection. Despite the evidence that HIV Counselling and Testing (HCT) can reduce risky sexual behaviors and prevent HIV, uptake of testing in young people remains limited and this is especially true in Southern Africa. In the last few years, effective interventions for HIV prevention have been implemented, including treatment as prevention and pre-exposure prophylaxis. In the context of very high prevalence of HIV among young people in Southern Africa, it is critical that countries attain higher levels of HCT. Demand creation is one of the means to increase uptake of HCT. This study investigated the relationship between exposure to a mass media campaign and uptake of HIV counselling and testing among young people in five countries of Southern Africa (Lesotho, Mozambique, South Africa, Swaziland and Zambia) for the period 2008 to 2012. A secondary data analysis from a multi-country study was undertaken.

Methods: Secondary data on young people aged 15-24 years from a post-only cross-sectional observational multi-country study that was undertaken in 2012 to evaluate the *One Love* Campaign, a regional behavior change media campaign coordinated by Soul City Institute for Development Communication was undertaken. The exposure variable was exposure to *One Love* campaign (in the form of television film series; locally produced radio drama series, television public service announcements and a television series in South Africa. In other participating countries the programme also comprised talk shows broadcast by national- and community broadcasters; booklets, billboards used to trigger discussion during community dialogues and community outreach events) with the outcome of interest being HIV testing, with a number of covariates such as socio-demographic characteristics (e.g. age, education level, nationality, sex, marital status, socio-economic status (defined as wealth quintile), whether respondent had children or not, and country of residence).

Bivariate and multivariate analysis was conducted to establish the relationship between exposure to *One Love* campaign and HIV testing among the study population.

Results: A total of eight-thousand-six-hundred and thirteen young people (n=8613) participated in the study. There was nearly equal distribution of respondents between those that had had an HIV test (52.0%) and those that had not (48.0%). Exposure to *One Love* through multiple media, was positively associated with HIV testing (aOR=2.34, 95% CI 1.94-2.81), and there was a dose response.

Other factors associated with having an HIV test included being female (aOR= 1.95, 95% CI 1.75 - 2.18); having living child (aOR=4.23, 95% CI 3.57-5.01); being the aged 18-20 years (aOR=2.24, 95% CI 1.95 - 2.58) or group 20-24 years (aOR=4.14, 95% CI 3.57 - 4.81) and having secondary or tertiary education (aOR= 2.67, 95% CI 1.92 - 3.68).

Increased wealth until quintile 4 was negatively associated with having an HIV test, (aOR= 0.93, 95% CI 0.77 - 1.12).

Conclusion: Overall the findings of this study show that exposure to more than one medium in the campaign has greater odds of testing. The results of this study provide important information on the relationship between exposure to a media campaign and HIV testing among young people. Social and behaviour change communication strategies that use multi-media are necessary to achieve improved HIV testing among young people.

List of acronyms and abbreviations

ART	Anti-Retro Viral Therapy
HCT	HIV Counselling and Testing
HIV	Human Immunodeficiency Virus
MCP	Multiple Concurrent Partners
PMTCT	Prevention of Mother to Child Transmission of HIV
SADC	Southern African Development Community
UNICEF	United Nations Children Fund
WHO	World Health Organization

Operational definitions

Adolescents: Individuals between ages 10 and 19 (UNFPA, 2013)

Young People: This refers to individuals between ages 15 and 24 (UNFPA, 2013).

HCT: the service rendered to an individual for him/her to know his HIV status, which could be either positive or negative, it includes the different types of voluntary and provider initiated HIV counselling and testing

Chapter One: Introduction

The spread of HIV among young people is a global public health concern. The infection rates, among the young people in sub-Saharan Africa, remains a serious challenge (UNAIDS, 2011). Sub-Saharan Africa has just over 10% of the world's population, and remains the most seriously HIV-affected region (UNAIDS, 2011). young people aged 15 to 24 are most infected with HIV (UNICEF, 2012) and account for 60% of all new infections in many countries (UNICEF, 2012). Of the 250,000 adolescents who were newly infected with HIV in 2015, two out of three resided in Sub-Saharan Africa (UNICEF, 2016), and there are fears that with the growing population, coupled with inadequate access or uptake of HIV services the HIV burden will inevitably increase (Wong et al., 2017). While an estimated one-third of all new global infections among young people occur in Sub-Saharan Africa (UNICEF, 2016), the low rates of HIV testing among young people ages 15-24, and only one in five girls knowing their HIV status, presents a challenge to the control of the epidemic (Wong et al., 2017).

Early sexual initiation has been associated with an increased risk of acquiring HIV (Rositch et al., 2012, McGrath et al., 2009, Mmbaga et al., 2012, Harrison et al., 2005). Although most young people who acquire HIV are infected through sex, a limited but increasing number are living with HIV, either acquired perinatally or in infancy through blood products (Ferrand et al., 2011).

Globally, an estimated two million adolescents (aged 10–19 years) are living with HIV; and most of them are unaware of their HIV status (WHO, 2011). Age-specific prevalence data show that by age 15 years, there is a clear disparity in HIV prevalence between males and females, indicating how sexual transmission affects adolescents. For example, as of 2008 in Botswana, the HIV prevalence among adolescents 15–19 years old was 2.4% and 5% among females in the same age group (StatOffice, 2009). Similarly, in South Africa, adolescent males aged 15–19 years had an HIV prevalence of 2.5% in 2008 versus 6.7% among females (Shisana et al., 2009.), with a similar pattern seen more recently in 2014 (Shisana et al., 2014). This underscores the need to increase HIV Counselling and Testing (HCT) uptake among young people (Makusha et al., 2015).

In many countries, there is limited age and sex disaggregated data on the uptake of HIV testing and counselling among young people, which means that there are no regional estimates for the Southern African Development Community (SADC). However, data from a study done by UNICEF in sub-Saharan Africa showed that only 15% of young women aged 15–24 years and 10% of young men have been tested and know their HIV status (UNICEF, 2011). As a result, many young people and young adults are diagnosed late and do not access treatment until they are severely immune-compromised (UNICEF, 2011).

The situation in Southern Africa which forms the epicentre of the HIV epidemic highlights the phenomenon of young people being diagnosed long after infection. For example, a study in Zimbabwe found that 50% of young people admitted for acute care in primary health facilities were living with HIV, and HIV accounted for about 75% of the hospitalized young people that died (Ferrand et al., 2010a, Ferrand et al., 2010b).

Mass media campaigns have played a visible role in the prevention efforts to address the HIV epidemic in both developed and developing countries since its early days of HIV prevention efforts in the 1980s (Liskin, 1990, Myhre and Flora, 2000). A number of countries have used either media campaigns utilising print, radio, television, and short films or a combination of these (Myhre and Flora, 2000), leading to increased awareness about HIV. Some campaigns have catalysed demand creation for services, and led to behaviour change, such as increased condom use and abstaining from sexual relations (Bertrand et al., 2006, Jung et al., 2013). However, studies on the impact of mass media on HIV-related behaviours have been inconclusive, and have shown mixed results (Bertrand et al., 2006).

A regional behaviour change media campaign coordinated by Soul City Institute for Health and Development Communication conceptualized in 2007 (Silvestre et al., 2016), was implemented between 2008 and 2012, using standardized methodology in Lesotho, Namibia, Mozambique, Swaziland and Zambia (Hutchinson et al., 2012). The campaign named *One Love* aimed at reducing new HIV infections in Southern Africa by 2011 thus contributing to the goals set by National AIDS Councils in all participating countries. It was delivered using television film series; locally produced radio drama series, television public service announcements and a Television series in South Africa. In other participating countries the programme also comprised talk shows broadcast by national- and community

broadcasters; booklets, billboards used to trigger discussion during community dialogues and community outreach events (Hutchinson et al., 2012). It was targeted at men and women aged 15 to 55 years with a focus on youth and migrant populations, and focused on one of the key drivers of the HIV pandemic in Southern Africa: multiple concurrent partnerships (MCP), as well as social and cultural norms that fuel MCP – notably: gender inequality and harmful notions of masculinity. It intended to change sexual behaviour with the primary outcome being reduction in the number of sexual partners (Silvestre et al., 2016). In addition it was intended to promote behaviour change that could decrease the risk and likelihood of HIV transmission (Hutchinson et al., 2012).

The aim of the campaign was intended to be achieved through the following underlying campaign message objectives: to stimulate dialogue and debate; promote self and collective efficacy; promote gender sensitivity and empowerment of women; and create a supportive environment. The campaign reached a national audience in each participating country (Hutchinson et al., 2012).

The analysis presented in this report aimed to investigate whether exposure to the *One Love* campaign was associated with HIV testing among young people in five countries in Southern Africa.

1.1 Literature review

1.1.1 HIV counselling and testing

Since the mid 1990's HIV Counselling and Testing (HCT) has been part of a global drive towards improving access to comprehensive essential quality care for HIV positive people (Coovadia, 2000). The benefits of HCT are well documented globally. HCT is a critical component of the prevention of new HIV infections and treatment access to antiretroviral therapy (ART) (WHO, 2011, Fonner et al., 2012, Marum et al., 2016, WHO, 2013, Coates et al., 2014a, Rosenberg et al., 2013a). Clinical management such as effective treatment of opportunistic infections, prevention of mother-to-child transmission, antiretroviral therapy (ART) and a range of prevention behaviours, depend on awareness of HIV status (Babalola, 2007b, Beres et al., 2013). In addition, recent evidence indicates early treatment may

support HIV prevention efforts, demonstrating the need for timely knowledge of HIV status as part of a wider prevention and treatment response (Cherutich et al., 2012).

HCT has been found to positively influence unprotected sexual behaviour. A meta-analysis of studies showed that recipients of HCT were significantly less likely to engage in unprotected sex when compared to behaviors before receiving HCT, or as compared to participants who had not received HCT (Denison et al., 2008). However, the analysis showed that HCT had no significant effect on the number of sex partners. This second finding is similar to that from a Ugandan cohort study that found that HIV counselling and testing had no impact on risky sexual behavior and HIV incidence (Matovu et al., 2005). More recent studies have indicated the link between HCT and reduction of HIV incidence (Coates et al., 2014b, Rosenberg et al., 2013b)

Most of the current HIV testing services have largely been aimed at infants, young children and adults (especially women) and tend to exclude young people (Shroufi et al., 2013). In Southern Africa countries, HIV testing among young people remains either low compared to the rest of population or undocumented as most data is not disaggregated by age group. However, general HIV testing data shows variations across countries. In Lesotho nearly six in ten sexually active women (58%) and four in ten (36%) sexually active adult men have tested for HIV and received their results in the last year, compared to 40% of female and 25% male Young People 15-19 years (Ministry of Health and International., 2016). In Mozambique access to testing remains limited, with 18% of female and 8% of male sexually active young people aged 15-19 having had an HIV test and received results (Agha, 2012).

Data from Namibia in 2013 shows that among the sexually active group 29% of female and 14% of male young people aged 15-19 had undertaken an HIV test in the 12 months preceding the national demographic health survey, compared to 49% and 38% of females and males aged 15-49 respectively (MoHSS, 2014). In Swaziland, 2011 population data from a national HIV incidence survey showed that 71% of overall adult population reported previous HIV testing and more than one in three HIV-infected adults are not aware of their status (Justman et al., 2017, Parker et al., 2015). However, a more recent survey indicated that 67% of women and 55% of men aged 15-49 years had had an HIV test and received results in the 12 months preceding the survey (Parker et al., 2015). This is higher than the

testing rates among sexually active young people aged 15-19, 41% among females and 30% among males (Central Statistical Office and UNICEF., 2016).

In Zambia Voluntary HIV counselling and testing has been integrated in health facilities providing Prevention of Mother to Child Transmission (PMTCT) of HIV and Anti-Retro Viral Therapy (ART)(NAC, 2011). Data from the Zambia national Demographic and Health Survey, 2014 indicates that 33% of adolescent females and 19% of adolescent males aged 15-19 had been tested in the 12 months preceding the survey and received results compared to 46% of women and 37 % of men aged 15-49 (Central Statistical Office et al., 2014).

1.1.2 Determinants of HIV Counselling and Testing

In sub-Saharan Africa, a number of factors have been identified as motivators of HIV counselling and testing among young people; these include: parental support, self-perception of risk, having accurate information about HIV, knowing a source of HCT, having discussed condom use for HIV prevention, positive peer pressure, wanting to know one's status, social pressure from service providers, familiarity with the service provider, convenience (short distance to the testing site) and credibility of the testing technology among others (Beres et al., 2013, Babalola et al., 2005, Meiberg et al., 2008, Angotti et al., 2009).

Socio-demographic characteristics

A number of studies have shown utilization of HCT services is positively associated with increasing age, higher education, urban residence, and socioeconomic status (Hutchinson and Mahlalela, 2006, Parker et al., 2015).

Sexual behavior and HCT

Studies in developed countries have identified an association between HCT uptake and high risk sexual behaviors within the sexually active population and sub-populations at higher risk of contracting HIV, such as drug users and pregnant women (McGarrigle et al., 2005), and having symptoms and feeling ill (Samet et al., 1997). One study conducted in the United States of America found no association between HCT and inconsistent condom use and a history of having a sexually transmitted infection (Murphy et al., 2002) and contradicted earlier studies in the United States of America that found HIV testing to be associated with

inconsistent condom use and a history of sexually transmitted infection(s) (Miller et al., 1996, Goodman and Berecochea, 1994). Other studies have stressed the importance of medical symptoms and encouragement by health care providers in promoting HIV testing (Samet et al., 1997, Wortley et al., 1995).

Health and HCT service characteristics

The quality of the HCT service has for a long time been identified as a key determinant of service uptake. The quality of the counseling interaction between the counselor and clients, particularly absence of confidentiality and privacy has led to decreased acceptability of HCT and reduced likelihood that clients will return for results (Ntsepe et al., 2014, Coovadia, 2000).

In a number of countries, such as Zimbabwe, even when young people seek health services there are concerns related to HIV health service providers' inability to use such opportunities to offer testing and engage them. This results in reported low testing coverage among young people many of whom are infected at birth or later through sexual contact (Ferrand et al., 2010b).

Lack of trust of health care workers and the desire to have confidential service experience has been identified as key barriers to HIV testing in a number of countries including Zimbabwe (Ferrand et al., 2011), Uganda (Hampana et al., 2014) and Malawi (Michaels-Igbokwe et al., 2015). Yet, a recent study in Kenya showed that positive interaction between health care worker and HIV-negative adolescents greatly influenced motivation to promote testing among peers and return for repeat testing (Wilson et al., 2017).

Other relevant service characteristics include the physical proximity to clinics, and availability of rapid testing and outreach services (Burnett et al., 2011, Hutchinson and Mahlalela, 2006). These appear to be more significant for men than women (Hutchinson and Mahlalela, 2006).

Among South Africa adolescents, a 2014 study indicated that if a particular health service was organized in form of blood donation campaigns, these were seen as a major driver for voluntary HIV testing particularly among the white and Indian races (Ntsepe et al., 2014).

HIV knowledge

Evidence from research in developing countries suggests that greater HIV knowledge is associated with greater likelihood of HIV testing in young people , although some studies have either not replicated this correlation or found that more knowledge may increase HIV risk taking (Okumu et al., 2017, Swenson et al., 2009, Swenson et al., 2010, Kalichman and Simbayi, 2003).

Individual perception of risk and testing benefits

In an era of increasing access to antiretroviral treatment there is increasing recognition among young people (like in adults) that knowing one's HIV status can benefit them because they can start treatment if they are infected with HIV. However, the perception of not being at risk of HIV has also been identified as a significant barrier to testing (Ntsepe et al., 2014, Ferrand et al., 2011) . A more recent study offering HIV counselling and testing to adolescents in Zambia also found low perception of risk as a key reason for declining the service(Shanaube et al., 2017a).

Stigma and attitudes towards testing

Some studies have demonstrated a relationship between stigma, individual attitude towards people living with HIV and HIV testing. Evidence from three South African studies demonstrated that HIV-related stigma from community and family is a barrier to HIV testing uptake in resource limited settings particularly with reduced access to health care services(Kalichman and Simbayi, 2003, Ntsepe et al., 2014, Strauss et al., 2015). These studies showed that in comparison to people who had been tested, those who had not, demonstrated significantly greater AIDS- related stigma; ascribing greater HIV testing self-efficacy (indication of how confident an individual is that he/she could take an HIV test) was significantly associated with HIV testing among school going adolescents, indicating that a positive attitude is a determinant factor of HIV testing (Burnett et al., 2011). In a couple of other South African studies, fearing the social consequences of being HIV infected,

negative attitudes of health care workers, perception of being HIV positive, believing that asymptomatic people do not need to take an HIV test, were associated with not having an HIV test (MacPhail et al., 2008, Johnston et al., 2010).

Other studies have identified fear of stigma, knowing someone with AIDS (Kalichman and Simbayi, 2003, Hutchinson and Mahlalela, 2006, Meiberg et al., 2008) as barriers to testing. In addition, a number of countries, have policy barriers, such as the ability to provide legal consent for HIV services which hinder access and coverage among adolescents without parental or guardian consent prior to testing (Fox et al., 2013). The legal age of consent for HIV counselling and testing in Lesotho, South Africa and Swaziland is 12 years, while it is 14 years in Namibia, 11 years in Mozambique and 16 in Zambia.

Other factors influencing adolescents and young people access and uptake of HIV testing services include the perceived cost of accessing services, given that they rarely have financial independence (Ferrand et al., 2011, Armstrong et al., 2013), having supportive and role model care givers (Wilson et al., 2017).

1.1.3 Mass media campaigns and HIV prevention

The role of mass media campaign in shaping attitudes, beliefs and behavioral outcomes has long been documented (Kagurusi, 2013). Mass media campaigns can have both desired effects and unintended consequences; for example, a popular documentary intended to reduce teenage pregnancy in the United States of America was seen to have reduced perception of teen pregnancy risk in girls who watched the documentary, in addition to a greater perception that the benefits of teen pregnancy outweighed the risks (Aubrey et al., 2014).

Mass media campaigns have played a visible role in the HIV epidemic in both high and low income countries since its early days in the 1980s (Liskin, 1990, Myhre and Flora, 2000) with a number of countries using either media campaigns utilising print radio, television, and short films or a combination of these (Myhre and Flora, 2000), leading to increased awareness about HIV and behaviour change, such as abstaining from sexual relations and use of condoms (Bertrand et al., 2006, Jung et al., 2013). However, studies on the impact of mass media on HIV- related behaviours have been inconclusive, and have shown mixed results (Bertrand et al., 2006). A recent study among young women aged 15-24 in Ghana

showed an association between increased HIV knowledge and frequent exposure to mass media and reduced tendency to stigmatise or act as agents of stigma directed towards people living with HIV (Asamoah et al., 2017).

A study in the United States of America indicated a correlation between exposure to a mass media campaign promoting HIV testing among African American women with HIV testing information seeking, though it did not explore linkages to actual testing (Davis et al., 2011), while another study in the United Kingdom showed clear association between exposure to a mass media and HIV testing in men who have sex with men (MSM) (Flowers et al., 2013). The effect of the intervention seems to be related to the type of outcome evaluation design, with more rigorous designs yielding promising results (Noar et al., 2009).

Media campaigns have been seen to be cost-effective in relation to influencing behaviour change; for example, a study in Bangladesh comparing the costs of a media campaign and the change in the use of health services was seen to be both effective and cost effective (Hutchinson et al., 2006, Hutchinson and Wheeler, 2006). Although seen to be cost effective, mass media programmes could increase inequities in access to HIV counselling in testing if mass media channels are more accessible in urban areas. A study in Kenya showed that a mass media campaign had increased testing in urban areas (where access is already better than rural settings) (Marum et al., 2008).

1.2 Statement of the problem

Despite the evidence that HCT can reduce risky sexual behaviors (Fonner et al., 2012) and prevent HIV, uptake of testing among young people remains limited and more so in Southern Africa (MacPhail et al., 2009, MacPhail et al., 2008). In the last few years, effective interventions for HIV prevention have been discovered, including treatment as prevention (Cohen et al., 2013) and pre-exposure prophylaxis (Grant et al., 2010). In the context of very high prevalence of HIV among young people in Southern Africa (UNICEF, 2011), it is critical that countries attain higher levels of HCT. Demand creation is one of the means to increase uptake of HCT.

Although a lot is known from literature about the role of mass media campaigns in effecting behavior change at general population level, in the context of AIDS, very little (if any) is

known about the association between exposure to a media campaign and uptake of adolescent HIV counselling and testing. Most of the studies looking at HIV testing among young people have not studied the role of mass media in young people's behavior change more generally and HIV testing specifically.

1.3 Justification

There is limited data on the uptake of HIV counselling and testing among young people in Southern Africa. Most of the literature about adolescent HIV testing is on South Africa with studies focusing mainly on individual-level factors associated with testing or the desire for testing, and post testing behavior (MacPhail et al., 2008, MacPhail et al., 2009).

The use of mass media campaigns to increase testing in young people has not been studied, despite many campaigns that have been held over the last decade in order to reduce risky behavior at population level and increase HIV knowledge (Myhre and Flora, 2000, Oppong Asante, 2013).

While some studies have attempted to explain the barriers to, and promoters of HIV testing in young people (MacPhail et al., 2009, MacPhail et al., 2008), the association between an exposure to a mass media campaign and adolescent HIV testing in Southern Africa has not been documented. Therefore, this study is useful in shedding light on this important link. Results from this study could also inform future interventions such as implementing programmes to increase uptake of HIV counselling and testing among young people, as part of the bigger HIV prevention and treatment agenda.

Research Question: Is there an association between exposure to a mass media campaign and uptake of HIV counselling and testing in young people aged 15-24 in Southern Africa between 2008 and 2012?

1.4 Aim and specific objectives

The overall aim of the study was to investigate the relationship between exposure to a mass media campaign, *One Love*, and uptake of HIV counselling and testing among young people aged 15-24 in Southern Africa for the period 2008 to 2012.

Specifically, the study aimed:

1.4.1 To describe the sociodemographic characteristics of the young people from the five Southern African countries for the period 2008 to 2012.

1.4.2 To describe exposure to the mass media campaign by young people aged 15-24 years in five southern Africa countries for the period 2008 to 2012

1.4.3 Determine the prevalence of self- reported HIV testing among young people aged 15-24 in five southern Africa countries for the period 2008 to 2012

1.4.4 Determine the relationship between exposure to a mass media campaign and uptake of HIV counselling and testing in five Southern Africa countries for the period 2008 to 2012

1.4.4.1 A priori hypothesis for objective 1.4.4

Young people aged 15-24 who have been exposed to a mass media campaign are more likely to test for HIV than those not exposed.

Null hypothesis (Ho): There is no difference in uptake of HIV counselling and testing between young people exposed to a mass media campaign and those that are unexposed.

Chapter Two: Methodology

2.1 Study design

The primary study was a posttest-only cross-sectional observational multi-country study that was undertaken in 2012 to evaluate the *One Love* campaign, a regional behavior change media campaign coordinated by Soul City Institute for Development Communication, using standardized methodology in Lesotho, Namibia, Mozambique, Swaziland and Zambia (Hutchinson et al., 2012). The primary outcomes of interest for the evaluation were HIV-related risk behaviors, HIV knowledge and awareness, attitudes and social norms (Hutchinson et al., 2012). It is to be noted that uptake of HCT was not a primary outcome of the study.

The primary study aimed to understand what worked in the implementation of the *One Love* campaign, how and why, as well as how to improve subsequent interventions (Hutchinson et al., 2012). The evaluation had a strong learning-oriented foundation with a view towards contributing to the global evidence base and informing the global debate on HIV prevention – specifically the role of health communication as an HIV prevention strategy (Hutchinson et al., 2012). The primary study data is owned by Soul City Institute for Health and Development Communication.

2.2 Study sites

The primary study sites were conducted in five countries, these are: Lesotho, Mozambique, Namibia, Swaziland and Zambia.

Lesotho is a land locked with all its borders surrounded by South Africa. With a size of approximately 30,000 km² the country has a population slightly over two million (SADC, 2014). The country has 23 % of those aged 15 and above adult population living with HIV, making it a home that has the second highest human immunodeficiency virus (HIV) prevalence globally (UNAIDS, 2013). Due to the HIV epidemic, the country has faced a negative population growth rate over the last decade with life expectancy reduced from 60.2 years in 1996 to 42.9 years (Statistics, 1996). HIV also remains the leading cause of death among those above 15 years in the country (MoHSW, 2013).

By contrast, Mozambique is located in the Southeast Africa sharing borders with Tanzania to the North, Swaziland and South Africa to the Southwest, the Indian Ocean to the East, Malawi and Zambia to the Northwest, and Zimbabwe to the West. The Mozambique Channel separates the country from Madagascar, to the East (SADC, 2014) and has a population of approximately 26 million people. The country has an HIV prevalence of 10.8% among people aged 15-49 years (Llenas-García et al., 2016).

Namibia, located in Southern Africa is situated in the South-Western part of Africa and borders with the Atlantic Ocean on the western border. It has Angola and Zambia sharing its borders in the North, Botswana to the East and South Africa to the South and East. (SADC, 2014). The country has surface area of 824,116 square km and an estimated population of 2.1 million. Namibia has a generalized epidemic, with a prevalence of 13.3% and an estimated 16 new infections occurring each day among the general adult population. 31% of the new infections are amongst young people aged 15-24 (MoHSS, 2010). Over 50% of those above 15 years have not had an HIV test (Davyduke et al., 2015). The country has a national strategy for HIV Counselling and testing and accompanying guidelines that provide for intervention to increase access to testing (MoHSS, 2014).

Swaziland is in Southern Africa and surrounded – with the exception of Mozambique to its East – by South Africa (SADC, 2014). The country has a population of around 1.1 million people, and the highest HIV prevalence in the world, estimated at 26% and an HIV incidence of 2.4% for 15–49-year-olds(Justman et al., 2017). It is estimated that 40% of the general population is below 15 years of age, and 63% live below the poverty line (MOH, 2012). HIV prevalence is higher amongst females than males and the largest difference is amongst young females below 25 years compared to young males (26% versus 5%, respectively) (Bicego et al., 2013).

Zambia is located Southern Africa, has no direct access to the ocean/sea and shared borders with Tanzania in the North-East, the Democratic Republic of the Congo in the North, Mozambique, Zimbabwe, Botswana and Namibia in the South, Malawi in the East, and Angola in the West (SADC, 2014).

The country has an HIV prevalence of 14.3% which is amongst the highest in the world, with an estimated 226 new adult infections reported in 2009(NAC, 2011). Among young people 15-24 years, knowledge about HIV prevention is as low as below 50% (NAC, 2011).

2.3 Study population

The population for the primary study was all men and women aged 15 to 49 living in urban and rural areas in each of the countries of Lesotho, Mozambique, Namibia, Swaziland and Zambia (Hutchinson et al., 2012). The study population for the secondary data analysis is all young people aged 15 to 24 living in the five countries who participated in the primary study.

2.4 Sample

The primary study used a selection of nationally-representative samples using randomly selected population census enumeration areas through a stratified, three-stage cluster sampling strategy (Hutchinson et al., 2012). In each country, information was collected from a nationally representative, randomly selected sample of adults between the ages of 15 and 49 years. A stratified, random sample of enumeration areas (EAs) was drawn with the assistance of each country's national statistical office, using the most recently collected or updated census sampling frame. Border post areas and transportation corridors were identified as containing high risk populations and were targeted by programme interventions. Over-sampling of these areas was done to ensure sufficient samples of these populations.

Thus, each country was stratified into urban, rural and border post areas, and, where possible, further stratified into programme and non-programme areas. Households were randomly selected for interviewing within selected EAs, and subsequent respondents within households were randomly selected using Kish grids. The intent was to interview one adult (aged 15-49) male and female in each selected household (Hutchinson et al., 2012).

Between 3000 and 5000 men and women aged 15-49 residing in the selected communities, in each country were used in the study, with a total sample size of 42,269 achieved. The same sampling protocol was used in the five countries (Hutchinson et al., 2012).

For the secondary data analysis, all male and female young people aged 15-24 who participated in the primary study in the five countries were included. There was a total of 4380 males and 4232 females.

2.5 Data collection

The data for the primary study was collected using a standardized questionnaire with closed-ended questions and it was administered face-to-face by trained interviewers. The questionnaire used for data collection in all countries was the same, it was only translated into the most commonly used language in each country and interviews were conducted in that language (Hutchinson et al., 2012, Jana et al., 2014).

2.6 Measurement and data sources

The questionnaire comprised 205 closed ended questions. The items relevant to the analysis presented in this report include socio-demographic characteristics; exposure to mass media messages of the campaign (exposure measure); specifically, questions were asked on the messages on the *One Love* campaign, and exposure to other HIV/AIDS programmes in the country (Hutchinson et al., 2012), knowledge about HIV/AIDS; subjective norms, attitudes, self-efficacy, and perception of risk in relation to HIV (Hutchinson et al., 2012). Outcome variables were measured through questions on history of HIV testing.

A wealth index- a composite measure of a household's cumulative living standard was developed using data on variables regarding ownership of selected assets, such as televisions and bicycles; materials used for housing construction; and types of water access and sanitation facilities. Using principal components analysis (Filmer and Pritchett, 2001, Vyas and Kumaranayake, 2006) to determine weights for the different components, the wealth index was generated to place individuals on a continuous scale of relative wealth. Factor weights were then extracted for each variable and a wealth index score calculated for each respondent in the survey data set. The respondents were then separated into equal quintiles based on the wealth index scores. The respondents with the lowest scores were categorized as the “poorest quintile” – Quintile One and those with highest scores categorized as the “wealthiest quintile” – Quintile Five.

In the secondary data analysis, the exposure variable was measured through considering the questions: have you seen this logo (making reference to the One Love logo)? Have you

heard about the *One Love* campaign? (reported as yes or no); If yes, is it from one TV or radio , or more than one source?

The outcome variable (HIV testing) was measured through the questions: have you ever gone for an HIV test? The secondary data analysis considered several covariates such as socio-demographic characteristics (e.g. Age, education level, nationality, sex, marital status, socio-economic status (defined as wealth quintile), whether respondent had children or not, country of residence and exposure to other HIV/AIDS programmes in the country.

2.7 Data management and analysis

In the primary study, data were cleaned and prepared for analysis using STATA version 11 (STATACorp 2009). A random sample (10%) was tested to validate the data cleaning process and minor discrepancies fixed (Hutchinson et al., 2012).

The secondary data analysis used the de-identified (participant identifiers were removed) and cleaned dataset. In the analysis, the researcher first sought to understand the structure of the primary data set, to locate the needed variables. The researcher then checked the data set thoroughly for any incongruent values, missing data, extreme (outliers- through graphic display), inconsistent values and obvious data entry errors. Obvious errors were recoded and the dataset saved under another name. In line with recommended practice, (Joubert, 2007) data were explored through graphical display, aiming to identify strange values or implausible outliers, and these were recoded as missing values. The researcher consulted with the Principal Investigator in the primary study for explanations and retrieval of missing or incongruent data. The researcher also referred to the original “do file” for explanations of data coding. None of the variables included a significant quantity of missing data and thus no imputations were considered in the analysis. The data were analyzed using STATA statistical software (version 12.0, STATA Corp., College, Station Texas, USA).

The data were largely categorical and Pearson’s chi-squared tests were used to detect associations between the independent variables (i.e., socio-demographic factors and respondent characteristics) with the dependent variable (i.e., HIV testing).

Data from broader categories were collapsed into narrower categorical variables, as indicated in Table 1, to ensure more robust results. For example, age was transformed into categories and then recoded.

Table 1: Transformation of variables

Variable	Transformed variable
Age group:	15-17; 18- 20; 21 and older
Education level	Never attended; Primary; Secondary; Tertiary
Marital status	Never married; Married (includes traditional); Living together; Divorced/widowed
Media exposure	Television/radio: never watched/listened; watched/listened 1-2 days/week; watched/listened 3-5 days/week; watched/listened 6-7 days/week
HIV knowledge	Low knowledge; Moderate knowledge; and High knowledge
HIV risk perception	Lower perception of risk; higher perception of risk

The variable proportions were reported using *p*-values and 95% confidence intervals (CIs).

Using the twelve survey items that assessed HIV knowledge (questions K1-K12 in the annex questionnaire) with each correct answer scored one (1) and a wrong answer scored zero (0_ a categorical variable for low, medium and high knowledge scores were created, through recoding and generating a categorical variable with low being knowledge score less than five, medium being score between five and eight and high, knowledge score between eight and twelve. This was done through collapsing and aggregating the data by knowledge score and creating mean and median values and creating frequency weights.

2.7.1 Descriptive statistics

To address the clustered sampling design, analyses were weighted and STATA's *svy* commands were utilized. The *svy* commands also address the sample stratification and the intra-cluster correlation associated with the multistage sample design and greater homogeneity of households within enumeration areas relative to simple random sampling (Stata Corp., 2011). This ensured that the survey results were representative at the national level.

Univariate descriptive statistical methods were used to describe the study sample by socio-demographic characteristics. The mean and standard deviation were used to describe continuous variables (such as age), because the data were normally distributed. In the

description of categorical variables (such as educational attainment, marital status, and country), frequencies and proportions were used.

Frequencies and proportions were used to describe types of mass media (categorical variables). In order to determine the prevalence of self-reported HIV testing among young people aged 15-24, proportions were determined through cross tabulations, and a chi-square test used to compare proportions. To determine whether there was a relationship between self-reported HIV testing and age group specifically young people aged below 18 and those aged 18-24, proportions were determined through cross tabulations, and a chi-square test (with p-value) used to compare proportions. Summary statistics, such as frequencies were presented in tables (as seen in chapter three).

2.7.2 Inferential statistics

For the outcome variable (HIV testing), which is categorical, the Chi-squared test was used to determine if there was an association between media campaign exposure and HIV testing. An alpha level of 0.05 was used for the tests.

To test the hypothesis in objective 3, multivariable logistic regression was used to estimate the adjusted odds ratio to determine if there is an association between HIV testing and exposure to the *One Love* mass media campaign while controlling for covariates and potential confounders.

For all the logistic regression models, covariates (HIV/AIDS knowledge and awareness, educational attainment, marital status, social economic status, perception of risk and specific differences among the five countries) were selected on a basis of theoretical relevance and/or a p -value <0.2 . Age and education were controlled for in all the models. All significant variables were entered into the model, and the non-significant variables were removed for a more parsimonious model. The likelihood ratio and confidence intervals (CIs) were also examined for significant changes. The results of the logistic regression models are reported using adjusted odds ratios (aORs) and 95% CIs.

2.8 Ethical considerations

Ethical clearance for the primary study was provided by the national Human Research Ethics Committee in each of the participating countries and the University of Tulane internal

review board (Hutchinson et al., 2012). For the secondary data analysis, the researcher received ethics clearance from the University of Witwatersrand's Faculty of Health Sciences Human Research Ethics Committee (HREC)-[certificate number M141043]. A letter granting permission for use of the data set was provided by the owners of the data set, the Soul City Institute for Health and Development Communication. All study participants were given full information about the primary study and its aims by field workers. All participants voluntarily gave written consent to participate in the survey, and consent forms were de-linked from the data collection process. Participants were assured that they could leave the research at any time during the interview process. Confidentiality and anonymity were assured by asking participants not to mention their surnames, and the use of household numbers on the questionnaires(Hutchinson et al., 2012) .

To maintain confidentiality of the data the data set was de-identified. The data set was kept on the researcher's personal laptop, which was password-protected. The researcher and academic supervisor were the only people that had access to the data set, which was only used for the purposes of this study.

Chapter Three: Results

3.1 Socio-demographic characteristics of respondents

Table 2 describes the demographic characteristics of young people that participated in the study. A total of eight-thousand-six-hundred and thirteen young people (n=8613) participated in the study. Just over a quarter (25.7%) of the respondents were from Mozambique, followed by Zambia (21.0%), Swaziland (19.4%), Lesotho (19.2%) and Zambia. There was a nearly equal distribution of males (49.7%) and females (50.3%), with a mean age of 19 years (SD=2.8). Nearly a quarter (24.9%) of the respondents were aged between 15 and 17 years with the rest nearly equally distributed between the age group 18 to 20 years (36.9%) and 21 to 24 years (38.2%).

Nearly all the study participants (94.7%) had some education with the majority (39.9%) were still in school at the time of the study. Nearly two-thirds (65.3%) had completed secondary education, 28.0% had primary education, 5.3% had no education at all and 1.4% had tertiary education. Overall, most (79.5%) of the participants had never married, 14.4% were married, 4.8% living together while only 1.3% were either widowed or divorced. Just over a quarter (26.2%) of the respondents had a child /children at the time of the study. There was an almost equal distribution of respondents among social economic groups, with a slight majority (23.8%) in quintile one, followed by 20% in quintile two, followed by 19.5% in quintile four, 19.3 % in quintile three , and 17.4% in quintile five .

Table 2. Socio-demographic characteristics of study participants

Characteristics	Frequency (n)	Un-weighted Percentage (%)	Weighted %
Country (n=8613)			
Lesotho	1,640	22.60	19.20
Mozambique	2,303	32.00	25.70
Namibia	1,795	20.80	21.00
Swaziland	1,609	18.90	19.40
Zambia	1,266	14.70	14.70
Age group (n=8613)			
15-17 years (1)	2,132	24.70	24.90
18-20 years (2)	3,150	36.60	36.90
21-24 years (3)	3,331	38.70	38.20
Mean age:	19.58 years (SD 2.5)		
Sex (n=8612)			
Male	4,380	50.90	49.70

Female	4,232	49.10	50.30
Currently schooling (n=8599)			
Currently in School	3,598	41.80	39.90
Not currently in school	5,001	58.20	60.10
Highest education level attained (n=8525)			
Never attended	351	4.10	5.30
Primary	2,157	25.30	28.00
Secondary	5,847	68.60	65.30
Tertiary	170	2.00	1.40
Marital status (n=8611)			
Never married	6,795	78.90	79.50
Married (includes traditional	1,240	14.40	14.40
Living together	475	5.50	4.80
Divorced/widowed	101	1.20	1.30
Have Children (n=8605)			
Yes	2,192	26.5	26.20
No	6,413	74.5	73.80
Wealth quintile (n=8574)			
Quintile 1	1,509	17.60	23.80
Quintile Q2	1,644	19.20	20.00
Quintile Q3	1,710	19.90	19.30
Quintile Q4	1,895	22.10	19.50
Quintile Q5	1,816	21.20	17.40

3.2 HIV Knowledge among participants

Table 3 describes the HIV knowledge levels of the participants and their perception of HIV risk.

Most of the participants (62.3%) had low knowledge scores, nearly a third had moderate scores while 8.6% demonstrated a high knowledge score. Among participants, 41.4% had high perceptions of HIV risk while 58.6% had low perception of HIV risk.

Table 3: Knowledge of HIV and risk perceptions

	Mean	Median	Range
HIV knowledge score	8.23	9	0-12
Perception of risk score	4.31	4	3-10
	Freq (n)	Unweighted (%)	Weighted (%)
HIV knowledge (n=8613)			
High knowledge (3)	759	8.80	8.60
Moderate knowledge (2)	2,572	29.90	29.10
Low knowledge (1)	5,282	61.30	62.30
Perception of risk (n=7217)			
Higher perception of risk	2,992	41.46	41.36
Lower perception of risk	4,225	58.54	58.64

3.3 Young People's exposure to electronic media and the *One Love* campaign

Table 4 shows the distribution of respondents with respect to exposure to electronic media and awareness of the *One Love* campaign. Nearly half of the respondents (47.2%) did not watch television at any time of the week, four of every ten watched nearly every day (6-7 days a week), one in every ten (10.6%) watched up to two days a week, while only 8.3% watched three to five days a week.

With respect to radio, 42.3% of the respondents listened at least six days a week, nearly 22% never listened to radio at all, one in five listened to radio three to five days, while nearly 16% listened up to two days a week. With regard to multi-media exposure (both radio and television) the majority of the respondents (46.9%) listened to radio and watched television, 31.2% only listened to radio, 16% watched television and listened to radio, while nearly 6% only watched television. A third (30.4%) of the respondents were aware of *One Love* campaign.

Table 4: Media exposure and exposure to the *One Love* campaign

	Frequency (n)	Un-weighted Percentage (%)	Weighted %
Media type by days			
Television (n=8576)			
Never watched	3,581	41.80	47.20
Watched 1-2 days/week	935	10.90	10.60
Watched 3-5 days/week	784	9.10	8.30
Watched 6-7 days/week	3,276	38.20	33.90
Radio (n=8577)			
Never listened	1,852	21.60	21.90
listened 1-2 days/week	1,371	16.00	15.70
listened 3-5 days/week	1,780	20.70	20.10
listened 6-7 days/week	3,574	41.70	42.30
Multimedia (radio and/or TV) (n=8558)			
Not exposed to either radio or TV	1,216	14.21	16.00
Exposed to Radio only	2,363	27.61	31.20
Exposed to TV only	632	7.38	05.90
Exposed to both radio and TV	4,347	50.79	46.90
Awareness of <i>One Love</i> (n=8599)			
Yes	2,718	31.60	30.40
No	5,881	68.39	65.60

3.4 Young People HIV testing

Table 5 shows the history of HIV testing among respondents.

There was nearly equal distribution of respondents between those that had had an HIV test (52.0%) and those that had not (48.0%).

Table 5: History of HIV testing (n=8512)

	Frequency (n)	Unweighted percentage (%)	Weighted percentage (%)
Had HIV test	4,212	49.50	48.00
Did not have HIV test	4,300	50.50	52.00

3.5 Association between respondents' demographic characteristics and HIV testing

Table 6 shows the association between characteristics of the participants with HIV testing.

Country was significantly associated with HIV testing ($P < 0.001$). There were significant differences between the respondents who tested and those who did not, with more people

likely to test in Lesotho, Namibia, Swaziland and Zambia (12.2%, 11.6%, 9.9%, and 8.1% respectively) compared to those that did not have an HIV test (7.3%, 9.7%, 9.7%, and 6.9% respectively). In contrast respondents from Mozambique were significantly less likely to test for HIV, with only 6.3% testing for HIV compared to 18.5% who did not test for HIV. Age was significantly associated with HIV testing ($P < 0.001$). More than double the proportion of respondents aged 21-24 years tested for HIV (25.7%) compared to 12.3% who did not have an HIV test. Younger respondents, aged 15-18 years, were significantly less likely to have tested for HIV. Sex was significantly associated with HIV testing ($p < 0.001$), with females (30.0%) more likely to test for HIV than males (18.0%).

Attending school or not at the time of the study was significantly associated with HIV testing ($P < 0.001$), with the respondents who were not attending school (34.8%) significantly more likely to have had an HIV test than those attending school (13.2%). The level of education attained was significantly associated with testing for HIV ($P < 0.001$). Respondents with secondary or tertiary education were significantly more likely to have an HIV test with 35.8% of those with secondary education having an HIV test compared with 30.2% that did not have an HIV test and 0.9% of those with tertiary education having an HIV test compared with 0.5% that did not have an HIV test. In contrast, the opposite was observed in respondents with primary education and those that had not been to school, where only 10.3% of respondents with primary education were likely to have an HIV test compared to 17.4% of respondent who did not have an HIV test. Only 1.1% of respondents with no education had an HIV test compared to 3.8% that did not have an HIV test.

HIV knowledge has significantly associated with HIV testing ($P < 0.001$), those with high knowledge more likely to have an HIV test, compared with those with medium and low knowledge.

Marital status was significantly associated with testing for HIV ($P < 0.001$). More than double the proportion of respondents who were married (10.5%) were more likely to have an HIV test than those that did not have an HIV test (3.7%). Respondent that were living together were significantly more likely to have an HIV test with 2.8 % having an HIV test compared to 1.6% that did not. Those that were either divorced or widowed were nearly as likely to have an HIV test, with 0.7% having an HIV tested compared to 0.6% that did not. Respondents

that had never married were significantly less likely to have an HIV test, with only 34.1% of those who were never married having an HIV test compared with 40.6% that did not have an HIV test.

Having children was significantly associated with having an HIV test ($P<0.001$) with respondents that had children (20.2%) significantly having an HIV test compared to those that did not have an HIV test (5.5%).

Table 6. Association between socio-demographic characteristics and HIV testing

	Tested for HIV n (%)	Did not test for HIV n (%)	Total n (%)	P-value
Country (nationality) (n=8,512)				
Lesotho	1,040 (12.2)	600 (7.25)	1,640 (19.47)	P<0.001
Mozambique	671 (6.3)	1,543 (18.5)	2,214 (24.73)	
Namibia	1,000 (11.6)	791 (9.7)	1,791 (21.26)	
Swaziland	818 (9.9)	785 (9.7)	1,603 (19.61)	
Zambia	683 (8.05)	581 (6.9)	1,264 (14.92)	
Age group (n=8,512)				
15-18 years	469 (5.7)	1,648 (19.4)	2,117 (25.1)	P<0.001
18-20 years	1,480 (16.7)	1,634 (20.2)	3,114 (36.9)	
21-24 years	2,263 (25.7)	1,018 (12.3)	3,281 (38.0)	
Sex (n=8,511)				
Male	1,636 (18.0)	2,716 (32.0)	4,352 (50.0)	P<0.001
Female	2,576 (30.0)	1,583 (20.0)	4,159 (50.0)	
Current school attendance (n=8,500)				
Currently in School	1,213 (13.2)	2,342 (26.6)	3,555 (39.8)	P<0.001
Not currently in school	2,992 (34.8)	1,953 (25.4)	4,945 (60.2)	
Education level attained (n=8,442)				
Never attended	88 (1.1)	236 (3.8)	324 (4.9)	P<0.001
Primary	856 (10.3)	1,264 (17.4)	2,120 (27.7)	
Secondary	3,130 (35.8)	2,701 (30.2)	5,831 (66.0)	
Tertiary	114 (0.9)	53 (0.5)	167 (1.4)	
Marital status (n=8,512)				
Never married	2,903 (34.1)	3,852 (46.0)	6,755 (80.1)	P<0.001
Married (includes traditional)	936 (10.5)	277 (3.7)	1,213 (14.2)	
Living together	308 (2.8)	138 (1.6)	446 (4.4)	
Divorced/widowed	65 (0.7)	33 (0.6)	98 (1.3)	
Have children (n=4,278)				
Yes	1,726 (20.2)	413 (5.5)	2,139 (25.7)	P<0.001
No	2,483 (27.9)	3,884 (46.4)	2,139 (74.3)	
Wealth quintile (n=8,475)				

Quintile 1	617 (9.1)	839 (14.1)	1,456 (23.2)	P<0.001
Quintile 2	825 (10.1)	798 (9.9)	1,623 (20.0)	
Quintile 3	863 (10.0)	840 (9.5)	1,703 (19.5)	
Quintile 4	1,019 (10.5)	865 (9.2)	1,884 (19.7)	
Quintile 5	868 (8.3)	941 (9.2)	1,809 (17.5)	
HIV knowledge (n=8510)				
High	25.39	36.41	61.8	P<0.001
Moderate	17.36	12.13	29.49	
Low	05.29	03.41	08.71	
Risk Perception				
High	24.35	17.00	41.35	P<0.001
Low	26.73	31.93	58.65	

3.6 Association between exposure to media and HIV testing

Table 7 describes the association between the exposure to media and HIV testing. Watching television was not significantly associated with HIV testing ($P=0.362$). There were no significant differences among respondents that never watched television, those that watched television up to two days a week, three to five days a week, and six to seven days a week. Listening to radio was significantly associated with HIV testing ($P<0.001$).

Respondents listening to radio, six to seven days a week (23.74 %) were more likely to have an HIV test compared with those that did not (18.94%). Being exposed to a mix of both radio and television was significantly associated with having an HIV test ($P=0.02$). There was a significant difference among respondents that were exposed to either television, radio or a combination of both media.

Table 7. Media exposure by HIV testing

	Tested for HIV n (%)	Did not test for HIV n (%)	Total	P-value
Media exposure				
Yes	3,674 (55.31)	3,660 (44.69)	7,334(100)	0.56
No	532(56.96)	633(43.04)	1,165(100)	
Media type by days				
TV				0.36
Never watched	1,743 (24.83)	1,760 (21.78)	3,503 (46.61)	
Watched 1-2 days/week	46 (05.48)	473 (05.3)	933 (10.78)	
Watched 3-5 days/week	376 (03.92)	407 (04.45)	783 (08.37)	
Watched 6-7	1,622 (16.89)	1,639 (17.36)	3,261 (34.25)	
Radio				
Never listened	815 (09.11)	980 (12.25)	1,795 (21.36)	P<0.001

listened 1-2 days/week	579 (06.41)	780 (09.3)	1,359 (15.71)	
listened 3-5 days/week	778 (08.86)	986 (11.39)	1,764 (20.25)	
listened 6-7 days/week	2,029 (23.74)	1,534 (18.94)	3,563 (42.68)	
Multimedia (radio and /or TV)				
Not exposed to either radio or TV	532 (06.49)	633 (08.99)	1,165 (15.48)	0.02
Exposed to Radio only	1,211 (15.33)	1,125 (15.81)	2,336 (31.14)	
Exposed to TV only	282 (02.63)	344 (03.27)	626 (05.89)	
Exposed to both radio and TV	2,171 (23.69)	2,164 (23.79)	4,335(47.48)	

Table 8 describes the association between HIV testing and level of exposure to the *One Love* campaign. The number of media through which respondents were exposed to the campaign was significantly associated with testing for HIV ($P < 0.001$). The more the number of media through which respondents were exposed to *One Love*, the higher was the likelihood of having an HIV test, with exposure to three media being more associated with HIV testing (16.3%) and 11.4% not having an HIV test compared to exposure to the campaign through two media (16.3% vs. 14%)

Table 8. Association between HIV testing and *One Love* exposure

<i>One Love</i> Exposure	Tested for HIV n (%)	Did not test for HIV n (%)	Total	P-value
Not exposed to any medium	510 (6.16)	1,058 (14.85)	1,568 (21.01)	P<0.001
Exposed to 1 medium	781 (09.28)	928 (11.66)	1,709 (20.94)	
Exposed to 2 media	1,457 (16.28)	1,291 (14.01)	2,748 (30.29)	
Exposed to 3 media	1,464 (16.33)	1,023 (11.44)	2,487 (27.76)	

3.7 Multivariate logistic regression

The multivariable logistic regression model of HIV testing ($p < 0.001$) is presented in table 9.

The number of sources through which respondents were exposed to the *One Love* campaign, marital status, knowledge score, whether one had a living child, respondent age group, education level, gender, wealth quintile, and country were significantly associated with HIV testing. Having exposure to *One Love* through multiple media, was positively associated with HIV testing. There was a dose response with respect to having an HIV test. Respondents exposed to three media were 2.3 times more likely to have an HIV test

(aOR=2.34, 95% CI 1.94-2.81), those exposed to two media were nearly 1.8 times more likely to have an HIV test, while those exposed to one medium were 1.4 times more likely to have an HIV test than the reference group, those not exposed to *One Love* through any medium.

Respondents with a living child were 4.2 times more likely to have an HIV test (aOR=4.23, 95% CI 3.57-5.01) than the reference group, having no living child. Respondents that were single (never married) were nearly 40% less likely to have an HIV test than those in the reference group, married (aOR=0.59, 95% CI 0.48 - 0.73). Divorced/widowed respondents were nearly 30% less likely to have an HIV test than those in the reference group, married (aOR=0.69, 95% CI 0.79 - 1.46).

Age group was positively associated with HIV testing with those in the aged 18-20 years being more than twice as likely to have an HIV test than the reference group, 15-17 years (aOR=2.24, 95% CI 1.95 - 2.58). Those in age group 20-24 were more than four times more likely to have an HIV test than the reference group, 15-17 years (years (aOR=4.14, 95% CI 3.57 - 4.81). Increased level of education was positively associated with HIV testing. Young people that reported having primary education had 1.6 times increased odd of having an HIV test (aOR=1.62, 95%CI 1.18- 2.24) compared to the reference group, who had no education. Those with secondary or tertiary education had 2.6 odds of having an HIV test than the reference group, no education (aOR= 2.67, 95% CI 1.92 - 3.68).

Females were nearly twice as likely to have an HIV test than the reference group, males (aOR= 1.95, 95% CI 1.75 - 2.18). Increased wealth until quintile 4 was significantly associated with not having an HIV test. Young people who were in quintile 4 were 7% less likely to have an HIV test than those in the reference group, quintile 1 (aOR= 0.93, 95% CI 0.77 - 1.12). Residents of Namibia were less likely to have an HIV test, compared to the reference group, Lesotho, (aOR= 0.57, 95% CI 0.48 - 0.68) followed by Zambia, (aOR= 0.54, 95% CI 0.45 - 0.65), Swaziland (aOR= 0.37, 95% CI 0.31 - 0.45) and Mozambique (aOR= 0.26, 95% CI 0.22 - 0.30).

Table 9. Multivariate logistic regression analysis testing the hypothesis that exposure to *One Love* is associated with HIV testing

	aOR	95% CI	p-value
Exposure to <i>One Love</i> campaign			
Not exposed to <i>One Love</i>	Ref		
Exposed through 1 medium	1.40	1.17 - 1.68	P<0.001
Exposed through 2 media	1.79	1.51 - 2.13	P<0.001
Exposed through 3 media	2.30	1.94 - 2.82	P<0.001
Knowledge score	1.14	1.12 - 1.17	P<0.001
No living child	Ref		
Living child	4.23	3.57 - 5.01	P<0.001
Marital status			
Married	Ref		
Living together	1.08	0.80 - 1.46	0.618
Divorced/widowed	0.69	0.80 - 1.46	0.177
Never married	0.59	0.48 - 0.73	P<0.001
Age group			
Age-group (15-17 years)	Ref		
Age-group (18-20 years)	2.25	1.95 - 2.58	P<0.001
Age-group (21-24 years)	4.14	3.57 - 4.81	P<0.001
Education level			
No education	Ref		
Primary	1.63	1.18 - 2.24	0.003
Secondary or higher	2.66	1.92 - 3.68	P<0.001
Gender			
Male gender	Ref		
Female gender	1.95	1.75 - 2.18	P<0.001
Wealth quintile			
Wealth quintile 1	Ref		
Wealth quintile 2	1.34	1.12 - 1.60	0.001
Wealth quintile 3	1.22	1.02 - 1.46	0.029
Wealth quintile 4	1.23	1.02 - 1.48	0.025
Wealth quintile 5	0.93	0.77 - 1.12	0.453
Country			
Lesotho	Ref		
Mozambique	0.26	0.22 - 0.30	P<0.001
Namibia	0.57	0.48 - 0.68	P<0.001
Swaziland	0.37	0.31- 0.45	P<0.001
Zambia	0.54	0.45 - 0.65	P<0.001

Chapter Four: Discussion

This section discusses the findings presented in chapter three. The results are considered in light of literature. Limitations of the study are discussed as part of the chapter.

The study sought to investigate the relationship between the exposure to a media campaign and uptake of HIV testing among young people aged 16-24 years in five Southern African countries. We found a relationship between exposure to the *One Love* campaign and uptake of HIV testing among young people living in five Southern African countries. Exposure to more than one medium in the campaign showed greater odds of testing. The effectiveness of HIV testing as an entry point for HIV prevention, treatment and care has a massive public health benefit. Therefore, with the thousands of young people in their early reproductive years and sexually active, undertaking HIV testing as a result of a mass campaign, the benefits of testing as public good cannot be over emphasized. This study re-emphasizes earlier plausibility that individual perception of risk (which may be increased by a media communication programme such as *One Love*), may be significantly associated with HIV testing (Khawcharoenporn et al., 2016).

Although this study did not explore variations in HIV testing between rural and urban respondents recent evidence has shown the influence of media exposure on intention to be tested was found to be different in urban and rural contexts with intention to be tested increasing as exposure to HIV-related media content increased among urbanites (Bekalu and Eggermont, 2015).

Use of media campaigns for public health benefit have been shown to be a cost-effective approach for social and behavior change communication (Hutchinson and Wheeler, 2006). The *One Love* campaign was implemented across a number of countries in the Southern Africa sub-region reaching millions of people (Hutchinson et al., 2012).

4.1 Mass media and HIV testing

The study has shown exposure to *One Love* through multiple media, was positively associated with HIV testing, and there was a dose response with respect to having an HIV test, suggesting that exposure to multiple media increased the odds of a young person going for a test.

The findings are consistent with a recent study in Ghana that examined the relationship between levels of exposure to radio, television and print media, and the uptake of HIV testing among married people (both women and men) which showed that there was a higher prevalence of HIV testing among married women than their male counterparts (Sano et al., 2016). Similarly, the use of media in a social and behaviour change communication programme in Malawi improved uptake HIV testing and condom use (Kaufman et al., 2014).. In Ghana, Sano et al. (2016), found that higher levels of exposure to radio was associated with HIV testing among women, while higher levels of exposure to print media and television were associated with HIV testing among men(Sano et al., 2016). These differences in the type of media were not reflected in this study.

The findings from this study have shown the role of large-scale multi-channel programmes (such as *One Love*) can play in achieving high coverage and measurable effects on uptake of HIV testing services.

4.2 Age differences in HIV testing

The findings from this study have shown that the participants that were above 20 years were four times more likely to have tested for HIV than younger ones (below 18 years). The findings are consistent with those from an earlier study in Nigeria (Abiodun et al., 2014) that showed that students above age of 21 were twice as likely to have an HIV test compared to younger ones; and a more recent one in Zambia (Shanaube et al., 2017b) that showed adolescents aged 17-18 years were twice as likely to accept HTC compared to 15-year olds. The finding is also similar to that from a recent study in Thailand where HIV testing among university students was least common among those of a younger age group (Khawcharoenporn et al., 2016), which seems to suggest that although the contexts are different, among young people the older one is the higher the likelihood of having an HIV test. Contrary to this, a recent study among adults (18 years and older) in Zambia showed that HCT was highest among 18-19 year olds, but there were increased chances of refusal from ages 20-50 and those above 50 were more likely to decline (Shanaube et al., 2017a). This has also been observed in other African studies that have found that despite high HIV knowledge on available testing sites such older groups are associated with survey responses that indicate no history of testing (Staveteig et al., 2013, Mohlabane et al., 2016).

Therefore, there appears to be a correlation between being older and HIV testing, up to a certain age, possibly until late adolescence or early adulthood when sexual activity (and potentially, risky sexual practices) are highest.

4.3 Gender differences in HIV testing

The findings from this study have shown significant differences between females and males with respect to HIV testing, with females (30.0%) more likely to test for HIV than males (18.0%). This could be explained by the fact that most women go for HIV testing during pregnancy as part of the routine health screening and prevention of HIV transmission from mother to infant and the fact that females often utilize health services more than their male counterparts (Doherty et al., 2016, Geoffroy et al., 2017, Baker et al., 2014) .

The finding is also consistent with previous studies in Sub-Saharan Africa and beyond. For example, studies in West Africa have also shown the same findings- three studies, one in Nigeria and the others in Ghana showed there was more willingness among females to have an HIV test (Abiodun et al., 2014, Sano et al., 2016, Darteh et al., 2014).

A study in Malawi (Kaufman et al., 2014) found that being female, and married was associated with higher HIV testing. All these findings are despite several barriers that women face with respect to HIV testing, some of which include: partners' attitudes towards testing, fear of partners' reaction, decision-making and communication patterns between partners (Maman et al., 2001, Obermeyer and Osborn, 2007). A study in South Africa also showed that fear of revealing infidelity discourages both men and women from HIV testing and counselling including disclosure (Olley et al., 2004), while one in Lesotho also showed that men had lower HIV testing rates than women (DiCarlo et al., 2014) largely due to gender stereotypes and perceptions that HIV testing was for women. Studies in Africa have also advocated for specific engagement of men in HIV prevention efforts (Ghajarieh and Kow, 2011, Mills et al., 2012). Similarly, two previous studies in the United States of America (Jenness et al., 2009, Tan et al., 2016) have demonstrated higher HIV testing among females as compared to males.

4.4 Parity differences in HIV testing

This study has found that having children was associated with having an HIV test. Many of the HIV tests undertaken by females are within the context of antenatal care where service providers provide counselling and testing for the prevention of HIV transmission from an HIV positive pregnant woman to a baby either during child birth or through breastfeeding. It is possible that the respondents that had a child had also received an HIV test during pregnancy (Doherty et al., 2016).

4.5 Marital status and HIV testing

This study demonstrated that young people that were married or cohabiting were more likely to test for HIV than those who were either single or divorced. A recent study in Ghana that examined the relationship between levels of exposure to radio, television and print media, and the uptake of HIV testing among married people (both women and men) showed that there was a higher prevalence of HIV testing among married women than their male counterparts (Sano et al., 2016). This study showed no significant differences between females and males of the same marital status and HIV testing. An earlier study in Uganda had shown that married or cohabiting women were less likely to undertake HIV testing, possibly because they did not wish their partners or family members to know their HIV status (Fabiani et al., 2007).

The findings of this study can be explained by the assertion that people (males and females) who are in a married/cohabiting relationship are more likely to have sexual intercourse and may therefore have a higher perception of risk which may increase their propensity to seek for HIV testing services (Babalola, 2007a). People in a stable relationship are also likely to be home most of the time (Babalola, 2007a); and the fact that the *One Love* campaign was aired on television and radio, this group of the population could have therefore had a higher exposure to campaign information on testing.

4.6 Education and HIV testing

This study highlighted that higher levels of education were positively associated with HIV testing. Having at least secondary education was associated with a higher likelihood of undertaking an HIV test as compared with no education at all. Previous evidence (Fabiani et al., 2007, Buzdugan et al., 2014) has also demonstrated this link, confirming the importance of education in the response to HIV in Sub-Saharan Africa and Southern Africa in particular.

There seems to be a relationship between knowledge about HIV and education status as a study in Nigeria showed that young people who were knowledgeable about HIV (for example, knew that a person that is living with HIV can look healthy), were also more likely to undertake a test for the virus (Babalola, 2007a). The trend could be explained by the fact that education empowers people to understand the potential benefits of a measure for HIV prevention, such as HIV testing, thus makes them more receptive to these measures.

4.7 Knowledge and HIV testing

In our study, HIV knowledge has been seen to be a predictor of behavior including with HIV testing. Previous studies in different contexts have demonstrated this relationship. A study in Nigeria students indicated a relationship between high knowledge about HIV and testing (Abiodun et al., 2014), and so did a study among Thailand university students (Khawcharoenporn et al., 2016). Similarly a study in Kenya showed that awareness of an HIV counselling and testing programme was a strong predictor of service utilization (Ayuo et al., 2009), while a recent multi-country study in Ghana, Uganda, Zambia showed that lack of information on HIV and HIV testing was a big barrier to testing (Tun et al., 2016). These findings are also in line with the World Health Organization (WHO) testing recommendations (WHO, 2007) and confirmed with a study in Namibia that showed that community sensitization was essential in enhancing HIV testing (Davyduke et al., 2015). Although correct and comprehensive knowledge regarding HIV prevention among young people aged 15–24 years in Southern Africa has improved between the 2000–2008 period and the 2009–2015 period, especially among young women, less than half, had comprehensive knowledge in more recent surveys (UNAIDS, 2016). This underscores the importance of continued social and behavior change communication programmes.

4.8 Media campaign effects

It is to be noted that most of the research on the effect of mass media campaigns in low and middle income countries have been focused on other outcomes such as health-related attitudes, behavior intentions, or behaviours other than HIV testing. For example, a 2001 study among young people in Zimbabwe intended to assess the reproductive health knowledge, discussion, safer sexual practices and health service utilization, the campaign increased discussions on sexual reproductive health, increased chances of young people saying no to sex, increased visits to health facilities and utilization of contraceptives (Kim et

al., 2001). In addition, two studies in the United States of America, one using small media materials (CDC, 1999) increased condom use, while the other, that investigated the impact of a small media campaign in reducing syphilis, led to increased knowledge of syphilis, testing and condom use (Ross et al., 2004).

4.9 Use of multiple approaches for media campaign

The use of multi-media or a combination of approaches has been demonstrated in this study as an effective strategy for increasing HIV testing. This has also been demonstrated in previous studies that have used campaigns to influence behavior. A study in the United Kingdom that investigated the effect of clinic-based five minutes- multimedia HIV testing campaign among men who have sex with men, indicated a five-fold increase in HIV testing in intervention clinics compared to other clinics in the same city (McOwan et al., 2002).

The *One Love* campaign also included a mix of interventions and channels including use of several media and skills building. Mass media campaigns can be undertaken in different forms, with variation in message dosage, number of channels used, duration and level of analysis (Noar et al., 2009). An evidence review on HIV/AIDS mass media campaigns undertaken in the last decade (Noar et al., 2009) asserted that such campaigns should have multiple components to have increased efficacy. The findings of this study coupled with earlier evidence therefore, reinforces the notion that a combination of approaches is needed to have greater effects in behavior change.

4.10 Quality of Evidence

The quality of the evidence for behavior change communication interventions has long been a subject of scrutiny and criticism (Noar et al., 2009). Most of the rigorous evidence such as meta-analyses on health campaigns have been undertaken on studies in developed countries such as the United States of America (Snyder et al., 2004, Noar et al., 2014). Lack of rigorous outcome evaluation designs in a number of studies, due to high cost and need to roll-out campaigns very quickly have been identified in the past as possible reasons for not undertaking randomized control trials (Noar et al., 2009, Do and Kincaid, 2006). The *One Love* evaluation study was a post-test study and therefore its rigor cannot be confirmed with confidence.

Despite the shortcomings, the study has demonstrated the strength of the relationship between media campaigns, the dose response to the campaign through use of multi-media and uptake of HIV testing among young people.

Although a number of studies have used quasi-experimental designs to effectively measure the effect of interventions on outcomes few have been able to determine evidence from a causal- effect relationship. Therefore, there is still need for use of robust methodologies for this to be achieved in health communication studies.

4.11 Effect of contamination

The *One Love* campaign was undertaken nationally within the implementing countries. Given this, all young people were theoretically exposed to the intervention, with no obvious control group. The Southern African countries that were implementing the programme were (and still are) all ravaged by the HIV epidemic, thus the need to scale- up prevention communication interventions that would reach as many people as possible to reduce new HIV infections. In the absence of randomization, it was challenging to undertake a more rigorous study to determine interventions effects with more certainty. The challenge has also been indicated in similar studies that have shown similar results. A South African study evaluating the effect on a mass intervention on HIV prevention in young people identified the same challenges (Pettifor et al., 2007). This was also highlighted in a systematic review of evidence from HIV communication campaigns (Noar et al., 2009).

4.12 Use of theory in health communication

The *One Love* campaign was based on theory as a conceptual foundation for the intervention. The Soul City Theory of Change (Peltzer and Seoka, 2004) was applied to develop campaign messages and the evaluation phase of the intervention (Hutchinson et al., 2012). The Soul City theory draws on constructs from Social Cognitive Theory such as self-efficacy and observational learning and the overall concept of reciprocal determinism (in which behaviour, cognitive and other personal factors and those in the environment operate as interacting determinants of each other); meaning that environmental factors have the ability to influence individuals and groups but individuals and groups are able to influence their environments and regulate their own behaviour (McAlister et al., 2008).

Although the subject of different behaviour change theories and how they have been used to develop determinants of behaviour change intervention messages has long been recognised, a host of programmes have not used them to advance the quality and structure of interventions (Noar et al., 2009). This study therefore has further demonstrated the importance of the continued use of theories to underpin programmatic interventions for social and behaviour change communication, including those to promote HIV testing.

4.13 Limitations of the study

There are a few limitations to this study. The study primarily focused on individual level-constructs and in doing so did not measure environmental level factors that may influence young people's decision to undertake an HIV test, such as the patterns of household decision-making, the role of peers, husbands or partners in making decisions regarding HIV testing. It is known that behaviour is influenced by other factors beyond the individual such as social structures and the environment among others.

The primary study relied on a post-only cross-sectional design which means that the outcome (HCT uptake) and the exposure (mass media campaign) were measured at the same point in time which raises a concern about temporality. This means that we cannot be certain that the HCT followed the exposure to the mass media campaign. While we can report an association between variables we cannot report attribution (or causality) due to the study design. It is possible that the outcome could have been influenced by other interventions in the same environment. In addition, as the primary study was undertaken without baseline to the *One Love* programme, it is difficult to attribute the outcome to the intervention. A more robust study design such as a pre- and post- intervention cross-sectional design or randomised control trial would have increased attribution of the outcome to the intervention and establish causality.

This study was primarily quantitative and did not capture specific perceptions which could have given meaning to some of the results. A qualitative component would have helped to identify some of the moderating factors that are associated with the people's decision making process with respect to HIV testing.

The secondary data set could not provide for the analysis by sampling strata to determine if there were any differences that would have a bearing on the outcome. Thus, these were not included in the logistic regression model.

The study used a self-report questionnaire to gather data (including the exposure to the mass media campaign and HIV testing) from the respondents which presents a limitation as some respondents may not have been honest in their responses to specific questions. In addition, there could be recall bias as participants may not have accurately recalled whether they had seen the campaign and differential recall in those that had undergone HIV counselling and testing.

The campaign was a national coverage and the intervention areas were not randomly selected, and the programme interventions had already been ongoing for several years at the time of this evaluation. As a result, programme specific baseline data – from which assessments of change across time could be made - were not collected (Hutchinson et al., 2012). This leads to bias in the sampling and measurement of effect.

Chapter Five: Conclusion and recommendations

5.1 Conclusion

The study found a relationship between exposure to the *One Love* campaign and uptake of HIV testing among young people living in five Southern African countries. Exposure to more than one medium in the campaign showed greater odds of HIV testing.

In this study, knowledge was seen to be a predictor of HIV testing, and so were higher levels of education; being female; being in a married or cohabiting relationship and being older. The results of this study provide important information on the relationship between exposure to a media campaign and HIV testing among young people.

Young people who were exposed to a behavior change communication intervention on similar issues but operationalized in different ways in five countries were more likely to have an HIV test. Theory-based social and behaviour change communication strategies that use multi-media are necessary to achieve improved HIV testing among young people.

The study findings are supportive of more and sustained HIV prevention programmes that operate in a few countries in the southern African region, as a way to increase protective behaviors among young people and contribute to decreasing HIV infection rates in the region of the world that carries the highest burden of the pandemic

5.2 Recommendations

The results of this study present some clear implications for social and behaviour change communication practitioners and implementers of HIV prevention programmes.

Several communication programmes continue to use single channels to generate demand for HIV testing. Social Behaviour Change Communication (SBCC) practitioners and HIV programmers should use multi-media programmes for mass education on HIV testing as an intervention to form part of national policies and programmes for HIV prevention and treatment efforts. There is need to develop specific interventions that target men to improve their access to HIV testing services. Recent evidence on increase in acceptability of self-testing among young people could be promoted with in national HIV policies plans and programmes.

Education empowers people to understand the potential benefits of a measure for HIV prevention, such as HIV testing, thus makes them more receptive to these measures. Therefore, HIV programmers and policy makers should encourage a multi-faceted approach including improving access to basic education.

The utilization of HIV testing is sensitive and often stigmatized, therefore the reliability of surveys based on self-reports may be concerned with an underreporting issue. Although this study used a representative sample, it is recommended that future research, use qualitative and longitudinal data to be able to better detail how young people in Southern Africa access different types of media and the effects on decision making processes regarding HIV testing. This will further provide more information and a better understanding of some of the external/environmental level factors that influence HIV testing among young people.

The study has shown that young people above 20 years have higher testing rates than those below 20 years of age. In southern Africa, young people are increasingly acquiring HIV infection at a younger age; therefore, it is important that social and behavior change communication programmes on HIV testing are targeted to adolescents.

The *One Love* evaluation study was a post-test study and therefore its rigor cannot be confirmed with confidence. Therefore, future studies that use more robust methodologies such as quasi-experimental design, or embedding propensity scores are needed to establish clearer exposure- outcome causal linkages.

The global revolution in information and communications technology, which has dramatically altered the ways in which people network, interact, communicate and share information, offers new opportunities to expand and reinvigorate social-behavioral and prevention demand creation programming. While stand-alone media approaches are unlikely to yield the desired results, the leveraging of new information tools, such as the integration of mobile telecommunications within health programmes, has been shown to improve service delivery and should be explored by HIV programmers.

References

- CHOLA L, PILLAY Y, BARRON P, TUGENDHAFT A, KERBER K, HOFMAN K. Cost and impact of scaling up interventions to save lives of mothers and children: taking South Africa closer to MDGs 4 and 5. *Glob Health Action*. 2015;8:27265. doi: 10.3402/gha.v8.27265. eCollection 2015.
- ABIODUN, O., SOTUNSA, J., ANI, F. & JAIYESIMI, E. 2014. Knowledge of HIV/AIDS and predictors of uptake of HIV counseling and testing among undergraduate students of a privately owned university in Nigeria. *BMC Res Notes*, 7, 639.
- AGHA, S. 2012. Factors associated with HIV testing and Condom use in Mozambique: Implications for programs *Reproductive Health*, 9.
- ANGOTTI, N., BULA, A., GAYDOS, L., KIMCHI, E. Z., THORNTON, R. L. & YEATMAN, S. E. 2009. Increasing the acceptability of HIV counseling and testing with three C's: convenience, confidentiality and credibility. *Soc Sci Med*, 68, 2263-70.
- ARMSTRONG, A., BAGGALEY, R., FERGUSON, J. & VAN DER KWAAK, A. 2013. The Voices, values and preferences of adolescents on HIV testing and counselling Geneva: World Health Organisation.
- ASAMOA, C. K., ASAMOA, B. O. & AGARDH, A. 2017. A generation at risk: a cross-sectional study on HIV/AIDS knowledge, exposure to mass media, and stigmatizing behaviors among young women aged 15-24 years in Ghana. *Glob Health Action*, 10, 1331538.
- AUBREY, J. S., BEHM-MORAWITZ, E. & KIM, K. 2014. Understanding the Effects of MTV's 16 and Pregnant on Adolescent Girls' Beliefs, Attitudes, and Behavioral Intentions Toward Teen Pregnancy. *J Health Commun*.
- AYUO, P. O., WERE, E., WOOLS-KALOUSTIAN, K., BALIDDAWA, J., SIDLE, J. & FIFE, K. 2009. Determinants in HIV counselling and testing in couples in North Rift Kenya. *East Afr Med J*, 86, 83-8.
- BABALOLA, S. 2007a. Readiness for HIV testing among young people in northern Nigeria: the roles of social norm and perceived stigma. *AIDS Behav*, 11, 759-69.
- BABALOLA, S. 2007b. Readiness for HIV Testing among Young People in Northern Nigeria: The Roles of Social Norm and Perceived Stigma. *AIDS and Behavior*, 11, 759-769.
- BABALOLA, S., TAMBASHE, B. O. & VONDRASEK, C. 2005. Parental factors and sexual risk-taking among young people in Cote d'Ivoire. *Afr J Reprod Health*, 9, 49-65.
- BAKER, P., DWORKIN, S. L., TONG, S., BANKS, I., SHAND, T. & YAMEY, G. 2014. The men's health gap: men must be included in the global health equity agenda. *Bulletin of the World Health Organization*, 92, 618-620.
- BEKALU, M. A. & EGGERMONT, S. 2015. Exposure to HIV/AIDS-Related Media Content and HIV Testing Intention: Applying the Integrative Model of Behavioral Prediction. *Mass Communication and Society*, 18, 144-164.
- BERES, L. K., WINSKELL, K., NERI, E. M., MBAKWEM, B. & OBYERODHYAMBO, O. 2013. Making sense of HIV testing: social representations in young Africans' HIV-related narratives from six countries. *Glob Public Health*, 8, 890-903.
- BERTRAND, J. T., O'REILLY, K., DENISON, J., ANHANG, R. & SWEAT, M. 2006. Systematic review of the effectiveness of mass communication programs to change HIV/AIDS-related behaviors in developing countries. *Health Educ Res*, 21, 567-97.
- BICEGO, G. T., NKAMBULE, R., PETERSON, I., REED, J., DONNELL, D., GININDZA, H., DUONG, Y. T., PATEL, H., BOCK, N., PHILIP, N., MAO, C. & JUSTMAN, J. 2013. Recent patterns in population-based HIV prevalence in Swaziland. *PLoS One*, 8, e77101.
- BURNETT, S. M., WEAVER, M. R., MODY-PAN, P. N., THOMAS, L. A. & MAR, C. M. 2011. Evaluation of an intervention to increase human immunodeficiency virus testing among youth in Manzini, Swaziland: a randomized control trial. *J Adolesc Health*, 48, 507-13.

- BUZDUGAN, R. M. A. P., BENEDIKT, C. P., LANGHAUG, L. P., COPAS, A. P., MUNDIDA, O. M. D., MUGURUNGI, O. M. D., WATADZAUSHE, C. B. A., DIRAWO, J., TAMBASHE, B. O. P., CHIDIYA, S. M., WOELK, G. P. & COWAN, F. M. M. D. 2014. Implementation and Operational Research: Population-Level Impact of Zimbabwe's National Behavioural Change Programme. *JAIDS Journal of Acquired Immune Deficiency Syndromes*, 67, e134-e141.
- CDC 1999. Community-level HIV intervention in 5 cities: final outcome data from the CDC AIDS Community Demonstration Projects. *Am J Public Health*, 89, 336-45.
- CENTRAL STATISTICAL OFFICE, C., HEALTH., M. O. & INTERNATIONAL., I. 2014. Zambia Demographic and Health Survey 2013-14 Rockville, Maryland, USA: Central Statistical Office, Ministry of Health, and ICF International.
- CENTRAL STATISTICAL OFFICE, C. & UNICEF. 2016. Swaziland Multiple Indicator Cluster Survey 2014. Final Report. . Mbabane, Swaziland: Central Statistical Office and UNICEF.
- CHERUTICH, P., KAISER, R., GALBRAITH, J., WILLIAMSON, J., SHIRAIISHI, R. W., NGARE, C., MERMIN, J., MARUM, E. & BUNNELL, R. 2012. Lack of knowledge of HIV status a major barrier to HIV prevention, care and treatment efforts in Kenya: results from a nationally representative study. *PLoS One*, 7, e36797.
- COATES, T. J., KULICH, M., CELENTANO, D. D., ZELAYA, C. E., CHARİYALERTSAK, S. & CHINGONO, A. 2014a. Effect of community-based voluntary counselling and testing on HIV incidence and social and behavioural outcomes (NIMH Project Accept; HPTN 043): A cluster-randomised trial. *Lancet Glob Heal*, 2.
- COATES, T. J., KULICH, M., CELENTANO, D. D., ZELAYA, C. E., CHARİYALERTSAK, S., CHINGONO, A., GRAY, G., MBWAMBO, J. K., MORIN, S. F., RICHTER, L., SWEAT, M., VAN ROOYEN, H., MCGRATH, N., FIAMMA, A., LAEYENDECKER, O., PIWOWAR-MANNING, E., SZEKERES, G., DONNELL, D. & ESHLEMAN, S. H. 2014b. Effect of community-based voluntary counselling and testing on HIV incidence and social and behavioural outcomes (NIMH Project Accept; HPTN 043): a cluster-randomised trial. *Lancet Glob Health*, 2, e267-77.
- COHEN, M. S., SMITH, M. K., MUESSIG, K. E., HALLETT, T. B., POWERS, K. A. & KASHUBA, A. D. 2013. Antiretroviral treatment of HIV-1 prevents transmission of HIV-1: where do we go from here? *Lancet*, 382, 1515-24.
- COOVADIA, H. M. 2000. Access to voluntary counseling and testing for HIV in developing countries. *Ann N Y Acad Sci*, 918, 57-63.
- DARTEH, E. K. M., AMO-ADJEI, J. & AWUSABO-ASARE, K. 2014. Correlates of HIV Testing Among Young People in Ghana. *Journal of HIV/AIDS & Social Services*, 13, 219-233.
- DAVIS, K. C., UHRIG, J., RUPERT, D., FRAZE, J., GOETZ, J. & SLATER, M. 2011. Effectiveness of a Mass Media Campaign in Promoting HIV Testing Information Seeking Among African American Women. *Journal of Health Communication*, 16, 1024-1039.
- DAVYDUKE, T., PIETERSEN, I., LOWRANCE, D., AMWAAMA, S. & TAEGTMEYER, M. 2015. Opportunities for strengthening provider-initiated testing and counselling for HIV in Namibia. *AIDS Care*, 27, 990-994.
- DENISON, J. A., O'REILLY, K. R., SCHMID, G. P., KENNEDY, C. E. & SWEAT, M. D. 2008. HIV voluntary counseling and testing and behavioral risk reduction in developing countries: a meta-analysis, 1990--2005. *AIDS Behav*, 12, 363-73.
- DICARLO, A. L., MANTELL, J. E., REMIEN, R. H., ZERBE, A., MORRIS, D., PITT, B., ABRAMS, E. J. & EL-SADR, W. M. 2014. 'Men usually say that HIV testing is for women': gender dynamics and perceptions of HIV testing in Lesotho. *Cult Health Sex*, 16, 867-82.
- DO, M. P. & KINCAID, D. L. 2006. Impact of an entertainment-education television drama on health knowledge and behavior in Bangladesh: an application of propensity score matching. *J Health Commun*, 11, 301-25.
- DOHERTY, I. A., MYERS, B., ZULE, W. A., MINNIS, A. M., KLINE, T. L., PARRY, C. D., EL-BASSEL, N. & WECHSBERG, W. M. 2016. Seek, Test and Disclose: knowledge of HIV testing and serostatus among high-risk couples in a South African township. *Sex Transm Infect*, 92, 5-11.

- FABIANI, M., CAWTHORNE, A., NATTABI, B., AYELLA, E. O., OGWANG, M. & DECLICH, S. 2007. Investigating factors associated with uptake of HIV voluntary counselling and testing among pregnant women living in North Uganda. *AIDS Care*, 19, 733-739.
- FERRAND, R. A., BANDASON, T., MUSVAIRE, P., LARKE, N., NATHOO, K., MUJURU, H., NDHLOVU, C. E., MUNYATI, S., COWAN, F. M., GIBB, D. M. & CORBETT, E. L. 2010a. Causes of acute hospitalization in adolescence: burden and spectrum of HIV-related morbidity in a country with an early-onset and severe HIV epidemic: a prospective survey. *PLoS Med*, 7, e1000178.
- FERRAND, R. A., MUNAIWA, L., MATSEKETE, J., BANDASON, T., NATHOO, K., NDHLOVU, C. E., MUNYATI, S., COWAN, F. M., GIBB, D. M. & CORBETT, E. L. 2010b. Undiagnosed HIV infection among adolescents seeking primary health care in Zimbabwe. *Clin Infect Dis*, 51, 844-51.
- FERRAND, R. A., TRIGG, C., BANDASON, T., NDHLOVU, C. E., MUNGOFA, S., NATHOO, K., GIBB, D. M., COWAN, F. M. & CORBETT, E. L. 2011. Perception of risk of vertically acquired HIV infection and acceptability of provider-initiated testing and counseling among adolescents in Zimbabwe. *Am J Public Health*, 101, 2325-32.
- FILMER, D. & PRITCHETT, L. H. 2001. Estimating Wealth Effects Without Expenditure Data—Or Tears: An Application To Educational Enrollments In States Of India*. *Demography*, 38, 115-132.
- FLOWERS, P., MCDAID, L. M. & KNUSSSEN, C. 2013. Exposure and impact of a mass media campaign targeting sexual health amongst Scottish men who have sex with men: an outcome evaluation. *BMC Public Health*, 13, 737.
- FONNER, V. A., DENISON, J., KENNEDY, C. E., O'REILLY, K. & SWEAT, M. 2012. Voluntary counseling and testing (VCT) for changing HIV-related risk behavior in developing countries. *Cochrane Database Syst Rev*, 9, CD001224.
- FOX, H., FERGUSON, J., AJOSE, W., SINGH, J., MARUM, E. & BAGGALEY, R. 2013. HIV and adolescents: guidance for HIV testing and counselling and care for adolescents living with HIV: Annex 15: Adolescent consent to testing: a review of current policies and issues in Sub-Saharan Africa.: World Health Organisation.
- GEOFFROY, E., SCHELL, E., JERE, J. & KHOZOMBA, N. 2017. Going door-to-door to reach men and young people with HIV testing services to achieve the 90-90-90 treatment targets. *Public Health Action*, 7, 95-99.
- GHAJARIEH, A. B. & KOW, K. Y. 2011. Addressing men and gender diversity in education: a promising solution to the HIV/AIDS epidemic. *Health Care Women Int*, 32, 314-27.
- GOODMAN, E. & BERECHOCHEA, J. E. 1994. Predictors of HIV testing among runaway and homeless adolescents. *J Adolesc Health*, 15, 566-72.
- GRANT, R. M., LAMA, J. R., ANDERSON, P. L., MCMAHAN, V., LIU, A. Y., VARGAS, L., GOICOCHEA, P., CASAPIA, M., GUANIRA-CARRANZA, J. V., RAMIREZ-CARDICH, M. E., MONTOYA-HERRERA, O., FERNANDEZ, T., VELOSO, V. G., BUCHBINDER, S. P., CHARİYALERTSAK, S., SCHECHTER, M., BEKKER, L. G., MAYER, K. H., KALLAS, E. G., AMICO, K. R., MULLIGAN, K., BUSHMAN, L. R., HANCE, R. J., GANOZA, C., DEFECHEREUX, P., POSTLE, B., WANG, F., MCCONNELL, J. J., ZHENG, J. H., LEE, J., ROONEY, J. F., JAFFE, H. S., MARTINEZ, A. I., BURNS, D. N. & GLIDDEN, D. V. 2010. Preexposure chemoprophylaxis for HIV prevention in men who have sex with men. *N Engl J Med*, 363, 2587-99.
- HAMPANDA, K., YBARRA, M. & BULL, S. 2014. Perceptions of health care services and HIV-related health-seeking behavior among Uganda adolescents. *AIDS Care*, 26, 1209-1217.
- HARRISON, A., CLELAND, J., GOUWS, E. & FROHLICH, J. 2005. Early sexual debut among young men in rural South Africa: heightened vulnerability to sexual risk? *Sex Transm Infect*, 81, 259-61.
- HUTCHINSON, P., LANCE, P., GUILKEY, D. K., SHAHJAHAN, M. & HAQUE, S. 2006. Measuring the cost-effectiveness of a national health communication program in rural Bangladesh. *J Health Commun*, 11 Suppl 2, 91-121.
- HUTCHINSON, P. & WHEELER, J. 2006. The cost-effectiveness of health communication programs: what do we know? *J Health Commun*, 11 Suppl 2, 7-45.

- HUTCHINSON, P., WHEELER, J., SILVESTRE, E., ANGLEWICZ, P., COLE, E. & MEEKERS, D. 2012. External Evaluation of the Southern African Regional Social and Behavior Change Communication Program. Unpublished: Tulane University School of Public Health and Tropical Medicine.
- HUTCHINSON, P. L. & MAHLALELA, X. 2006. Utilization of voluntary counseling and testing services in the Eastern Cape, South Africa. *AIDS Care*, 18, 446-55.
- JANA, M., LETSELA, L., SCHEEPERS, E. & WEINER, R. 2014. Understanding the Role of the OneLove Campaign in Facilitating Drivers of Social and Behavioral Change in Southern Africa: A Qualitative Evaluation. *J Health Commun*, 1-7.
- JENNESS, S. M., MURRILL, C. S., LIU, K. L., WENDEL, T., BEGIER, E. & HAGAN, H. 2009. Missed opportunities for HIV testing among high-risk heterosexuals. *Sex Transm Dis*, 36, 704-10.
- JOHNSTON, L., O'BRA, H., CHOPRA, M., MATHEWS, C., TOWNSEND, L., SABIN, K., TOMLINSON, M. & KENDALL, C. 2010. The associations of voluntary counseling and testing acceptance and the perceived likelihood of being HIV-infected among men with multiple sex partners in a South African township. *AIDS Behav*, 14, 922-31.
- JOUBERT, G. 2007. Exploring, summarising and presenting data. In: JOUBERT G, E. R. (ed.) *Epidemiology: a research manual for South Africa*. Cape Town: Oxford University Press.
- JUNG, M., ARYA, M. & VISWANATH, K. 2013. Effect of media use on HIV/AIDS-related knowledge and condom use in sub-Saharan Africa: a cross-sectional study. *PLoS One*, 8, e68359.
- JUSTMAN, J., REED, J. B., BICEGO, G., DONNELL, D., LI, K., BOCK, N., KOLER, A., PHILIP, N. M., MLAMBO, C. K., PAREKH, B. S., DUONG, Y. T., ELLENBERGER, D. L., EL-SADR, W. M. & NKAMBULE, R. 2017. Swaziland HIV Incidence Measurement Survey (SHIMS): a prospective national cohort study. *Lancet HIV*, 4, e83-e92.
- KAGURUSI, P. T. 2013. Impediments to media communication of social change in family planning and reproductive health: experiences from East Africa. *Afr J Reprod Health*, 17, 70-8.
- KALICHMAN, S. C. & SIMBAYI, L. C. 2003. HIV testing attitudes, AIDS stigma, and voluntary HIV counselling and testing in a black township in Cape Town, South Africa. *Sex Transm Infect*, 79, 442-7.
- KAUFMAN, M. R., RIMAL, R. N., CARRASCO, M., FAJOBI, O., SOKO, A., LIMAYE, R. & MKANDAWIRE, G. 2014. Using social and behavior change communication to increase HIV testing and condom use: the Malawi BRIDGE Project. *AIDS Care*, 26, S46-S49.
- KHAWCHAROENPORN, T., CHUNLOY, K. & APISARNTHANARAK, A. 2016. Uptake of HIV testing and counseling, risk perception and linkage to HIV care among Thai university students. *BMC Public Health*, 16, 556.
- KIM, Y. M., KOLS, A., NYAKAURU, R., MARAGWANDA, C. & CHIBATAMOTO, P. 2001. Promoting Sexual Responsibility Among Young People in Zimbabwe. *International Family Planning Perspectives*, 27, 11-19.
- LISKIN, L. 1990. Using mass media for HIV/AIDS prevention. *AIDS Care*, 2, 419-20.
- LLENAS-GARCÍA, J., WIKMAN-JORGENSEN, P., HOBBS, M., MUSSA, M. A., EHMER, J., KEISER, O., MBOFANA, F. & WANDELER, G. 2016. Retention in care of HIV-infected pregnant and lactating women starting ART under Option B+ in rural Mozambique. *Tropical Medicine & International Health*, 21, 1003-1012.
- MACPHAIL, C., PETTIFOR, A., MOYO, W. & REES, H. 2009. Factors associated with HIV testing among sexually active South African youth aged 15–24 years. *AIDS Care*, 21, 456-467.
- MACPHAIL, C. L., PETTIFOR, A., COATES, T. & REES, H. 2008. "You Must Do the Test to Know Your Status": Attitudes to HIV Voluntary Counseling and Testing for Adolescents Among South African Youth and Parents. *Health Education & Behavior*, 35, 87-104.
- MAKUSHA, T., KNIGHT, L., TAEGTMEYER, M., TULLOCH, O., DAVIDS, A., LIM, J., PECK, R. & VAN ROOYEN, H. 2015. HIV self-testing could "revolutionize testing in South Africa, but it has got to be done properly": perceptions of key stakeholders. *PLoS One*, 10, e0122783.

- MAMAN, S., MBWAMBO, J., HOGAN, N. M., KILONZO, G. P. & SWEAT, M. 2001. Women's barriers to HIV-1 testing and disclosure: challenges for HIV-1 voluntary counselling and testing. *AIDS Care*, 13, 595-603.
- MARUM, E., CONKLING, M., KANYANDA, J., GANDI, S. B., BYARUHANGA, R. & ALWANO, M. G. 2016. HIV Testing Services in Africa: Are They Sustainable? *Curr HIV/AIDS Rep*.
- MARUM, E., MORGAN, G., HIGHTOWER, A., NGARE, C. & TAEGTMEYER, M. 2008. Using mass media campaigns to promote voluntary counseling and HIV-testing services in Kenya. *AIDS*, 22, 2019-24.
- MATOVU, J. K., GRAY, R. H., MAKUMBI, F., WAWER, M. J., SERWADDA, D., KIGOZI, G., SEWANKAMBO, N. K. & NALUGODA, F. 2005. Voluntary HIV counseling and testing acceptance, sexual risk behavior and HIV incidence in Rakai, Uganda. *AIDS*, 19, 503-11.
- MCALISTER, L. A., PERRY, L. C. & PARCEL, G. S. 2008. How individuals, environments and health behaviours interact- Social Cognitive Theory. In: GLANZ, K., RIMER, B. K. & VISWANATH, K. (eds.) *Health Behavior and Health Education : Theory, Research and Practice*. 4 ed. San Francisco, CA, USA: Jossey-Bass.
- MCGARRIGLE, C. A., MERCER, C. H., FENTON, K. A., COPAS, A. J., WELLINGS, K., ERENS, B. & JOHNSON, A. M. 2005. Investigating the relationship between HIV testing and risk behaviour in Britain: National Survey of Sexual Attitudes and Lifestyles 2000. *AIDS*, 19, 77-84.
- MCGRATH, N., NYIRENDA, M., HOSEGOOD, V. & NEWELL, M. L. 2009. Age at first sex in rural South Africa. *Sex Transm Infect*, 85 Suppl 1, i49-55.
- MCOWAN, A., GILLEECE, Y., CHILSLETT, L. & MANDALLIA, S. 2002. Can targeted HIV testing campaigns alter health-seeking behaviour. *AIDS Care*, 14, 385-90.
- MEIBERG, A. E., BOS, A. E., ONYA, H. E. & SCHAALMA, H. P. 2008. Fear of stigmatization as barrier to voluntary HIV counselling and testing in South Africa. *East Afr J Public Health*, 5, 49-54.
- MICHAELS-IGBOKWE, C., LAGARDE, M., CAIRNS, J. & TERRIS-PRESTHOLT, F. 2015. Designing a package of sexual and reproductive health and HIV outreach services to meet the heterogeneous preferences of young people in Malawi: results from a discrete choice experiment. *Health economics review*, 5, 9.
- MILLER, K. S., HENNESSY, M., WENDELL, D. A., WEBBER, M. P. & SCHOENBAUM, E. E. 1996. Behavioral risks for HIV infection associated with HIV-testing decisions. *AIDS Educ Prev*, 8, 394-402.
- MILLS, E. J., BEYRER, C., BIRUNGI, J. & DYBUL, M. R. 2012. Engaging men in prevention and care for HIV/AIDS in Africa. *PLoS Med*, 9, e1001167.
- MINISTRY OF HEALTH, M. & INTERNATIONAL, I. 2016. Lesotho Demographic and Health Survey 2014 Maseru, Lesotho: Ministry of Health and ICF International.
- MMBAGA, E. J., LEONARD, F. & LEYNA, G. H. 2012. Incidence and predictors of adolescent's early sexual debut after three decades of HIV interventions in Tanzania: a time to debut analysis. *PLoS One*, 7, e41700.
- MINISTRY OF HEALTHMOH 2012. Swaziland HIV incidence measurement survey (SHIMS) Mbabane, Kingdom of Swaziland: Ministry of Health.
- MOHLABANE, N., TUTSHANA, B., PELTZER, K. & MWISONGO, A. 2016. Barriers and facilitators associated with HIV testing uptake in South African health facilities offering HIV Counselling and Testing. *Health SA Gesondheid*, 21, 86-95.
- MOHSS 2010. National Strategic Framework for HIV/AIDS response in Namibia 2010/11-2015/16. In: SERVICES, M. O. H. A. S. (ed.). Windhoek: Solitaire Press.
- MOHSS 2014. National strategy and action plan for HIV testing and counselling 2014/2015–2016/2017. In: (MOHSS), M. O. H. A. S. S. (ed.). WindhoeK.
- MINISTRY OF HEALTH SWAZILAND 2013. Annual Joint Review of the Health Sector 2012-2013 Maseru, Lesotho: Ministry of Health and Social Welfare Lesotho.

- MURPHY, D. A., MITCHELL, R., VERMUND, S. H. & FUTTERMAN, D. 2002. Factors associated with HIV testing among HIV-positive and HIV-negative high-risk adolescents: the REACH Study. Reaching for Excellence in Adolescent Care and Health. *Pediatrics*, 110, e36.
- MYHRE, S. L. & FLORA, J. A. 2000. HIV/AIDS communication campaigns: progress and prospects. *J Health Commun*, 5 Suppl, 29-45.
- NAC 2011. National AIDS Strategic Framework, 2011-2015. Lusaka.
- NOAR, S. M., PALMGREEN, P., CHABOT, M., DOBRANSKY, N. & ZIMMERMAN, R. S. 2009. A 10-year systematic review of HIV/AIDS mass communication campaigns: Have we made progress? *J Health Commun*, 14, 15-42.
- NOAR, S. M., ZIMMERMAN, R. S., PALMGREEN, P., CUPP, P. K., FLOYD, B. R. & MEHROTRA, P. 2014. Development and implementation of mass media campaigns to delay sexual initiation among African American and White youth. *J Health Commun*, 19, 152-69.
- NTSEPE, Y., SIMBAYI, L. C., SHISANA, O., REHLE, T., MABASO, M., NCITAKALO, N., DAVIDS, A. & NAIDOO, Y. D. 2014. Perceptions about the acceptability and prevalence of HIV testing and factors influencing them in different communities in South Africa. *SAHARA J*, 11, 138-47.
- OBERMEYER, C. M. & OSBORN, M. 2007. The utilization of testing and counseling for HIV: a review of the social and behavioral evidence. *Am J Public Health*, 97, 1762-74.
- OKUMU, E., JOLLY, D. H., ALSTON, L., ELEY, N. T., LAWS, M. & MACQUEEN, K. M. 2017. Relationship between Human Immunodeficiency Virus (HIV) Knowledge, HIV-Related Stigma, and HIV Testing among Young Black Adults in a Southeastern City. *Front Public Health*, 5, 47.
- OLLEY, B. O., SEEDAT, S. & STEIN, D. J. 2004. Self-disclosure of HIV serostatus in recently diagnosed patients with HIV in South Africa. *Afr J Reprod Health*, 8, 71-6.
- OPPONG ASANTE, K. 2013. HIV/AIDS knowledge and uptake of HIV counselling and testing among undergraduate private university students in Accra, Ghana. *Reprod Health*, 10, 17.
- PARKER, L. A., JOBANPUTRA, K., RUSIKE, L., MAZIBUKO, S., OKELLO, V., KERSCHBERGER, B., JOUQUET, G., CYR, J. & TECK, R. 2015. Feasibility and effectiveness of two community-based HIV testing models in rural Swaziland. *Trop Med Int Health*, 20, 893-902.
- PELTZER, K. & SEOKA, P. 2004. Evaluation of HIV/AIDS prevention intervention messages on a rural sample of South African youth's knowledge, attitudes, beliefs and behaviours over a period of 15 months. *J Child Adolesc Ment Health*, 16, 93-102.
- PETTIFOR, A. E., MACPHAIL, C., BERTOZZI, S. & REES, H. V. 2007. Challenge of evaluating a national HIV prevention programme: the case of loveLife, South Africa. *Sex Transm Infect*, 83 Suppl 1, i70-74.
- ROSENBERG, N. E., WESTREICH, D., BÄRNIGHAUSEN, T., MILLER, W. C., BEHETS, F. & MAMAN, S. 2013a. Assessing the effect of HIV counselling and testing on HIV acquisition among South African youth. *AIDS*, 27.
- ROSENBERG, N. E. A. B., WESTREICH, D. A. C. D., BARNIGHAUSEN, T. B. E., MILLER, W. C. A. F., BEHETS, F. A. F., MAMAN, S. G., NEWELL, M.-L. B. H. & PETTIFOR, A. A. 2013b. Assessing the effect of HIV counselling and testing on HIV acquisition among South African youth. *AIDS*, 27, 2765-2773.
- ROSITCH, A. F., CHERUTICH, P., BRENTLINGER, P., KIARIE, J. N., NDUATI, R. & FARQUHAR, C. 2012. HIV infection and sexual partnerships and behaviour among adolescent girls in Nairobi, Kenya. *Int J STD AIDS*, 23, 468-74.
- ROSS, M. W., CHATTERJEE, N. S. & LEONARD, L. 2004. A community led syphilis prevention programme: outcome data from a controlled trial. *Sexually Transmitted Infections*, 80, 100-104.
- SADC. 2014. *SADC Member States* [Online]. Available: <http://www.sadc.int/member-states/> [Accessed 11 May 2014].
- SAMET, J. H., WINTER, M. R., GRANT, L. & HINGSON, R. 1997. Factors associated with HIV testing among sexually active adolescents: a Massachusetts survey. *Pediatrics*, 100, 371-7.

- SANO, Y., SEDZIAFA, A. P., AMOYAW, J. A., BOATENG, G. O., KUUIRE, V. Z., BOAMAH, S. & KWON, E. 2016. Exploring the linkage between exposure to mass media and HIV testing among married women and men in Ghana. *AIDS Care*, 28, 684-688.
- SHANAUBE, K., SCHAAP, A., CHAILA, M. J., FLOYD, S., MACKWORTH-YOUNG, C., HODDINOTT, G., HAYES, R., FIDLER, S. & AYLES, H. 2017a. Community intervention improves knowledge of HIV status of adolescents in Zambia: findings from HPTN 071-PopART for youth study. *AIDS*, 31 Suppl 3, S221-S232.
- SHANAUBE, K. A., SCHAAP, A. A. C., CHAILA, M. J. A., FLOYD, S. C., MACKWORTH-YOUNG, C. A. C., HODDINOTT, G. B., HAYES, R. C., FIDLER, S. D., AYLES, H. A. C. & ON BEHALF OF THE, H. S. T. 2017b. Community intervention improves knowledge of HIV status of adolescents in Zambia: findings from HPTN 071-PopART for youth study. *AIDS*, 31 Supplement, S221-S232.
- SHISANA, O., REHLE, T., SIMBAYI, L., ZUMA, K., JOOSTE, S. & PILLAY-VAN-WYK, V. E. A. 2009. South African national HIV prevalence, incidence, behaviour and communication survey 2008: a turning tide among teenagers? Cape Town: HSRC Press.
- SHISANA, O., REHLE, T., SIMBAYI, L., ZUMA, K., JOOSTE, S. & ZUNGU, N. E. A. 2014. South African National HIV Prevalence, Incidence and Behavioural Survey, 2012. Pretoria: Human Sciences Research Council.
- SHROUFI, A., GUNGUWO, H., DIXON, M., NYATHI, M., NDEBELE, W., SAINT-SAUVEUR, J. F., TAZIWA, F., FERREYRA, C., VINOLES, M. C. & FERRAND, R. A. 2013. HIV-infected adolescents in southern Africa can achieve good treatment outcomes: results from a retrospective cohort study. *AIDS*, 27, 1971-8.
- SILVESTRE, E., WEINER, R. & HUTCHINSON, P. 2016. Behavior change communication and mobile populations: the evaluation of a cross-border HIV/AIDS communication strategy amongst migrants from Swaziland. *AIDS Care*, 28, 214-20.
- SNYDER, L. B., HAMILTON, M. A., MITCHELL, E. W., KIWANUKA-TONDO, J., FLEMING-MILICI, F. & PROCTOR, D. 2004. A meta-analysis of the effect of mediated health communication campaigns on behavior change in the United States. *J Health Commun*, 9 Suppl 1, 71-96.
- STATA CORP. 2011. *Survey Data Reference Manual*, College Station, TX, Stata Press.
- STATISTICS, L. B. O. 1996. Demographic Statistics. Lesotho, Lesotho: Lesotho Bureau of Statistics (BOS).
- STATOFFICE 2009. Botswana AIDS Impact Survey III (BAIS III), 2008: preliminary results. . Gaborone, Botswana.
- STAVETEIG, S., WANG, S., HEAD, S. K., BRADLEY, S. E. & NYBRO, E. 2013. *Demographic patterns of HIV testing uptake in sub-Saharan Africa*, ICF International Calverton.
- STRAUSS, M., RHODES, B. & GEORGE, G. 2015. A qualitative analysis of the barriers and facilitators of HIV counselling and testing perceived by adolescents in South Africa. *BMC Health Services Research*, 15, 250.
- SWENSON, R. R., RIZZO, C. J., BROWN, L. K., PAYNE, N., DICLEMENTE, R. J., SALAZAR, L. F., VANABLE, P. A., CAREY, M. P., VALOIS, R. F., ROMER, D. & HENNESSY, M. 2009. Prevalence and correlates of HIV testing among sexually active African American adolescents in 4 US cities. *Sex Transm Dis*, 36, 584-91.
- SWENSON, R. R., RIZZO, C. J., BROWN, L. K., VANABLE, P. A., CAREY, M. P., VALOIS, R. F., DICLEMENTE, R. J. & ROMER, D. 2010. HIV knowledge and its contribution to sexual health behaviors of low-income African American adolescents. *J Natl Med Assoc*, 102, 1173-82.
- TAN, C., VAN HANDEL, M., JOHNSON, C. & DIETZ, P. 2016. HIV Testing in Publicly Funded Settings, National Health Interview Survey, 2003-2010. *Public Health Rep*, 131, 137-44.
- TUN, W., OKAL, J., SCHENK, K., ESANTSI, S., MUTALE, F., KYEREMAA, R. K., NGIRABAKUNZI, E., ASIAH, H., MCCLAIN-NHLAPO, C. & MOONO, G. 2016. Limited accessibility to HIV services for persons with disabilities living with HIV in Ghana, Uganda and Zambia. *J Int AIDS Soc*, 19, 20829.
- UNAIDS 2011. UNAIDS Report on the global HIV/AIDS epidemic update. Geneva: UNAIDS.

- UNAIDS 2013. Global Report: UNAIDS Global Report of the AIDS Epidemic. Geneva.
- UNAIDS 2016. Prevention Gap Report. Geneva: UNAIDS.
- UNFPA. 2013. *UNFPA Strategy on Adolescents and Youth* [Online]. New York: UNFPA. Available: <https://www.unfpa.org/sites/default/files/resource-pdf/UNFPA%20Adolescents%20and%20Youth%20Strategy.pdf>.
- UNICEF 2016. For Every Child, End AIDS- Seventh Stocktaking Report. New York: UNICEF.
- UNICEF, U., UNESCO, UNFPA, ILO, WHO AND WORLD BANK 2011. Opportunity in crisis: preventing HIV from early adolescence to early adulthood. New York: UNICEF.
- UNICEF, W., UNAIDS 2012. Young People and HIV/AIDS, Opportunity in Crisis. Washington.
- VYAS, S. & KUMARANAYAKE, L. 2006. Constructing socio-economic status indices: how to use principal components analysis. *Health policy and planning*, 21, 459-468.
- WHO 2007. Guidance on provider-initiated HIV testing and counselling in health facilities. In: ORGANIZATION, W. H. (ed.). Geneva.
- WHO 2013. HIV and adolescents: guidance for HIV testing and counselling and care for adolescents living with HIV: recommendations for a public health approach and considerations for policy-makers and managers. Geneva: WHO.
- WHO, U. A. U. 2011. Global HIV/AIDS response: epidemic update and health sector progress towards universal access – progress report 2011. Geneva: WHO, UNICEF and UNAIDS.
- WILSON, K. S. A., BEIMA-SOFIE, K. M. A., MORAA, H. B., WAGNER, A. D. A. E., MUGO, C. B., MUTITI, P. M. C., WAMALWA, D. B., BUKUSI, D. C., JOHN-STEWART, G. C. A. D. E. F., SLYKER, J. A. A., KOHLER, P. K. A. G. & O'MALLEY, G. A. 2017. "At our age, we would like to do things the way we want: " a qualitative study of adolescent HIV testing services in Kenya. *AIDS*, 31 Supplement, S213-S220.
- WONG, V. J., MURRAY, K. R., PHELPS, B. R., VERMUND, S. H. & MCCARRAHER, D. R. 2017. Adolescents, young people, and the 90-90-90 goals: a call to improve HIV testing and linkage to treatment. *AIDS*, 31 Suppl 3, S191-S194.
- WORTLEY, P. M., CHU, S. Y., DIAZ, T., WARD, J. W., DOYLE, B., DAVIDSON, A. J., CHECKO, P. J., HERR, M., CONTI, L., FANN, S. A. & ET AL. 1995. HIV testing patterns: where, why, and when were persons with AIDS tested for HIV? *AIDS*, 9, 487-92.

Appendix 1. Questionnaire used in the Primary Study (adapted and translated version for Zambia, One of the study countries)

**EXTERNAL EVALUATION OF THE SOUTHERN AFRICAN REGIONAL SOCIAL AND BEHAVIOUR CHANGE
COMMUNICATION PROGRAMME-ONE LOVE**

**Conducted by Tulane University for Soul City/ZCCP and SAfAIDS
May 2012**

EN1) Interview Status (Tick only one):	
Fully Completed	____ - 1
Partially Completed	____ - 2
Refusal or Partially Completed due to Refusal	____ - 3
EN2) Language of Interview (Circle only one):	
Bemba	1
Lunda.....	2
Nyanja	3
Luvale	4
Tonga.....	5
Kaonde	6
Lozi	7
English	8
Other	97
EN3) Enumerator Self Check (field), print first name: _____	
Date: _____	
EN4) Field Supervisor Check (field), print surname: _____	
Date: _____	
EN5) # of missing values found by Field Supervisor: _____	
EN6) Field Supervisor Check of Missing Values, print surname: _____	
Date: _____	
EN7) # of <i>unexpected</i> missing values resolved: _____	
EN8) # of <i>unexpected</i> missing values <u>un</u> resolved: _____	
EN9) Enumerator Review of Missing Values, print surname: _____	

	Date:	_____
Study Manager Coding of Open-Ended Responses:		_____
Question Numbers Coded (indicate which questions):		_____
	Date:	_____
Supervisory Comments:		_____
	Date:	_____
<u>Data Manager</u> Coding of Open-Ended Responses:		_____
	Date:	_____
Questionnaire Entry Completed:		_____
	Date:	_____

[ENUM: Ensure that you obtained household listing consent verbally prior to administering this table]

HOUSEHOLD LISTING TABLE							
[LIST ONLY HOUSEHOLD MEMBERS AND VISITORS WHO SLEPT IN THE HOUSEHOLD THE NIGHT BEFORE]							
ID No	First name of household member	H1. Relationship to HH head	H2. Sex 1=Male 2=Female	H3. Age 999=unknown	H4. Serial number	H5. Selected? 1=Yes 2=No	Remarks
[ONLY INCLUDE THOSE WHO HAVE SLEPT IN THE HOUSEHOLD THE NIGHT BEFORE THE SURVEY] [LIST BY OLDEST TO YOUNGEST]							
Codes for Relationship to Household Head: 1=HH Head 2=Wife/Husband 3=Son/Daughter 4=Son/Daughter in-law 5=Grandchild 6=Parent 7=Parent in-law 8=Brother/Sister 9=Brother/Sister in-law 10=Uncle/Aunt 11=Niece/Nephew by blood 12=Niece/Nephew by marriage 13=Other Relative 14=Adopted/foster/step child 15=Not Related 99=Don't know							
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							

[ENUMERATOR: Same sex interviews ONLY. Respondents must be aged between 15-49]

[ENUM: Ensure that you obtained verbal consent prior to administering this table]. [Ask how many males/females [depending on your sex] live in the household, slept at home last night, and who aged 15-49 are. Write the ages down in the following table:]

Question	First Name	H8 Males	H9 Females
How many males / females aged 15-49 currently live in this household and slept here last night? [Enum: Same sex listing only]		15-49	15-49
Respondent 1: Of these, who is the oldest person in this age range? [age]			
Respondent 2: Who is the next oldest? [age]			
Respondent 3: Who is the next oldest? [age]			
Respondent 4: Who is the next oldest? [age]			
Respondent 5: Who is the next oldest? [age]			
Respondent 6: Who is the next oldest? [age]			
Respondent 7: Who is the next oldest? [age]			
Respondent 8: Who is the next oldest? [age]			
Respondent 9: Who is the next oldest? [age]			
Respondent 10: Who is the next oldest? [age]			
TOTAL NUMBER IN HOUSEHOLD SAME SEX AS YOURSELF AND 15-49 years old			

[If there is more than one household member your same sex and aged 15-49 in the household, as per this above table, you select the respondent for interview based on the following table. Once the respondent has been selected, obtain signed consent for the interview and proceed. If there is only one eligible household member, obtain signed consent for the interview and proceed.]

# of eligible respondents	Last 2 digits of questionnaire number																			
	00-04	05-09	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85-89	90-94	95-99
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2
3	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1
4	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2
5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
6	6	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6	1
7	7	1	2	3	4	5	6	7	1	2	3	4	5	6	7	1	2	3	4	5
8	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1
9	2	3	4	5	6	7	8	9	1	9	3	4	5	6	7	8	9	1	2	3
10	4	5	6	7	8	9	10	1	2	3	4	5	6	7	8	9	10	1	2	3

S1: Enumerator Name:

____ - 1

____ - 2

____ - 3

____ - 4

____ - 5

____ - 6

____ - 7

____ - 8

____ - 9

____ - 10

____ - 17

____ - 18

____ - 19

____ - 20

____ - 21

____ - 22

____ - 23

____ - 24

____ - 25

____ - 26

____ - 11	____ - 27
____ - 12	____ - 28
____ - 13	____ - 29
____ - 14	____ - 30
____ - 15	____ - 31
____ - 16	____ - 32

S2: Supervisor Name:

____ - 1	____ - 5
____ - 2	____ - 6
____ - 3	____ - 7
____ - 4	____ - 8

S3: Field Manager Name:

____ - 1 Yoram Banda	____ - 2 Muunga Maunga
----------------------	------------------------

S4: Province:

____ - 1 Central	____ - 6 Northern
____ - 2 Copperbelt	____ - 7 North-Western
____ - 3 Eastern	____ - 8 Southern
____ - 4 Luapula	____ - 9 Western
____ - 5 Lusaka	____ - 10 Muchinga

S5: Rural, Urban or Border:

____ - 1 Rural	____ - 2 Urban	3 - Border
----------------	----------------	------------

IDENTIFICATION													
													Sup
ID1	Respondent's Name	FIRST NAME ONLY		ID4	HH Number [Enum: HH with male & female interviews must have the same number followed by an A or B depending on the team, while HH's with single sex interviews are numbered numerically without the suffix A or B]								
ID2	Respondent's Sex	1 = Male 2 = Female		ID5	Village Name								
				ID6	EA No:								
INTERVIEW VISITS													
			Sup										Sup
V1 Date first visit [DD/MM] []/[]	V1a Result of first visit 1 = Respondent available → V4 2 = Resp. incapacitated → arrange 3 = Resp not available → second visit			V2 Date second visit [DD/MM] []/[]	V2a. Result of second visit 1 = Respondent available → V4 2 = Resp. incapacitated → arrange 3 = Resp not available → third visit								
V3 Date third visit [DD/MM] []/[]	V3a Result of third visit 1 = Respondent available → V4 2 = Resp. incapacitated → report 3 = Resp not available → to supervisor			V4 Total Interview Time Start time: []/[] []/[] [24 HOUR 4 digit] Finish Time: []/[] []/[] [24 HOUR 4 digit] TOTAL Time (min): _____									

Section 1: Respondent's Background

To begin the survey, I'm going to ask you a few questions about yourself and your background.

QNo	Question	Responses	Codes	Go To	Sup
RB1	How old are you? [Enum: Seek estimate if respondent does not know exact age. If need be, give range] [Sup: code middle of age range given]	_____			
		_____ [Enum: if age estimated, indicate '1' for yes. If not, leave blank]			
RB2	What ethnic group do you belong to?	Bemba Lunda Nyanja Luvale Tonga Kaonde Lozi mixed [specify: _____] other [specify: _____] don't know	1 2 3 4 5 6 7 77 97 99		
RB3	What language do you speak at home, most or all of the time, between family members? [Enum: if more than one languages spoken, indicate the one most commonly spoken in the home by the respondent when speaking with other family members]	Bemba Lunda Nyanja Luvale Tonga Kaonde Lozi English other [specify: _____] don't know	1 2 3 4 5 6 7 8 77 99		
RB4	What is your religious denomination?	no religion Catholic Muslim CCAP Baptist Anglican Pentecostal Seventh Day Adventist Jehovah's Witness Church of Christ Indigenous Christian Lutheran New Apostolic	0 1 2 3 4 5 6 7 8 9 10 11 12		

QNo	Question	Responses	Codes	Go To	Sup
		ZCC United Church of Zambia refused other [specify: _____] don't know	13 14 66 77 99		
RB5	Are you currently in school?	yes no	1 2		
RB5a	What was the highest level of school you attended?	never attended primary secondary tertiary	1 2 3 4	RB6 RB5b RB5b RB5b	
RB5b	[If ever attended school to RB5a] What is the highest (grade/standard/form/year) you completed at that level? [If completed less than one year at that level, record '0']	Grade/standard/form/year: [][]			
RB6	What is your current marital status?	married [inc. traditional marriage] living together/cohabiting divorced separated widowed never married	1 2 3 4 5 6	RB6a RB6a RB6a RB6a RB6a RB7	
RB6a	[If currently or EVER married or currently living together] How many times have you been married? [Enum: if currently married, total includes current marriage]	_____ [Enum: 0 is a valid value if living together and never before married]			
RB6b	[For married males only. Enum: ID2 on page 4 = 1 and RB6 = 1] How many wives do you currently have? [Enum: Includes both state recognised and traditional marriages. Concurrent marriages only.]	_____			
RB7	Do you have any living children?	yes no	1 2	RB7a RB8	
RB7a	[If yes to RB7] How many children do you have?	_____			

Section 2: Economic Situation and Household Ownership of Assets

Next, I would like to ask you some questions about your household and the economic situation.

QNo	Question	Responses	Codes	Go To	Sup
E1	What is the roof of the main dwelling of the household predominantly made of?	plastic/cardboard/other informal thatch/palm leaves palm trunk/bamboo wood iron sheets cement sheets roofing tiles cow dung/sticks other [specify:_____]	1 2 3 4 5 6 7 8 77		
E2	What are the walls of the main dwelling of the household predominantly made of?	grass bamboo with mud poles with mud compacted earth wood planks iron sheets cement blocks unburnt bricks burnt bricks stones with mud other [specify:_____]	1 2 3 4 5 6 7 8 9 10 77		
E3	What is the main source of drinking water for members of your household?	indoor plumbing tap in yard/plot community waterpoint borehole protected well in yard/plot protected public well open well in yard/plot open public well spring river/stream lake/dam/pond indoor plumbing in neighbour's house tap in neighbour's yard/plot open well in neighbour's yard/plot protected well in neighbour's yard/plot other [specify:_____]	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 77		
E4	What kind of toilet facility do members of your household usually use? [Enum: refers to adults and other household	own flush toilet neighbour's flush toilet own ventilated improved pit	1 2 3	E4a E5 E4a	

QNo	Question	Responses	Codes	Go To	Sup
	members above the age of 3. Facility can be on own property, neighbour's, or public, as it refers to use, rather than ownership]	(VIP) latrine neighbour's VIP latrine own pit latrine with slab neighbour's pit latrine with slab own pit latrine without slab neighbour's pit latrine without slab public flush toilet public pit latrine no facility/bush/field bucket other [specify: _____]	4 5 6 7 8 9 10 11 12 77	E5 E4a E5 E4a E5 E5 E5 E5 E5 E5	
E4a	[If 1, 3, 5 or 7 to E4] Do you share this toilet facility with other households?	yes no do not know	1 2 99		
E5	What type of energy/fuel does your household mainly use for cooking?	electricity LPG/natural gas biogas paraffin/kerosene coal charcoal firewood straw/grass animal dung solar other [specify: _____] do not know	1 2 3 4 5 6 7 8 9 10 77 99		
E6	Could you please tell me whether your household has any of the following in working order?				
E6a	paraffin lamp	yes no	1 2		
E6b	radio	yes no	1 2		
E6c	television	yes no	1 2		
E6d	phone (landline)	yes no	1 2		
E6e	refrigerator	yes no	1 2		
E6f	bed with mattress	yes no	1 2		
E6g	electricity	yes no	1 2		
E7	Does any member of your household own any of the following in working order?				

QNo	Question	Responses	Codes	Go To	Sup
E7a	bicycle	yes no	1 2		
E7b	motorcycle/scooter	yes no	1 2		
E7c	car/truck	yes no	1 2		
E7d	mobile phone	yes no	1 2		
E8	In the past three years, has anyone in your household had a job with a monthly salary?	yes no do not know	1 2 99		
E8a	Over the past three years, has anyone living in this household, or living away but belonging to this household, contributed income to this household on a regular basis? By regular we mean contributing income at least four times a year or more on average over the past three years?	yes no do not know	1 2 99	E8ai C1 C1	
E8ai	[If yes to E8a] How many people would you say contributed on this basis, on average, over the past three years?	<u> </u> do not know	99		

Section 4: Exposure to Mass Media & Messages

Next, I'm going to ask some questions about your typical exposure to different types of mass media including, radio, TV, the internet and printed materials.

QNo	Question	Responses	Codes	Go To	Sup
EM1	In a week, how many days do you listen to the radio? [Enum: must be a number between 0-7]	<u> </u> [Enum: 0 is a valid value] do not know/cannot say	99		
EM2	In a week, how many days do you watch television? [Enum: must be a number between 0-7]	<u> </u> [Enum: 0 is a valid value] do not know/cannot say	99		
EM3	In a week, how many days do you read a newspaper or have parts of a newspaper	<u> </u>			

QNo	Question	Responses	Codes	Go To	Sup
	read to you? [Enum: must be a number between 0-7]	[Enum: 0 is a valid value] do not know/cannot say	99		
EM4	In a month, how often do you read magazines or have them read to you? Would you say 'never', 'seldom', or 'often/always'?	never seldom often/always do not know/cannot say	1 2 3 99		
EM5	In a week, how many days do you use the internet, either using a computer or a cell phone? [Enum: must be a number between 0-7]	_____ [Enum: 0 is a valid value] do not know/cannot say	99		
EM6	In the past twelve months, from which of the following sources, if any, have you received information on HIV&AIDS:				
EM6a	Radio	yes no do not know/cannot say not applicable – no access	1 2 99 88		
EM6b	Television	yes no do not know/cannot say not applicable – no access	1 2 99 88		
EM6c	Newspaper	yes no do not know/cannot say not applicable – no access	1 2 99 88		
EM6d	other print materials (such as booklets, pamphlets, books, posters, billboards)	yes no do not know/cannot say not applicable – no access	1 2 99 88		
EM6e	health worker/health facility	yes no do not know/cannot say not applicable – no access	1 2 99 88		
EM6f	community-based volunteer	yes no do not know/cannot say not applicable – no access	1 2 99 88		
EM6g	workshop/training/seminar	yes no do not know/cannot say not applicable – no access	1 2 99 88		
EM6h	community meeting	yes no do not know/cannot say not applicable – no access	1 2 99 88		
EM6j	NGO	yes no do not know/cannot say not applicable – no access	1 2 99 88		
EM6k	Internet	yes	1		

QNo	Question	Responses	Codes	Go To	Sup
		no do not know/cannot say not applicable – no access	2 99 88		
EM6l	friends/peers	yes no do not know/cannot say not applicable – no access	1 2 99 88		
EM6m	school/on campus	yes no do not know/cannot say not applicable – no access	1 2 99 88		
EM6n	religious leader	yes no do not know/cannot say not applicable – no access	1 2 99 88		
EM6o	cell phone	yes no do not know/cannot say not applicable – no access	1 2 99 88		
EM6p	drama group	yes no do not know/cannot say not applicable – no access	1 2 99 88		

Section 5: Personal Context

Section 6: HIV/AIDS Knowledge and Awareness

Next, I would like to ask you a series of questions about your understanding of HIV&AIDS. Please respond to each indicating whether you think that the statement is true or false.

QNo	Question	Responses	Codes	Go To	Sup
For this first section, please respond to each statement indicating whether you think that the statement is true or false.					
K1	If one spouse/cohabiting sexual partner is HIV positive, certainly the other is HIV positive as well	<div> <div>true</div> <div>false</div> <div>do not know</div> </div>	<div>1</div> <div>2</div> <div>99</div>		
K2	Sexually transmitted infections decreases the chances of infection with the HIV virus	<div> <div>true</div> <div>false</div> <div>do not know</div> </div>	<div>1</div> <div>2</div> <div>99</div>		
K3	An HIV-infected person on anti-retroviral therapy can still transmit HIV to other people	<div> <div>true</div> <div>false</div> <div>do not know</div> </div>	<div>1</div> <div>2</div> <div>99</div>		
K4	While on anti-retroviral therapy, a person living with HIV does not need to use a condom because they cannot transmit HIV.	<div> <div>true</div> <div>false</div> <div>do not know</div> </div>	<div>1</div> <div>2</div> <div>99</div>		
K5	Having more than one sexual partner at the same time makes it more likely that you will contract HIV.	<div> <div>true</div> <div>false</div> <div>do not know</div> </div>	<div>1</div> <div>2</div> <div>99</div>		
K6	TB (Tuberculosis) cannot be cured if a person is HIV positive	<div> <div>true</div> <div>false</div> <div>do not know</div> </div>	<div>1</div> <div>2</div> <div>99</div>		
K7	A woman must be tested for HIV if she falls pregnant and has not been tested	<div> <div>true</div> <div>false</div> <div>do not know</div> </div>	<div>1</div> <div>2</div> <div>99</div>		
For this next question, please respond to each question with a 'yes' or 'no' response.					
K8	Can a woman infected with the HIV virus take anti-retroviral drugs to prevent her baby from becoming infected with the HIV virus ...				
K8a	during pregnancy	<div> <div>yes</div> <div>no</div> <div>do not know</div> </div>	<div>1</div> <div>2</div> <div>99</div>		
K8b	during childbirth	<div> <div>yes</div> <div>no</div> <div>do not know</div> </div>	<div>1</div> <div>2</div> <div>99</div>		
K8c	during breastfeeding	<div> <div>yes</div> <div>no</div> <div>do not know</div> </div>	<div>1</div> <div>2</div> <div>99</div>		
K9	How long do people on anti-retroviral	do not know what ART is	1		

QNo	Question	Responses	Codes	Go To	Sup
	therapy (ART) have to stay on treatment? [Enum: Circle only one response]	for the rest of their lives as long as they want until they feel better Other [specify: _____] do not know/cannot say	2 3 4 77 99		
K10	Is the risk of contracting the AIDS virus increased, decreased, or does it remain the same for a circumcised man compared to an uncircumcised man?	increased decreased remains the same do not know/cannot say	1 2 3 99		
K11	If you or a member of your family has a question about HIV&AIDS, do you know where you can get this information?	yes no do not know/cannot say	1 2 99		

Section 7: HIV/AIDS Subjective Norms, Attitudes, Self-efficacy and Perception of Risk

Now I just want to read you a few statements about how you and people in your community feel about HIV/AIDS. There are no right or wrong answers to these statements. Please tell me whether you agree or disagree with the statement and, if so, whether you strongly agree, or just somewhat agree.

QNo	Question	Responses	Codes	Go To	Sup
A1	These days, most married men are faithful to their wives	strongly agree somewhat agree somewhat disagree strongly disagree do not know/not give opinion	1 2 3 4 99		
A2	I am confident that I can resist the temptation of having sex with anyone else besides my main sexual partner	strongly agree somewhat agree somewhat disagree strongly disagree do not know/not give opinion	1 2 3 4 99		
A3	I need someone else to fill the 'sexual gap' in case I break up with my main partner	strongly agree somewhat agree somewhat disagree strongly disagree do not know/not give opinion	1 2 3 4 99		
A4	Your sex life can improve if you communicate well with your sexual partner. By 'communicate well', I mean that you openly	strongly agree somewhat agree somewhat disagree	1 2 3		

QNo	Question	Responses	Codes	Go To	Sup
	discuss sexual issues with each other	strongly disagree do not know/not give opinion	4 99		
A5	Men who have sex with many women are 'real men'	strongly agree somewhat agree somewhat disagree strongly disagree do not know/not give opinion	1 2 3 4 99		
A6	Most of my friends feel that men have the right to have sex with a female if they buy them gifts	strongly agree somewhat agree somewhat disagree strongly disagree do not know/not give opinion	1 2 3 4 99		
A7	When you learn that you are HIV positive, your life is over	strongly agree somewhat agree somewhat disagree strongly disagree do not know/not give opinion	1 2 3 4 99		
A8	Telling people that you are HIV positive doesn't help anything	strongly agree somewhat agree somewhat disagree strongly disagree do not know/not give opinion	1 2 3 4 99		
A9	HIV&AIDS is punishment for sinning	strongly agree somewhat agree somewhat disagree strongly disagree do not know/not give opinion	1 2 3 4 99		
A10	It is important to know your HIV status	strongly agree somewhat agree somewhat disagree strongly disagree do not know/not give opinion	1 2 3 4 99		
A11	Only promiscuous people get HIV.	strongly agree somewhat agree somewhat disagree strongly disagree do not know/not give opinion	1 2 3 4 99		
A12	The only way to know that you are HIV positive is through a blood test.	strongly agree somewhat agree somewhat disagree strongly disagree do not know/not give opinion	1 2 3 4 99		
We will now shift to some questions about how concerned you are about HIV&AIDS. This does not use the agreement scale we just used.					
A13	How worried are you about becoming infected with the AIDS virus?	very worried somewhat worried	1 2	A13a A13a	

QNo	Question	Responses	Codes	Go To	Sup
		not at all worried I'm already HIV+/have AIDS refused to answer do not know/cannot say	3 8 66 99	A13b G1 A14 A14	
A13a	[If 'very' or 'somewhat' worried] Why are you worried about the possibility of being infected with the HIV virus? [Enum: Circle all that apply] [Enum: Skip A13b and go to A14]	do not always use condoms have multiple partners have sex with casual partners partner not always faithful it is fate, we cannot do anything partner likely/certainly has the HIV virus blood contact negligence at medical institutions refused to answer [circle by itself] other [specify: _____] do not know [circle by itself]	A B C D E F G H 66 77 99		A B C D E F G H 66 77 99
A13b	[If 'not at all worried' about infection] Why are you not worried about the possibility of being infected with HIV? [Enum: Circle all that apply]	never had sex currently abstaining from sex always use condoms have one faithful sexual partner I pray avoid sex with those who look sick avoid sex before testing for HIV virus avoid contact with blood I'm already HIV+/have AIDS both have been tested for HIV I can get ARV treatment I am circumcised refused to answer [circle by itself] do not know [circle by itself] other [specify: _____]	A B C D E F G H I J K L 66 99 77		A B C D E F G H I J K L 66 99 77
A14	What is the likelihood that you are already infected with HIV? Is there 'no likelihood', only a 'low likelihood', a 'medium likelihood', or a 'high likelihood'? Or do you not know?	no likelihood low likelihood medium likelihood high likelihood refused to answer	1 2 3 4 66		

QNo	Question	Responses	Codes	Go To	Sup
		do not know	99		

[IF THE RESPONDENT HAS NOT HAD SEX IN THE LAST **12 MONTHS** i.e. AFTER PROBING, THE RESPONSES TO B2 IS ZERO, SKIP TO B24]

I would like to ask about your 3 most recent sexual partners ***in the past 12 months***, including your current partner, if you currently have one. By this, I mean the partner you have had sexual intercourse with most recently, the partner you most recently had intercourse with before that, etc...All the information that you give me is completely confidential, neither your partner nor anybody else will see this information. Remember that you have the right not to answer any question, if you are not comfortable doing so. Could you please give me names or initials of each of your 3 most recent partners? This can be a nickname or a fictitious name and does not have to be their real name. It is just needed so I can refer to each of them when I am asking you questions.

[ENUM: RETURN TO B11 FOR EACH SEXUAL PARTNERS WHEN YOU REACH QB21 FOR THE PREVIOUS ONE]

QNo	Question	Responses	Codes	Go To	Sup
We would now like to shift away from the partner-specific questions to a few other issues. We start with a few questions specific to your spouse/regular partner (ie. one with whom the person is married or cohabiting).					
B24	Have you ever gone for an HIV test?	yes no refused to answer do not know/cannot say	1 2 66 99	B24a B25 B25 B25	
B24a	[If yes to B24] How many times have you been tested for HIV?	_____ [Enum: if uncertain, get range] [Sup: if range, choose middle value] refused to answer do not remember/cannot say	66 99		
B24b	[If yes to B24] How long ago was your last HIV test?	< 3 months ago 3-5 months ago 6-11 months ago 1+ years ago refused to answer do not remember/cannot say	1 2 3 4 66 99		
B24c	[If yes to B24] I'm not going to ask you your results, but did you receive the results of the most recent HIV test?	yes no refused to answer do not know/cannot say	1 2 66 99	B24ci B25 B25 B25	
B24ci	[If yes to B24c] Did you discuss the results of your test with anyone?	yes no refused to answer do not know/cannot say	1 2 66 99	B24cii B25 B25 B25	
B24cii	[If yes to B24ci] With whom did you discuss the results of the test? [Enum: circle all that apply]	sex partner family member friend health care worker co-workers other [specify: _____]	A B C D E 77		A B C D E 77
B25	[If married or cohabiting] Over the past year, how often did you speak with your spouse/regular cohabiting partner about HIV&AIDS, if at all? Would you say you've spoken 'very often', 'sometimes', 'rarely', or 'never'?	very often sometimes rarely never refused to answer do not know/cannot say	1 2 3 4 66 99		
B26	Do you have/are you caring for any children aged 6-17?	yes no	1 2	B26a B27	
B26a	[If yes to B26] Over the past year, how often, if at all, have you spoken with any or all of these	very often sometimes rarely	1 2 3		

	children about HIV&AIDS? Would you say you've spoken 'very often', 'sometimes', 'rarely', or 'never'?	never refused to answer do not know/cannot say	4 66 99		
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Section 10: Exposure to ZCCP (Kwatu), SAfAIDS, & Other HIV/AIDS Interventions

The next set of questions refers to a number of HIV/AIDS prevention programmes that have been implemented in Zambia.

QNo	Question	Responses	Codes	Go To	Sup
ZCCP / Kwatu Exposure					
PE1	<p>Please complete the following slogan:</p> <p>“One Love ...”</p> <p>(SPONTANEOUS RECALL)</p> <p>[INTERVIEWER: CIRCLE ‘CORRECT’ IF THE RESPONDENT REPLIES ONE OF THE FOLLOWING:</p> <ul style="list-style-type: none"> - One Love, For Life - “OneLove”, Kwasila - “OneLove”, Ili Che 	<p>correct</p> <p>incorrect</p> <p>refused to answer</p> <p>indicated ‘do not know’</p>	<p>1</p> <p>2</p> <p>66</p> <p>99</p>	<p>PE1a</p> <p>PE1a</p> <p>PE2</p> <p>PE1a</p>	
PE1a	<p>[INTERVIEWER: IF RESPONDENT DOES NOT RECALL SLOGAN OR ANSWERS PE1 INCORRECTLY, ASK PE1a, PE1b & PE1c]</p> <p>Have you heard or seen the following slogan:</p> <ul style="list-style-type: none"> - One Love, For Life 	<p>yes</p> <p>no</p> <p>‘do not know’</p>	<p>1</p> <p>2</p> <p>99</p>		
PE1b	<ul style="list-style-type: none"> - “OneLove”, Kwasila 	<p>Yes</p> <p>No</p> <p>‘do not know’</p>	<p>1</p> <p>2</p> <p>99</p>		
PE1c	<ul style="list-style-type: none"> - “OneLove”, Ili Che 	<p>Yes</p> <p>No</p> <p>‘do not know’</p>	<p>1</p> <p>2</p> <p>99</p>		
PE2	<p>Have you heard of the One Love Kwasila campaign?</p>	<p>Yes</p> <p>no</p> <p>do not know/cannot say</p>	<p>1</p> <p>2</p> <p>99</p>		
PE3	<p>[Enum: show them the One Love Kwasila logo]</p> <p>Have you ever seen this logo?</p>	<p>yes</p> <p>no</p> <p>do not know/cannot say</p>	<p>1</p> <p>2</p> <p>99</p>		
PE3a	<p>Can you complete the following slogan:</p>	<p>Connections to HIV, “OneLove”</p> <p>Kwasila Sexual network,</p>	<p>1</p> <p>2</p>		

QNo	Question	Responses	Codes	Go To	Sup
	<p>“Cut your...”</p> <p>[DO NOT READ RESPONSES but response 3 would be the correct one]</p>	<p>“OneLove” Kwasila Side plate, “OneLove” Kwasila mentioned something else do not know/cannot say</p>	<p>3</p> <p>4</p> <p>99</p>		
PE4	<p>[ONLY ask if aware of One Love for PE1, PE1a, PE2 or PE3, or PE3a. If not aware, skip to PE7]</p> <p>Is One Love a Zambia campaign only, or is it also in other countries as well?</p>	<p>Zambia only</p> <p>also in other countries</p> <p>do not know/cannot say</p>	<p>1</p> <p>2</p> <p>99</p>	<p>PE5</p> <p>PE4a</p> <p>PE5</p>	
PE4a	<p>[If ‘also in other countries’ to PE4]</p> <p>In which other countries is the One Love campaign implemented?</p> <p>[Circle all that apply] [Enum: respondent cannot state their own country (Zambia) here]</p>	<p>Botswana</p> <p>Lesotho</p> <p>Malawi</p> <p>Mozambique</p> <p>Namibia</p> <p>South Africa</p> <p>Swaziland</p> <p>Tanzania</p> <p>Zambia</p> <p>Zimbabwe</p> <p>other</p> <p>[specify:_____]</p> <p>don’t know [circle by itself]</p>	<p>A</p> <p>B</p> <p>C</p> <p>D</p> <p>E</p> <p>F</p> <p>G</p> <p>H</p> <p>I</p> <p>J</p> <p>77</p> <p>99</p>	<p>PE4b</p> <p>PE4b</p> <p>PE4b</p> <p>PE4b</p> <p>PE4b</p> <p>PE4b</p> <p>PE4b</p> <p>PE4b</p> <p>PE4b</p> <p>PE4b</p> <p>PE5</p>	<p>A</p> <p>B</p> <p>C</p> <p>D</p> <p>E</p> <p>F</p> <p>G</p> <p>H</p> <p>I</p> <p>J</p> <p>77</p> <p>99</p>
PE4b	<p>[If they gave an answer to PE4a]</p> <p>How do you know this?</p> <p>[Circle all that apply]</p>	<p>traveled to other country</p> <p>TV</p> <p>radio</p> <p>print media</p> <p>family/friends</p> <p>other</p> <p>[specify:_____]</p> <p>don’t know [circle by itself]</p>	<p>A</p> <p>B</p> <p>C</p> <p>D</p> <p>E</p> <p>77</p> <p>99</p>		<p>A</p> <p>B</p> <p>C</p> <p>D</p> <p>E</p> <p>77</p> <p>99</p>
PE5	<p>[Enum: ask only if travelled outside of Zambia. Check C2 on page 8. If have not travelled outside Zambia, skip to PE6]</p> <p>The logo we discussed earlier, this one [Enum: show One Love logo again], did you see this same logo while you were travelling outside of Zambia?</p>	<p>yes</p> <p>no</p> <p>do not know/cannot say</p>	<p>1</p> <p>2</p> <p>99</p>	<p>PE5a</p> <p>PE6</p> <p>PE6</p>	
PE5a	<p>[If yes to PE5]</p> <p>In which country/countries outside Zambia did you see a logo like this one?</p> <p>[ENUM: SHOW ONE LOVE LOGO]</p> <p>[Circle all that apply]</p>	<p>Botswana</p> <p>Lesotho</p> <p>Malawi</p> <p>Mozambique</p> <p>Namibia</p> <p>South Africa</p> <p>Swaziland</p> <p>Tanzania</p>	<p>A</p> <p>B</p> <p>C</p> <p>D</p> <p>E</p> <p>F</p> <p>G</p> <p>H</p>		<p>A</p> <p>B</p> <p>C</p> <p>D</p> <p>E</p> <p>F</p> <p>G</p> <p>H</p> <p>I</p> <p>J</p>

QNo	Question	Responses	Codes	Go To	Sup
	[Enum: respondent cannot state their own country (Zambia) here]	Zambia Zimbabwe other [specify: _____] don't know [circle by itself]	I J 77 99		77 99
PE5b	Where did you see this logo or hear about One Love while travelling outside of Zambia? Did you see the logo through any of the following:				
PE5b1	Television	yes no do not know/cannot remember	1 2 99		
PE5b2	Radio	yes no do not know/cannot remember	1 2 99		
PE5b3	Booklet	yes no do not know/cannot remember	1 2 99		
PE5b4	Billboard	yes no do not know/cannot remember	1 2 99		
PE5b5	Poster	yes no do not know/cannot remember	1 2 99		
PE5b6	other [specify: _____]				
RADIO PROGRAMMES					
PE6	Have you ever listened to any of the following programmes on the radio?				
PE6a	<i>Changing the Rhythmn of the Drum</i>	yes no do not know/cannot remember	1 2 99	PE6a1 PE6b PE6b	
PE6a1	[If yes to PE6a] How many episodes of <i>Changing the Rhythmn of the Drum</i> , in total, would you estimate you have heard over the past year?	_____ [Enum: 0 is a valid value] refused to answer do not know/cannot say	66 99		
PE6b	<i>Kukingya Mvumino Yamaoma</i>	yes no do not know/cannot remember	1 2 99	PE6b1 PE6c PE6c	
PE6b1	[If yes to PE6b] How many episodes of <i>Kukingya Mvumino Yamaoma</i> , in total, would you estimate you have heard over the past year?	_____ [Enum: 0 is a valid value] refused to answer do not know/cannot say	66 99		
PE6c	<i>Bitter Sweet</i>	yes no do not know/cannot remember	1 2 99	PE6c1 PE6d PE6d	

QNo	Question	Responses	Codes	Go To	Sup
PE6c1	[If yes to PE6c] How many episodes of <i>Bitter Sweet</i> , in total, would you estimate you have heard over the past year?	_____ [Enum: 0 is a valid value] refused to answer do not know/cannot say	66 99		
PE6d	"Akafupa Utemenwe" in Bemba	yes no do not know/cannot remember	1 2 99	PE6d1 PE7 PE7	
PE6d1	[If yes to PE6d] How many episodes of <i>Akafupa Utemenwe</i> , in total, would you estimate you have heard over the past year?	_____ [Enum: 0 is a valid value] refused to answer do not know/cannot say	66 99		
PE7	[If yes to PE6a, PE6b, PE6c, or PE6d] Have you ever spoken with anyone about anything you heard about the One Love campaign on the radio?	yes no do not know/cannot say	1 2 99	PE7a PE8 PE8	
PE7a	[If yes to PE7] To whom have you talked? [Circle all that apply]	sexual partner(s)/spouse friend(s)/peers my children others in the family support group members community members community based volunteer expert at clinic Other [specify: _____] do not know [circle by itself]	A B C D E F G H 77 99		A B C D E F G H 77 99
BOOKLETS					
PE8	Which of the following booklets have you read, if any: [ENUM: SHOW BOOKLET COVERS]				
PE8a	You and your Relationship...	yes no do not know/cannot say	1 2 99		
PE8b	When Men and Women Run Together	yes no do not know/cannot say	1 2 99		
PE8c	You Haven't Met Joe...	yes no do not know/cannot say	1 2 99		
PE9	[If any publication mentioned under PE8a-	yes	1	PE9a	

QNo	Question	Responses	Codes	Go To	Sup
	PE8c] Have you ever spoken with anyone about the things that you read in any of these booklets?	no do not know/cannot say	2 99	PE10b PE10b	
PE9a	[If yes to PE9] To whom have you spoken about the things that you read in the booklet? [Circle all that apply]	sexual partner(s)/spouse friend(s)/peers my children others in the family support group members community members other [specify: _____] do not know [circle by itself]	A B C D E F 77 99		A B C D E F 77 99
MEET JOE					
PE10b	Have you seen or heard anything about “You haven’t met Joe” or “Meet Joe” while you were travelling outside of Zambia? [Enum: show them the “You haven’t met Joe” visual cue]	yes no not applicable (did not travel out) do not know	1 2 88 99	PE10bi PE12 PE12 PE12	
PE10bi	[If yes to PE10b] In which country/countries outside of Zambia did you see or hear about “You haven’t met Joe” or “Meet Joe”? [Circle all that apply] [Enum: respondent cannot state their own country (Zambia) here] [Sup: ensure entry of letter in corresponding cell in same row for each applicable response]	Malawi Botswana Lesotho Mozambique Namibia South Africa Swaziland Tanzania Zambia Zimbabwe not know country [Circle by itself]	A B C D E F G H I J 99		A B C D E F G H I J 99
PE11	Where did you see or hear about ‘You haven’t met Joe’ or ‘Meet Joe’ while travelling outside of Zambia?				
PE11a	Television	yes no do not know/cannot remember	1 2 99		
PE11b	Radio	yes no do not know/cannot remember	1 2 99		
PE11c	Booklet	yes no do not know/cannot remember	1 2 99		
PE11d	Billboard	yes no do not know/cannot remember	1 2 99		

QNo	Question	Responses	Codes	Go To	Sup
PE11e	Poster	yes no do not know/cannot remember	1 2 99		
PE11f	other [specify: _____]				
LOVE STORIES FILM SERIES					
PE12	Have you watched “Love Stories in a Time of HIV and AIDS”, a series of films from different countries in Southern Africa? [PROCEED WITH FILM NAMES, EVEN IF THEY SAY ‘NO’ OR ‘DK’]	yes no do not know/cannot remember [PROCEED WITH FILM NAMES, EVEN IF THEY SAY ‘NO’ OR ‘DK’]	1 2 99		
PE12a	When the Music Stops (a Zambian film about a church deacon cheating on his wife)	yes no do not know/cannot remember	1 2 99		
PE12b	Big House, Small House (a Zimbabwean story about a man taking on a second wife)	yes no do not know/cannot remember	1 2 99		
PE12c	Travelling Man (a story from Lesotho about a man traveling around Lesotho looking for the girl who infected him)	yes no do not know/cannot remember	1 2 99		
PE12d	After the Honeymoon (A Malawian story on the problems that a newlywed couple faces)	yes no do not know/cannot remember	1 2 99		
PE12e	Chaguo – The Choice (a story from Tanzania about how a couple is affected by the influence that the man experiences from his friends)	yes no do not know/cannot remember	1 2 99		
PE12f	Umshato – The Wedding (a South African story on a bride discovering on her wedding day that her husband to be has not been faithful to her)	yes no do not know/cannot remember	1 2 99		
PE12g	Bloodlines (a story from Swaziland about a father who realises that he is unable to save his son’s life because of his own past behaviour)	yes no do not know/cannot remember	1 2 99		
PE12h	Second Chances (a story from Botswana about a university student who gets involved in a risky affair with an older man)	yes no do not know/cannot remember	1 2 99		
PE12j	Against the Odds (a Namibian story on how an orphaned girl experiences the advances of an older man)	yes no do not know/cannot remember	1 2 99		
PE12k	Betrayed (a Mozambican film about a couple who decide to be honest about the secret affairs they have been having)	yes no do not know/cannot remember	1 2 99		
PE13	If any film mentioned above i.e. response 1 to any of PE12 - PE12k]	yes no	1 2	PE13a PE14	

QNo	Question	Responses	Codes	Go To	Sup
	Have you ever spoken with anyone about the things that you saw in any of these films?	do not know/cannot say	99	PE14	
PE13a	[If yes to PE13] To whom have you spoken about the things that you saw in these films? [circle all that apply]	sexual partner(s)/spouse friend(s)/peers my children others in the family support group members community members Other [specify: _____] do not know [circle by itself]	A B C D E F 77 99		A B C D E F 77 99
UNTOLD STORIES DRAMA SERIES					
PE14	Have you watched “Untold Stories”, a series of dramas from different countries in southern Africa? [ENUM: PROCEED WITH FILM NAMES, EVEN IF THEY SAY ‘NO’ OR ‘DK’]	yes no do not know/cannot remember [ENUM; PROCEED WITH FILM NAMES, EVEN IF THEY SAY ‘NO’ OR ‘DK’]	1 2 99		
PE14a	Rebel Rhymes (Botswana story about an angry orphaned young Motswana singer in search of fame)	yes no do not know/cannot remember	1 2 99		
PE14b	Mapule’s Choice (Lesotho film on secrets and shame)	yes no do not know/cannot remember	1 2 99		
PE14c	Secrets and Lies (South African film about love and deception)	yes no do not know/cannot remember	1 2 99		
PE14d	The Test (Malawian film about a young man forced to overcome fears about HIV&AIDS)	yes no do not know/cannot remember	1 2 99		
PE14e	Tempestade (Mozambican film on domestic violence)	yes no do not know/cannot remember	1 2 99		
PE14f	Ulendo wa Rose (Zambian film on love and healing)	yes no do not know/cannot remember	1 2 99		
PE14g	Batjele (Swaziland film on a sexually abusive teacher and pupil relationships)	yes no do not know/cannot remember	1 2 99		
PE14h	Chipo’s Promise (Zimbabwean film about	yes	1		

QNo	Question	Responses	Codes	Go To	Sup
	the plight of orphans)	no do not know/cannot remember	2 99		
PE14j	Between Friends (Namibian film on sex and friendships)	yes no do not know/cannot remember	1 2 99		
KWATU					
PE15	Have you ever heard of “Kwatu”?	yes no do not know/cannot remember	1 2 99	PE15a PE16 PE16	
PE15a	[If yes to PE15] When did you hear about Kwatu for the first time? Within the past year, between 1-2 years ago, or 3 or more years ago?	within the past year between 1-2 years ago 3+ years ago do not know/cannot remember	1 2 3 99		
PE16	Have you seen this logo? [Enum: show Kwatu logo]	yes no do not know/cannot remember	1 2 99	PE16a PE17 PE17	
PE16a	[If yes to PE16] When did you see this logo for the first time? Within the past year, between 1-2 years ago, or 3 or more years ago?	within the past year between 1-2 years ago 3+ years ago do not know/cannot remember	1 2 3 99		
PE17	Have you read any of the following booklets? [Enum: read out the name and show the booklet covers]				
PE17a	“Kwatu Choose Life” [Enum: show booklet cover]	yes no do not know/cannot remember	1 2 99		
PE17b	“Kwatu Family Care for Mother and Child” [Enum: show booklet cover]	yes no do not know/cannot remember	1 2 99		
PE17c	“Kwatu Children and HIV” [Enum: show booklet cover]	yes no do not know/cannot remember	1 2 99		
PE17d	“Kwatu Alcohol and You” [Enum: show booklet cover]	yes no do not know/cannot remember	1 2 99		
PE17e	“Kwatu Men’s Health Male Circumcision” [Enum: show booklet cover]	yes no do not know/cannot remember	1 2 99		
KWATU RADIO DRAMAS					
PE18	Have you ever listened to a Kwatu drama on the radio (in Tonga, Nyanja, English, or Lunda)?	yes no do not know/cannot remember	1 2 99	PE18a PE19 PE19	
PE18a	[If yes to PE18] How many episodes of the Kwatu radio drama, in total, would you estimate you have heard over the past year?	_____ [Enum: 0 is a valid value]	66		

QNo	Question	Responses	Codes	Go To	Sup
		refused to answer do not know/cannot say	99		
PE19	Have you ever listened to “ <i>Musipili wa Liseli</i> ” in Lozi	yes no do not know/cannot remember	1 2 99	PE19a PE20 PE20	
PE19a	[If yes to PE19] How many episodes of “ <i>Musipili wa Liseli</i> ” in total, would you estimate you have heard over the past year?	_____ [Enum: 0 is a valid value] refused to answer do not know/cannot say	66 99		
PE20	Have you ever listened to “ <i>Liseli's Journey</i> ” in English	yes no do not know/cannot remember	1 2 99	PE20a PE21 PE21	
PE20a	[If yes to PE20] How many episodes of “ <i>Liseli's Journey</i> ” in total, would you estimate you have heard over the past year?	_____ [Enum: 0 is a valid value] refused to answer do not know/cannot say	66 99		
PE21	[If yes to PE18, PE19, or PE20] When did you first listen to any of these Kwatu dramas on the radio? Within the past year, between 1-2 years ago, or 3 or more years ago?	within the past year between 1-2 years ago 3+ years ago do not know/cannot remember	1 2 3 99		
KWATU AND OTHER TELEVISION SHOWS					
PE22	Have you ever watched a Kwatu television show?	yes no do not know/cannot remember	1 2 99	PE22a PE23 PE23	
PE22a	[If yes to PE22] When did you first watch a Kwatu television show? Within the past year, between 1-2 years ago, or 3 or more years ago?	within the past year between 1-2 years ago 3+ years ago do not know/cannot remember	1 2 3 99		
PE23	Have you ever watched the “OneLove” talk show(s)?	yes no do not know/cannot remember	1 2 99	PE23a PE24 PE24	
PE23a	[If yes to PE23] Have you ever spoken with anyone about the things you watched on the “OneLove” talk show?	yes no do not know/cannot say	1 2 99	PE23b PE24 PE24	
PE23b	[If yes to PE23] To whom have you spoken about the things that you watched on the “OneLove” talk show?	sexual partner(s)/spouse friend(s)/peers my children others in the family support group members community members	A B C D E F F		A B C D E F G H

QNo	Question	Responses	Codes	Go To	Sup
		community based volunteer expert at clinic Other [specify: _____] do not know [circle by itself]	G H 77 99		77 99
CHAMPIONS - TELEVISION					
PE24	Have you ever seen a Champions advert on television where Dr. Speciosa Wandira, the former vice president of Uganda, was talking about domestic violence? [Enum: Show television aid]	yes no do not know/cannot remember	1 2 99		
PE25	Have you ever seen a Champions advert on television where Dr. Kenneth Kaunda, a former president of Zambia, was talking about HIV and AIDS? [Enum: Show television aid]	yes no do not know/cannot remember	1 2 99		
PE26	Have you ever seen a Champions advert on television where Bishop Desmond Tutu from South Africa was talking about communication in relationships? [Enum: Show television aid]	yes no do not know/cannot remember	1 2 99		
CHAMPIONS - RADIO					
PE27	Have you ever heard a Champions advert on the radio where Dr. Speciosa Wandira, the former vice president of Uganda, was talking about domestic violence?	yes no do not know/cannot remember	1 2 99		
PE28	Have you ever heard a Champions advert on the radio where Dr. Kenneth Kaunda, the former president of Zambia, was talking about HIV and AIDS?	yes no do not know/cannot remember	1 2 99		
PE29	Have you ever heard a Champions advert on the radio where Bishop Desmond Tutu from South Africa was talking about communication in relationships?	yes no do not know/cannot remember	1 2 99		
COMMUNITY DISCUSSION/DIALOGUE					
PE31	Have you ever participated in a "OneLove" Kwasila community discussion/dialogue?	yes no do not know/cannot remember	1 2 99	PE31a PE32 PE32	
PE31a	[If yes to PE31] Approximately how many times have you participated in a "OneLove" community discussion/dialogue?	_____ do not know/cannot say	99		
PE32	Have you ever participated in a C-Change/"OneLove" community discussion/dialogue?	yes no do not know/cannot remember	1 2 99	PE32a PE33 PE33	

QNo	Question	Responses	Codes	Go To	Sup
PE32a	[If yes to PE32] Approximately how many times have you participated in a C-Change/"OneLove" community discussion/dialogue?	_____ do not know/cannot say	99		
CLUB RISKY BUSINESS					
PE33	Have you ever watched Club Risky Business ?	yes no do not know/cannot remember	1 2 99	PE33a SE1 SE1	
PE33a	[If yes to PE33] How many episodes of "Club Risky Business" in total, would you estimate you have watched?	_____ [Enum: 0 is a valid value] refused to answer do not know/cannot say	66 99		
PE33b	[If yes to PE33] Have you ever spoken with anyone about the things you watched on Club Risky Business?	yes no do not know/cannot say	1 2 99	PE33bi SE1 SE1	
PE33bi	[If yes to PE33b] To whom have you spoken about the things that you watched on Club Risky Business?	sexual partner(s)/spouse friend(s)/peers my children others in the family support group members community members community based volunteer expert at clinic Other [specify: _____] do not know [circle by itself]	A B C D E F G H 77 99 77 99		A B C D E F G H 77 99 C D E F 77 99

End of Survey

Thank them for their time and energy, and leave the compound.

TIME FINISHED: [__|__][__|__] [24 HOUR CLOCK]

PLEASE RECORD THE FINISH TIME:[Enum: Please transfer finish time to V4, page 4 and calculate total time]

Appendix 2: Ethics Approval HREC (Medical) R14/49



R14/49 Mr Leonard Kamugisha

HUMAN RESEARCH ETHICS COMMITTEE (MEDICAL)

CLEARANCE CERTIFICATE NO. M141043

NAME: Mr Leonard Kamugisha
(Principal Investigator)

DEPARTMENT: Public Health
Medical School

PROJECT TITLE: The role of a mass media campaign in uptake of adolescent HIV counselling and testing five Southern African countries

DATE CONSIDERED: 31/10/2014

DECISION:

CONDITIONS:

SUPERVISOR: Nicola Christofides

APPROVED BY:

Professor Cleaton-Jones, Chairperson, HREC (Medical)

DATE OF APPROVAL:

This clearance certificate is valid for 5 years from date of approval. Extension may be applied for.

DECLARATION OF INVESTIGATORS

To be completed in duplicate and **ONE COPY** returned to the Secretary in Room 10004, 10th floor, Senate House, University.

I/we fully understand the conditions under which I am/we are authorized to carry out the above-mentioned research and I/we undertake to ensure compliance with these conditions. Should any departure be contemplated, from the research protocol as approved, I/we undertake to resubmit the application to the Committee. **I agree to submit a yearly progress report.**

Principal Investigator Signature _____

Date _____

PLEASE QUOTE THE PROTOCOL NUMBER IN ALL ENQUIRIES

Annex 3: Plagiarism form



PLAGIARISM DECLARATION TO BE SIGNED BY ALL HIGHER DEGREE STUDENTS

SENATE PLAGIARISM POLICY: APPENDIX ONE

I **LEONARD KAMUGISHA** (Student number: **745045**) am a student registered for the degree of **MASTER OF PUBLIC HEALTH (SBCC)** in the academic year **2017**.

I hereby declare the following:

- ❖ I am aware that plagiarism (the use of someone else's work without their permission and/or without acknowledging the original source) is wrong.
- ❖ I confirm that the work submitted for assessment for the above degree is my own unaided work except where I have explicitly indicated otherwise.
- ❖ I have followed the required conventions in referencing the thoughts and ideas of others.
- ❖ I understand that the University of the Witwatersrand may take disciplinary action against me if there is a belief that this is not my own unaided work or that I have failed to acknowledge the source of the ideas or words in my writing.

Signature:  Date: 6/09/2017