

LINKAGES BETWEEN CASH INCENTIVES AND BEHAVIOUR CHANGE WITH
REGARDS TO HIV COUNSELLING AND TESTING UPTAKE IN ADOLESCENTS:
AN ASSESSMENT OF THE RHIVA PROGRAMME IN THE KHOMAS REGION,
NAMIBIA

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ABSTRACT

Adolescents must deal with a range of biological, social, emotional, and psychological transitions in order to successfully enter the adult world. Yet, they lack the basic knowledge, skills and structural support to prevent themselves from becoming infected with HIV. Vulnerable children typically grow into vulnerable youth and vulnerable adults, who in turn have vulnerable children of their own. This reinforces a cycle of poverty and vulnerability for most families in Namibia. A clear understanding of the situation of young people and their needs is required to design and successfully implement interventions such as the Reduce HIV/AIDS in adolescents (RHIVA) programme.

The aim of the research was to assess the efficacy of the RHIVA programme's cash incentive based theory of change model, focusing on HCT uptake and HIV prevention in Namibia. Consequently, the study sought to understand the impact of structural factors on incentives and behaviour model proposed by the RHIVA theory of change model. The study used secondary data from a pre-post quasi-experimental design collected from 529 baseline survey and 458 end line survey data of learners from the RHIVA pilot programme in Khomas region. The study used a combination of confirmatory factor analysis (CFA) and structural equation modelling (SEM) to answer the research questions.

The study found a significant cash incentives relationships, notably with HCT uptake ($r = 0.487$) and the use of drugs and alcohol among peers ($r = 0.121$). Moreover, the findings suggest that RHIVA intervention schools (IG2) received more cash incentives than

RHIVA control schools (IG1) and Pure Control schools (CG). The study concludes that strengthened school support structures and conditional cash transfers are important in increasing HCT uptake of the learners. While teacher support, age and cash management also plays a key role in increasing HCT uptake. The study recommends the active engagement of young people and strengthening the school support system by training both the teachers and the learners on sexual reproductive health. Teachers and parents are structural agents encouraging learners towards positive sexual behaviours.

Keywords: Adolescents, RHIVA, HCT uptake, HIV/AIDS, CCTs, Behaviour change

TABLE OF CONTENTS

ABSTRACT	i
LIST OF FIGURES	ix
LIST OF TABLES	x
ABBREVIATIONS AND ACRONYMS	xi
DECLARATION	xiv
CHAPTER 1	1
INTRODUCTION AND BACKGROUND OF THE STUDY	1
1.1 Background to the study	1
1.2 Theoretical framework.....	4
1.3 Statement of the problem.....	6
1.4 Aim of the study	8
1.5 Objectives of the study	8
1.6 Research questions.....	9
1.7 Significance of the study.....	9
1.8 Limitations of the study	10
CHAPTER 2	12

LITERATURE REVIEW	12
2.1 Introduction.....	12
2.2 Overview of HIV and AIDS in Namibia	12
2.2.1. Prevalence of HIV/AIDS in Namibia.....	14
2.2.2. Policy response to HIV/AIDS in Namibia	15
2.2.3. Youth Friendly Services (YFS) in Namibia	18
2.2.4. Significance of VCT in the fight against AIDS	21
2.3 Theoretical perspectives	29
2.3.1. Biomedical perspectives.....	30
2.3.2. Behavioural change approach	32
2.3.3. Constructivism and symbolic interactionist perspective	36
2.3.4. Feminism and conflict perspectives	39
2.3.5 Political economy approach	41
2.4 Key drivers of HIV/AIDS in Namibia.....	45
2.5 Empirical studies on incentive programmes.....	50
2.5.1. Conditional cash transfers: International perspectives.....	53

2.5.2. Cash transfers: African perspective.....	54
2.6 The RHIVA programme: A conceptual framework for Africa and Namibia.....	55
2.6.1 RHIVA pilot programme	58
2.6.2 The RHIVA programme in Namibia	62
2.6.3 Conceptual framework.....	66
2.7 Conclusion	68
CHAPTER 3	69
RESEARCH DESIGN AND METHODOLOGY	69
3.1 Introduction.....	69
3.2 Research design	69
3.3 Population	70
3.4 Sample	70
3.5 Research instruments	71
3.6 Data preparation and screening procedures	72
3.7 Data analysis	76
3.7.1 Exploratory Factor Analysis	76

3.7.2 Confirmatory Factor Analysis.....	77
3.8 Reliability and validity.....	78
3.9 Research ethics	78
CHAPTER 4	80
DATA ANALYSIS AND PRESENTATION OF RESEARCH FINDINGS.....	80
4.1 Introduction.....	80
4.2 Demographic information.....	80
4.2.1 School locality.....	81
4.2.2 Gender distribution.....	83
4.2.3 Age distribution of respondents	86
4.3 Descriptive statistics	87
4.3.1 Financial issues	87
4.3.2 Career planning	90
4.3.3 Future planning	91
4.3.4 Cash incentive milestones	93
4.3.5 Age difference at first sexual encounter.....	97

4.3.6 Sexual behaviour	100
4.4 Inference statistics: Confirmatory Factor Analysis (CFA)	102
4.4.1 Exploratory Factor Analysis.....	102
4.4.2 Confirmatory Factor Analysis.....	104
4.5 Linkages between cash incentives, behaviour change and HCT uptake	108
4.6 The conceptual pathway to HIV prevention in adolescents	113
4.7 Conclusion	115
CHAPTER 5	116
DISCUSSION OF FINDINGS	116
5.1 Introduction.....	116
5.2 Discussion of results	116
5.3 Research contributions.....	121
5.4 Conclusion	125
CHAPTER 6	127
RECOMMENDATIONS AND CONCLUSION	127
6.1 Introduction.....	127

6.2 Recommendations.....	127
6.3 Conclusion	128
6.4 Further research	130
REFERENCES	131
APPENDIX A: LEARNER BEHAVIOUR QUESTIONNAIRE.....	146
APPENDIX B: ETHICAL CLEARANCE LETTER	160
APPENDIX C: PERMISSION LETTER	161
APPENDIX D: SPSS CODEBOOK FOR RHIVA DATA	163

LIST OF FIGURES

Figure 2.1 A Framework linking HCT uptake enablers and barriers to youths' sexual reproductive health (SRH) status continuum	23
Figure 2.2 RHIVA Theory of Change model	56
Figure 2.3 Structural linkages between cash incentives and behaviour change in RHIVA Programme	66
Figure 4.1 Importance of saving	89
Figure 4.2 Future planning.....	92
Figure 4.3 Means Plots for Cash Incentives	96
Figure 4.4 Age difference at first sexual encounter by school groups.....	99
Figure 4.5 Learners who reported ever having sex	101
Figure 4.6 CFA model of the RHIVA theory of change.....	105
Figure 4.7 Research linkages model	109
Figure 4.8 Research model.....	114

LIST OF TABLES

Table 3.1 RHIVA survey sample description	71
Table 3.2 Data screening results	75
Table 4.1: Income area of the schools	81
Table 4.2 Gender of the participants	84
Table 4.3 Age distribution of respondents	86
Table 4.4 Financial issues correlation analysis	88
Table 4.5 Descriptive statistics for career planning	90
Table 4.6 Cash Incentives received	95
Table 4.7 EFA results for the end line survey data	102
Table 4.8 Linkages between cash incentives and positive behaviour change	106
Table 4.9 Model Fit Measures	108
Table 4.10 Standardized Regression Weight of SEM Linkages Model	111

ABBREVIATIONS AND ACRONYMS

ANOVA	-	Analysis of Variance
EFA	-	Exploratory Factor Analysis
HIV/AIDS	-	Human Immune Deficiency Syndrome
KMO	-	Kaiser-Meyer-Olkin
M	-	Mean
MoHSS	-	Ministry of Health and Social Services
NDHS	-	Namibia Demographic Health Survey
NDP4	-	National Development Plan- four
NSA	-	Namibia Statics Agency
SD	-	Standard Deviation
USD	-	United States Dollar
WHO	-	World Health Organisation

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DEDICATION

I dedicate this study to my father Kai ||gau!nâ-aob (retired teacher), Mr. Bethuel ||Hoëbeb and his life partner and lovely wife of 37 years, my mother, the late Mrs. Hildegard ||Hoëbes. Your exemplary lives, godly strength and loving upbringing has made me who I am today. Thank you for compelling me to pursue these studies and incessantly following up on my progress.

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My uncle Mr. Albert Hennie Haraseb and aunt Dr. Kathe ||Hoëbes for being my role models in life.

DECLARATION

I, Imelda ||Hoëbes, hereby declare that this study is a true reflection of my own research, and that this work, or part thereof has not been submitted for a degree in any other institutions of higher learning.

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Date

CHAPTER 1

INTRODUCTION AND BACKGROUND OF THE STUDY

1.1 Background to the study

Across the SADC region, millions of children face challenges to realizing their right to education. Without education, children and youth become adults who cannot change their worlds for the better (SADC, 2008). Vulnerable children typically grow into vulnerable youth and vulnerable adults, who in turn have vulnerable children of their own. This reinforces a cycle of poverty and vulnerability for most families in the SADC. As such, behaviour change initiatives that target children's educational opportunities and environment is at the centre of the Southern Africa Development Community's (SADC) development agenda, and it can be seen as both a challenge and an opportunity to social and economic development in the region (SADC, 2008).

SADC Ministers of Education, recognizing that fundamental changes need to take place in all education systems and institutions unanimously adopted the Care and Support for Teaching and Learning (CSTL) programme at a meeting in Zambia on 4 July 2008 (SADC-CSLT/MiETAfrica, 2013). The CSTL initiative is a comprehensive response to the health and socio-economic challenges facing vulnerable learners. The initiative aims

to make schools inclusive centres of learning, care and support (SADC-CSLT/MIET Africa, 2013).

The CSTL programme operates at three levels: at the regional level within the SADC Secretariat as CSTL, the national level with Ministries of Education, and at the school level in CSTL pilot schools such as the RHIVA programme. The CSTL programme works with schools as entry points and channels for care and support. They provide an effective service delivery mechanism for integrated and comprehensive services. Schools are generally accessible, which makes them intrinsically capable of addressing certain service delivery barriers common to Namibia such as distance, lack of infrastructure and sustainability (SADC-CSLT/MIET Africa, 2013).

In the period 2008 - 2013, the CSTL programme was implemented intensively in the DRC, Mozambique, South Africa, Swaziland and Zambia. The current phase of CSTL commenced in November 2013 and it will run until October 2018. Namibia is a part of the current CSTL phase, where it will benefit from a number of foundational CSTL strategies, which include the Health Promotion, Safety and Protection strategy (SADC-CSLT/MIET Africa, 2013). The RHIVA programme contributes specifically to the Health Promotion and Safety and Protection elements of CSTL. MIET Africa, the CSTL programme's technical partner, designed the Reducing HIV/AIDS in Adolescents (RHIVA) Programme with the aim of demonstrating the value of an integrated, regional response to HIV prevention (MIET Africa, 2014).

The Centre for the AIDS Programme of Research in South Africa (CAPRISA) trial on cash transfers and adolescent research in KwaZulu-Natal (KZN) led to the development of the RHIVA regional pilot programme. The RHIVA programme is a school-based, conditional cash-transfer HIV prevention programme focused on empowering adolescents (especially young girls) to make healthy lifestyle choices, to take charge of their own lives and to reduce their risk of contracting HIV. The RHIVA regional pilot programme implementation is a partnership between the SADC Secretariat and the Ministries of Education in each of the three countries: Mozambique, Namibia and Zambia (MIET Africa, 2012).

The RHIVA pilot programme in the Khomas region was a school-based programme that addressed the risk of HIV infection amongst adolescents using a conditional cash transfer model from March 2013 and ended in December 2015. This type of school-based conditional cash transfer programme focuses on HIV prevention by empowering adolescents. The empowerment, especially of young girls, entails making healthy lifestyle choices through taking charge of their own lives and reducing their risk of contracting HIV. In Namibia, the RHIVA programme targeted 4200 grade 10 and 11 girls and boys attending 21 high schools in urban areas of Khomas region. Cash incentives involve payments to learners for a specified intervention milestone. The learners receive a direct payment of twenty American dollars (US\$20) for achieving a specified milestone. The

milestones include knowing your HIV status, academic achievement and completing a life skills course (MiET Africa, 2014).

1.2 Theoretical framework

This study draws upon the theory of social constructivism. The constructivist theory requires learners' interaction and engagement in classroom activities, and as such it identifies with symbolic interactionist perspectives. Kendall (2016) describes symbolic interactionist perspectives as a focus on how people make sense of their everyday social interactions. Ferrante (2015) defines it as a focus on social interaction and related concepts of self-awareness or reflexive thinking, symbols, and negotiated order. Constructivism emphasizes the use of cash transfers directly to the learners, as actively involving the learners in their sexual reproductive health. The cash incentives provide a symbolic interaction that makes the learners self-aware of the issues related to their sexual reproductive health. This self-awareness empowers them into making healthy lifestyle choices through taking charge of their own lives and reducing their risk of contracting HIV.

The study used conflict theory to analyse and contrast political-economy against feminist and structural constraint theories. Conflict perspectives view the society as a continuous power struggle among competing groups, often based on class, race, ethnicity, or gender (Kendall, 2016). According to this perspective, societal inequality is a direct result of

domination between the classes, with feminists going further to include gender inequality (Ferrante, 2015). Feminist theory aids in the understanding of conditions in the society that produce oppression and the possibilities for social changes.

The sociologist Robert Merton argued that deviance (that is people breaking social norms/rules) is produced by how the society distributes the means to achieve cultural goals (Merton, 1957). Structural constraints are part of the social structure and they act to channel desirable behaviour but constrain individual choice. As a result, structural constraints can push boys and girls into roles that correspond with society's expectations regarding sex-appropriate roles. These boys and girls may choose to deviate from the society's expectations of them. This deviance is the basis of the Structural Strain Theory (Merton, 1957). The Structural Strain Theory holds that deviance is a response to an imbalance between culturally valued goals and the socially acceptable ways for achieving those goals (Ferrante, 2015). The Structural Strain Theory is relevant to the RHIVA programmes review as it helps with understanding the impact of structural strains such as poverty on the learners' future, as well as understanding how cash incentives can facilitate deviance from culturally valued behaviours.

In the general Namibian society, adolescent sex is regarded as deviant behaviour, whereas abstinence from sexual activity is often presumed to be the healthiest behavioural outcome for teenagers. However, Harden (2014) proposed a sex-positive framework for research on adolescent sexuality in which consensual sexual activities in adolescence can be viewed

as developmentally normative and potentially healthy. The self-efficacy theory connects with the sex-positive framework, understanding that adolescent sexuality can be fostered by considering sexual well-being. Adolescent sexual well-being is a multidimensional construct that incorporates an adolescent's sexual self-efficacy, sexual self-esteem, feelings of sexual pleasure and satisfaction, and freedom from pain and negative affect regarding sexuality (Harden, 2014).

Harden (2014) notes that adolescent sexuality research should focus on improving psychological, social, and health outcomes for teenagers. Harden (2015) argues that research should not exclusively focus on the risks or potential dangers of sexuality, without inquiring about its potentially positive functions. The latter impoverishes the scientific understanding of sexual development and of adolescence. Moreover, it potentially hampers the ability to mitigate dangers and promote positive health. Consequently, these theoretical developments suggest a new focus for research into understanding the linkages between cash incentives and HIV Counselling and Testing (HCT) uptake in adolescents.

1.3 Statement of the problem

Many young people do not have the basic knowledge and skills to prevent themselves from becoming infected with HIV (Monasch & Mahy, 2008). Adolescents must deal with a range of biological, social, emotional, and psychological transitions in order to

successfully enter the adult world (Coleman & Roker, 1998). Yet young people continue to have insufficient access to information, counselling, testing, condoms, harm-reduction strategies and treatment and care for sexually transmitted infections (Ross, Dick, & Ferguson, 2008).

A clear understanding of the situation of young people and their needs is required to design and successfully implement interventions to stem the tide of infections among young people (Monasch & Mahy, 2008). These interventions are based on psychological and social science theories that emphasize the importance of knowing about the risks of HIV transmission, instilling motivation to protect oneself and others, changing expectations of outcomes, developing skills for engaging in protective behaviours and the ability to maintain protective behaviours, and providing social support for protective actions (Kirby, Laris, & Roller, 2005).

The RHIVA programme is a school-intervention programme which uses cash incentives to target adolescents' behaviour change at different socio-economic levels. At the individual level it provides life skills and sexual reproductive health training. At the family level, RHIVA improves intra-family communication about youth positive sexuality. At the community level it provides access to youth-friendly health services, mass media campaigns aimed at changing norms in society regarding gender roles and or interventions to decrease girls' vulnerability. Consequently, the RHIVA programme's theory of change depends on the sanctity of the relationship between parents, teachers,

schools and the community. This study explored these social-structural linkages that facilitate the use of cash incentives towards positive behaviour change in Namibian school going adolescents.

1.4 Aim of the study

The aim of the research was to investigate the linkages between cash incentives and behaviour change with regards to HCT uptake in adolescents, focusing on the pre- and post-assessment of the RHIVA programme in the Khomas region.

1.5 Objectives of the study

The objectives of the study were to:

- evaluate Khomas Region learners' knowledge, perceptions and behaviour around key RHIVA programme themes on sexual reproductive health, HIV testing, school and financial issues;
- explore the relationship between cash incentives and behaviour change with regards to HCT uptake and HIV prevention in Khomas region learners;
- assess the efficacy of the RHIVA programme's cash incentive model in targeting HCT uptake and HIV prevention in Namibia; and
- suggest ways to improve the RHIVA programme and school-based CSTL strategies in Namibia.

1.6 Research questions

In order to achieve the above stated objectives, the study sought answers to the following questions:

1. Is there any significant difference between the learners' knowledge, perceptions and behaviour around sexual reproductive health, HIV testing, school and financial issues in the pre- and post-implementation of the Khomas RHIVA programme?
2. What relationship exists between cash incentives and behaviour change concerning HCT uptake and HIV prevention in Khomas region learners?
3. How effective is the RHIVA programme's cash incentive model in targeting HCT uptake and HIV prevention in Namibia?
4. In what ways can the RHIVA programme and school-based CSTL strategies in Namibia improve?

1.7 Significance of the study

This study can contribute to the field of sociology, HIV/AIDS policy discourse, public social policy review, HIV prevention strategies and interventions related to cash incentives and positive behaviour change. This research is of great importance to the Ministries of Education, Finance, Health and Social Welfare. The study is also significant to government programmes on financial inclusion, social protection amongst teenagers

and sexual reproductive health targeting adolescents. Furthermore, the findings can help educators, social practitioners, policy makers, health officers and youth planners with designing HIV prevention programmes.

1.8 Limitations of the study

Using the RHIVA programme secondary data meant inheriting its limitations. Research instruments design resulted in vague responses from learners. Moreover, the questionnaire used yes or no type of responses, where the 5-point likert scale would have been appropriate. As a result, the variable scales had poor reliability and low Cronbach's alpha reliability values. The researcher recoded some of the questionnaires and created dummy variables as a way to improve reliability and align the responses to the research objectives (See Appendix D for the codebook of the modified questions and dummy variables created).

The study was limited to Windhoek urban constituencies and only focused on school-going youth between the ages of 15 and 24 years. Consequently, the socio-demographic findings of the study cannot be generalized to all Namibian youth. Any positive behavioural change that emerges from the post-incentive study may not last beyond the incentive intervention period due to other cultural, economic and social factors not covered by the RHIVA programme. The findings may therefore not be valid for all times and under non-cash incentive conditions. While the use of primary data aligned to the

objectives of the study would ideally be suited to the research, time and financial restrictions limited the study. The study relied on secondary data from the RHIVA programme.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

This study explored the linkages between cash incentives and behaviour change regarding HCT uptake in adolescents, with a focus on the efficacy of the Namibian RHIVA programme. This chapter presents the literature review of the study. It starts with the theoretical framework on the linkages between cash incentives and positive behaviour change on HCT uptake in adolescents. Next, the review looks at the context of the study that includes an overview of HIV and AIDS in Namibia, as well as Namibia's response to the epidemic and its prevalence in Namibian adolescents. The chapter also discusses the literature on reducing HIV in adolescents and youth friendly services (YFS) programmes in Namibia. The chapter ends with a conceptual framework on the HCT uptake linkages with the youth sexual reproductive health status continuum, as well as the socio-cultural barriers and enablers of HCT uptake in Namibian youth.

2.2 Overview of HIV and AIDS in Namibia

Acquired Immune Deficiency Syndrome (AIDS) is caused by the human immunodeficiency virus (HIV). HIV weakens the immune system and makes the body

susceptible and unable to recover from other opportunistic diseases (MoHSS & ICF International, 2014). According to Mahela (2014), AIDS emerged in the 1980s as the most terrifying epidemic of modern times. It was likened to the “black death” or bubonic plague of the middle ages in Europe during which millions died. AIDS was seen as a rare condition affecting homosexual men in the US around the 1980s. It was only recognized as a global health problem of paramount importance in 1986. This was the same year the disease was first reported in Namibia. Since then, the rate of HIV infection has continued to rise in the country (MoHSS, 2008).

Globally, the most common sources of data used in HIV/AIDS research are sentinel surveillance systems (that undertake periodic surveys among specific population groups). These are national population-based surveys and case reports from health facilities (UNAIDS, 2008). HIV surveillance forms a critical element in the expanded national response as it allows the identification of the geographic and demographic sub-groups most affected by HIV. This ensures that comprehensive and evidence-informed HIV prevention, treatment and care programmes can be targeted to these groups (Mahela, 2014). HIV sentinel surveillance in pregnant women attending antenatal care (ANC) at public facilities is a biennial survey since 1992 in Namibia. The biennial national HIV Sentinel Survey (HSS) started with eight facilities in 1992 and expanded to 14 facilities in 1994 to include smaller towns and some rural areas. The number of sites continued to expand and since 2008, the sentinel sites from all 35 districts are included to represent

regional diversity. In 2014, the MoHSS continued the sentinel surveillance survey in 35 district sites, supplemented by 98 satellite sites (MoHSS, 2014a, p. 1).

ANC-based sentinel surveillance is currently the key data source for HIV estimates in Namibia. The results of the HSS provide inputs for the Spectrum and other models which estimate and project national HIV prevalence. It also projects the HIV incidence, the estimated number of people living with HIV and those in need of anti-retroviral therapy (ART). HIV Sentinel Surveys are thus essential for programme planning and evaluation (Jonas, Gutreuter, Patel, Maher, *et al.*, 2013).

2.2.1. Prevalence of HIV/AIDS in Namibia

According to HSS (2014), the HIV prevalence amongst pregnant women attending antenatal clinic was 4.2% in 1999, peaking to 22% in 2002. In 2014, the prevalence rate was stabilizing at 16.9%. This provides an indication of infection rates in the general adult population, with the highest rates amongst economically productive Namibians (MoHSS, 2014). Namibia, as a predominantly young nation (median age 21), has approximately 37% of its population below the age of 15 years (NSA, 2012).

2.2.2. Policy response to HIV/AIDS in Namibia

At independence in 1990, the National AIDS Control Programme (NACP) based within the Ministry of Health and Social Services (MoHSS) was established to respond to the AIDS pandemic. The MoHSS came up with a comprehensive framework for the national multi-sectoral and sub-regional response to HIV/AIDS (MoHSS, 2014a). Three Medium Term Plans (MTP) were implemented since independence with the first plan (MTPI) covering the period 1992-1998, MTPII covering 1999-2004, and MTPIII covering 2004-2009. Following the end of implementation of the Third Mid Term Plan (MTP III), the government introduced the National Strategic Framework for the HIV/AIDS response (NSF) covering 2010-2016 (MoHSS, 2014a). A mid-term review and revision of the NSF 2010-2016 conducted in 2013 resulted in the current NSF 2010-2017.

The current NSF is aligned to the implementation period of the National Development Plan (NDP 4) (MoHSS, 2014a). The NSF outlines a combined prevention strategy that is built on the strengths of the previous programme. It addresses the areas identified for renewed attention and commitment. It also addresses human resource capacity building, improved financing, and enhanced coordination and cooperation, with a shift towards the investment approach. The decrease in the estimated number of new HIV infections among adults demonstrates the impact of the NSF's prevention programmes (MoHSS, 2014a). About 10 685 people were newly infected with HIV during 2013/14, while this number reduced to 9 784 in 2014/15. The estimated number of new infections coupled with high

uptake of ART, has resulted in an estimated 250 942 adults and children living with HIV in Namibia in 2014 (MoHSS, 2015). The increasing numbers of people living with HIV (PLHIV) is mainly due to a reduction in AIDS-related deaths. However, full coverage of ART throughout the country continues to be a public health concern as it affects both younger and older women of childbearing age in all geographical areas of the country (MoHSS, 2014a).

At the 2006 United Nations General Assembly, governments of the world during a high level meeting on AIDS committed to ensure an HIV-free future generation, through the implementation of comprehensive, evidence-based prevention strategies. This also includes responsible sexual behaviour, provision of youth-friendly health services, mass media interventions, use of condoms and evidence- and skills-based youth specific HIV education (UNGASS, 2006, par. 26). According to UNAIDS (2011), programmes to prevent HIV infections among young people will be more effective if they include a combination of prevention approaches that are youth-friendly. These programmes should promote comprehensive services that include sexuality education, knowledge of HIV and access to sexual and reproductive health services. Furthermore, discussions on harmful sexual norms and practices should also be part of the intervention (UNAIDS, 2011).

According to the UN Secretary General's (UN-SG) report, there are 1.6 billion people aged 12-24 globally, the largest generation of adolescents and young people ever (UN-SG, 2012). Globally, young women aged 15-24 are more susceptible, with HIV infection

rates twice as high as in young men, and accounting for 22% of all new HIV infections and 31% of new infections in Sub-Saharan Africa (UNAIDS, 2011). The Joint United Nations Programme on HIV/AIDS (UNAIDS, 2012) reports that young people aged 15–24 accounted for 42% of new HIV infections in people aged 15 and older. Over 80% of young people living with HIV (4 million) are living in sub-Saharan Africa (UNAIDS, 2012).

Pettifor, Bekker, Hosek, DiClemente, Rosenberg, *et al.* (2013) note that the greatest burden of HIV among young people is in Sub-Saharan Africa (SSA). Young women have almost eight times the HIV prevalence as same-age men (UNAIDS, 2010). In contrast, in the US and Europe, young men who have sex with men (YMSM) are at greatest risk of infection, particularly YMSM of colour, while in Eastern Europe and Central Asia, young injection drug users and their sexual partners have the highest risk (UNAIDS, 2010).

UNICEF and UNAIDS (2011) report on opportunities to preventing HIV from early adolescence to young adulthood, and highlights that most adolescents living with HIV were born with the virus. WHO (2013) considers adolescents as people between the ages of 10 and 19 years. However, they note that adolescents are not a homogenous group as they vary in physical and emotional maturation. Variations in social and cultural factors can also affect their health, as well as their ability to make important personal decisions and their ability to access services (WHO, 2013).

UNAIDS (2011) reports progress in HIV prevalence among young people (aged 15 - 24 years), with 21 out of 24 countries that have a national HIV prevalence of 1% or higher showing declining trends. There has been a decline in HIV prevalence and a falling of new HIV infections among young people worldwide, especially in Sub-Saharan Africa. This is due to behavioural changes such as waiting longer to become sexually active, having fewer partners and an increased use of condoms among young people with multiple partners (UNAIDS, 2011).

2.2.3. Youth Friendly Services (YFS) in Namibia

Chandra-Mouli, Svanemyr, Amin, Fogstad, Say, Girard, and Temmerman (2015), noted that sexual and reproductive health (SRH) concepts, and reproductive rights were first adopted by governments under the auspices of the United Nations at the International Conference on Population and Development (ICPD) in Cairo in 1994. ICPD defined reproductive health and called for nations to meet the educational and service needs of adolescents to enable the adolescents to deal in a positive and responsible way with their sexuality (UN, 1995).

In a follow-up, WHO, in conjunction with the United Nations Children's Fund (UNICEF) and the United Nations Population Fund (UNFPA) in 1995, agreed on a Common Agenda for Action in adolescent health and development. This common agenda called for the implementation of a package of interventions, tailored to meet the special needs and

problems of adolescents. These included the provision of information and skills, the creation of a safe and supportive environment, and the provision of health and counselling services (WHO-UNFPA-UNICEF, 1997).

Chandra-Mouli *et al.* (2015) note considerable progress made since ICPD 1994 on a range of SRH indicators. However, they cite many knowledge gaps and a need for further research on how to best design effective adolescent SRH intervention packages. They found that projects aimed at improving adolescent SRH were often small in scale and short lived. At the same time, the projects were poorly monitored, evaluated, and documented. As such, the UN-SG report (2012) recommends actively engaging young people in the design, implementation, monitoring, and evaluation of HIV policies, services, and programmes. This engagement enhances their leadership skills and equips them to demand youth-friendly health services and programmes.

MoHSS-ICF (2011) appreciates the impact of youth-friendly services (YFS) in overcoming barriers to accessing healthcare in young people, especially HIV/AIDS related services. YFS involve young people in all aspects of a programme's planning, operations, and evaluation. The services include workers who are members of the target population as well as sensitive to youth culture, ethnicity, gender, sexual orientation and HIV status (MoHSS-ICF, 2011).

In 2004, the government of Namibia recognised the centrality of the prevention of HIV/AIDS, the support of people infected and affected with HIV/AIDS and the mitigation of the effects of HIV/AIDS in the education sector. In response, the Ministry of Basic Education, Sport and Culture (MBESC) and the Ministry of Higher Education, Training and Employment Creation (MHETEC) with assistance from UNESCO, UNAIDS and Academy for Educational Development (AED) developed the *National Policy on HIV/AIDS for the Education Sector* (NPHEs). NPHEs is an intervention to provide knowledge and encourage the development of attitudes and skills in addition to alleviating the spread and impact of the AIDS pandemic (MBESC/MHETEC, 2003).

After a decade of implementing NPHEs, Namibia had the institutional and structural capacity to implement the RHIVA regional pilot. The RHIVA regional pilot programme came under the auspices of the SADC Care and Support for Teaching and Learning (CSTL). CSTL is a system aimed at strengthening the education sector, through the Policy Working Group of the Joint HIV/AIDS Committee for Education, and under the leadership of the Legal Assistance Centre, and it includes all educational sector stakeholders at all levels.

The 2009 Namibia Health Facility Census (NHFC) assessed the availability of youth-friendly HIV counselling and testing services, as well as the availability of resources to support the provision of these services, such as service guidelines and trained providers (MoHSS-ICF, 2011). The 2009 NHFC gathered information from different types of health

facilities, namely hospitals, health centres, clinics, sick bays, and freestanding VCT sites. The census found that among the facilities that have an HIV testing system, two out of every ten provide youth-friendly HIV testing services. Hospitals and sick bays were among the least likely to offer youth-friendly services. The 2010 National Strategic Framework for HIV and AIDS (NSF), showed that Namibian health facilities offer client-initiated (voluntary) counselling and testing (VCT), including provider-initiated testing and counselling (PITC). PITC is recommended for all patients attending health facilities regardless of their health conditions, age, or symptoms, including men prior to surgical circumcision (MoHSS-ICF, 2011).

2.2.4. Significance of VCT in the fight against AIDS

HCT is a key strategy in prevention, care and support as it provides people with an opportunity to be tested, as well as learn to manage their HIV status. Consequently, testing negative for HIV offers an opportunity to reinforce the importance of risk reduction while a positive HIV result means early intervention. In such instances, HCT can prevent new infections, when people recognise their HIV status and are given the necessary knowledge to prevent transmissions (UNAIDS, 2011).

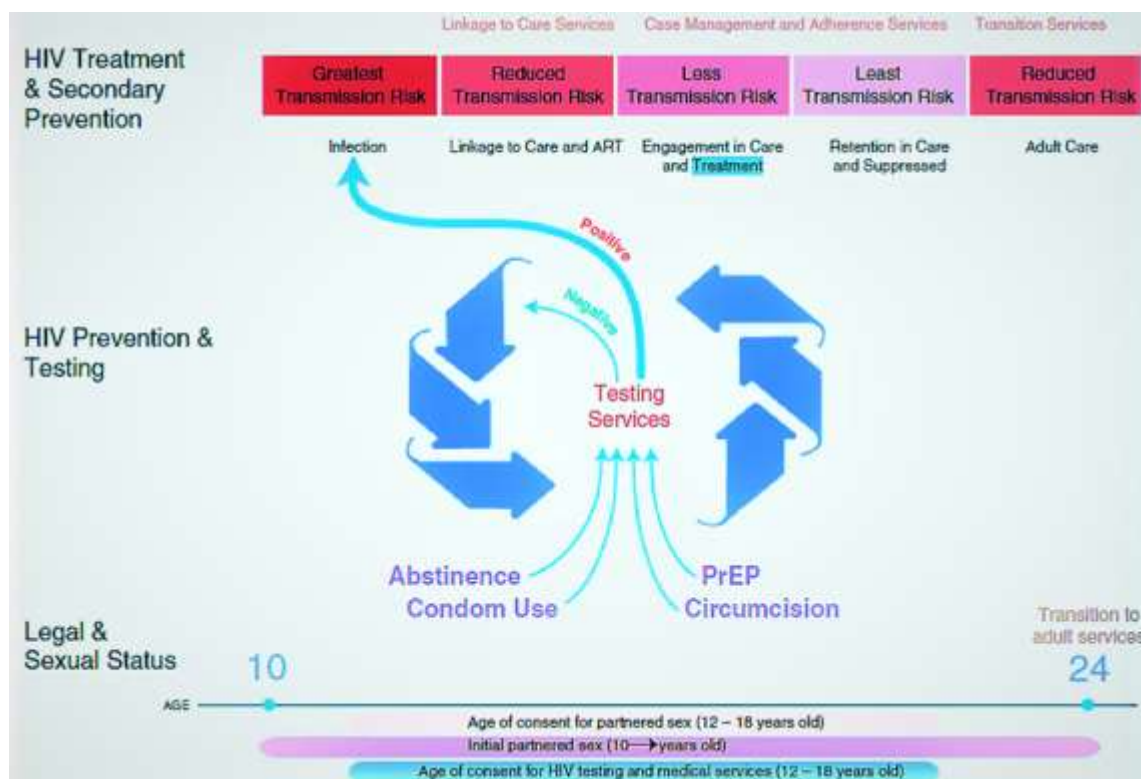
HCT provides the beginning of reducing the risk of HIV exposure through changing people's health-seeking behaviour and social norms. However, there is often a low HCT uptake by both adults and adolescents due to socio-structural conditions such as cultural

norms, poverty and stigma. For instance, perceptions about a lack of confidentiality, fear of stigmatisation and discrimination in both school and the community hampers HIV testing (Young & Bendavid, 2010).

Kurth, Lally, Choko, Inwani, and Fortenberry (2015) studied the linkage of services for youth to HIV testing. Their findings show that HIV testing is the portal to serostatus knowledge that can empower linkages to care for HIV treatment and HIV prevention. Kurth *et al.* (2015) reviewed the context and concerns faced by the youth around HIV testing in low and high-income country settings. A continuum approach based on seek, test, treat, retain and suppress is applied to develop a framework with the potential to bend the curve of the HIV epidemic (Hull, Wu, & Montaner, 2012).

Idele, Gillespie, Porth, Suzuki *et al.* (2014) note that fewer than one in five boys and one in three girls aged 15-19 years in Africa report ever HIV testing even though HIV testing is a critical entry point for primary and secondary prevention, care and treatment for key populations of vulnerable youth. Kurth *et al.* (2015) conclude that young people worldwide need more routine access to HIV testing services as this will effectively address the developmental, socio-political and other issues faced by young women and men (Kurth *et al.*, 2015). Thus, this study adopted Kurth *et al.*'s (2015) framework (Figure 2.1) in order to guide the study on the impact of a cash-incentivized, school-based, HIV-prevention intervention on HIV incidence rates among learners enrolled in secondary schools in the Khomas region.

Figure 2.1 A framework linking HCT uptake enablers and barriers to youths' sexual reproductive health (SRH) status continuum



(Source: Kurth *et al.*, 2015)

The basis for the framework is in the premise that the knowledge of serostatus is the starting point for lifesaving ART and reducing sexual, parental, or vertical transmission (Kurth *et al.*, 2015). Figure 2.1 shows the HIV testing barriers and facilitators for youth in the SRH continuum of services. For instance, the reported age of initial partner sex begins at 10 years, while the age of consent for partner sex, HIV testing and medical services ranges from 12 to 18 years for adolescents. This increases the susceptibility and vulnerability of those in the 10-12 years age group, which means that the RHIVA

programme should also focus on this age cohort. Ross *et al.* (2008) note that there is a need to systematically collect more data from younger adolescents aged 10-14 years. However, there remains uncertainty about the appropriateness of questions, the reliability of responses, parental consent and other ethical issues, as addressing these will improve the data from this age group (Ross *et al.*, 2008).

Kurth *et al.* (2015) propose that attention to developmental milestones is critical to linking and retaining care in HIV infected and affected individuals. As such, the focus should be on basing it on youth populations and not on adults. They argue that the sense of invulnerability, which many adolescents feel regardless of epidemiologic risks, also contributes to greater transmission risks in adolescents (Kurth *et al.*, 2015). The framework in Figure 2.1 shows that the role of testing in the continuum of prevention and care for young people is influenced by the legal and sexual status of the key population.

African research on HCT uptake supports Kurth *et al.*'s framework for HIV services for youth in the SRH continuum. For instance, Daire (2007) advocates for the improvement of adolescent voluntary counselling and testing (VCT) services in Malawi. Daire (2007) suggests looking at the availability, accessibility and acceptability of the programmes, as these will improve the uptake of HCT services. Daire (2007) advocated that resources should be mobilised towards expanding youth-friendly HCT, through improved staff training and increasing the number of outlets for services (Daire, 2007). Daire (2007) also called for a complementary increase in HCT campaigns to raise awareness, while at the

same time increasing the availability of services and mobile facilities, consequently making the services more accessible in rural areas (Daire, 2007).

In supporting this view, researchers in Uganda suggest making changes in health centres, removing barriers of costs and changing the hours of health centres. These changes coupled with an improvement in the quality of testing and counselling and the introduction of more youth-friendly service centres would improve youth HCT uptake (Råssjö, Darj, Konde-Lule, & Olsson, 2007). Closer to home, researchers in South Africa found that a new model of HCT service delivery that is appropriate and specifically for adolescents and youth was necessary (MacPhail, Pettifor, Coates, & Rees, 2008). Despite these studies advocating the importance of developing testing facilities, specifically aimed at adolescents as well as offering recommendations of how to do so, there are few published examples of its practice.

In Namibia, Davyduke, Pietersen, Lowrance, Amwaama and Taegtmeiera (2015) identified enablers and barriers to the uptake of provider-initiated testing and counselling for HIV (PITC) in Namibia. They looked at the key opportunities for strengthening this vital aspect of the national HIV response through facility mapping register reviews. They used qualitative methods including focus group discussions and in-depth interviews from four health facilities (clinics and hospitals) in two regions. They found that lay counsellors operating in designated rapid testing rooms located in health facilities carried out PITC in Namibia. They noted a large number of missed opportunities for HIV testing through this

model (Davyduke *et al.*, 2015). They also observed that nurses did not see HCT as an integral part of their role and they were not aware of the national HCT strategy or policy. The study reported that institutional issues acted as barriers to nurses performing or initiating discussions about PITC (Davyduke *et al.*, 2015).

Davyduke *et al.* (2015) recommended wider dissemination and implementation of the national HCT policy. They also recommended increasing privacy of consultation spaces and community sensitisation. They saw these as opportunities for strengthening HCT uptake, which will ensure that symptomatic individuals who are unaware of their HIV status do not fall through the net. In response, Namibia came up with the National HCT strategy that specifically includes adolescents as a priority area (MoHSS, 2014c). The HCT strategy priority objectives include increasing youth-friendly and age-appropriate HCT services, with targets to improve HCT uptake among adolescents. The targets are that 75% of adolescents and youth aged 10-24 years will be counselled, tested and receive results by 2016/17. Furthermore, the strategy includes the promotion of school-based HCT within its operational plan (MoHSS, 2014c).

HCT service uptake among the youth has been unsatisfactory in Namibia, with 31.3% of girls and only 12.9% of youth aged 15-24 having tested and received their results (MoHSS 2008). Young people are less likely to access HCT, despite having knowledge about testing at 61.9% males and 64.9% females (UNICEF, 2012). In 2014, a UNICEF funded pilot School-Based HCT programme was implemented by the Development Aid from

People to People (DAPP). The pilot programme ran from June to September 2014 and it was led by the Ministry of Education (MOE) in collaboration with the Ministry of Health and Social Services (MOHSS) (Amoaten & Sibandze, 2014).

A school-based HCT programme was designed to encourage at risk school-based adolescents to take a voluntary HIV test using an innovative computer-based application specifically designed for young people. Additionally, those who tested positive were immediately to be linked into comprehensive care and support services (Amoaten & Sibandze, 2014). The Regional AIDS Coordinators for Education (RACE Coordinators) were seen as important stakeholders to increase local ownership and sustainability. Parents were involved through parental consent forms, with Life Skills teachers expected to link the HCT programme into the general curriculum through life skills classes (Amoaten & Sibandze, 2014).

Amoaten and Sibandze (2014) assessed how the implementation of school based HCT can lead to positive outcomes in the uptake of HIV Testing and Counselling services among young people. The study assessed whether the provision of school based HCT would increase uptake of the services by young people. In addition, the study also assessed how using computer tablets to conduct a 'test for test' would motivate young people to take an HIV test. The study found that HCT uptake significantly increased amongst the 16-24 age group when testing was available at school, with reported increases in demand for testing by learners from health centres. However, the 16 or 17 year olds need their parents'

consent and the results were reflective of those above 18 years or who had consent forms from parents (Amoaten & Sibandze, 2014).

The study also found that learners, school staff and health centre staff all discussed barriers faced by learners when going for HCT at health centres. These included asking for permission to go to a health centre, which many felt embarrassed to do. Additionally, the operating hours of health centres clashed with school hours. Secondly, learners would sit in the waiting room with general members of the community, often for many hours. This risked them being identified by family members (Amoaten & Sibandze, 2014). Thirdly, learners often complained of being denied services from health centres, though they were over 16. These challenges of access to HCT are major factors contributing to the low use of HCT through health centres. Contrastingly, HCT provided on school premises was quick, efficient and easy. The learners found that the DAPP field officers were helpful, sympathetic and enjoyed the fact that they were close to their own age (Amoaten & Sibandze, 2014).

The study concluded that having HCT based in schools is appropriate to the needs and wants of adolescent learners, as this will increase HCT uptake. However, there are areas that need improvement so as to ensure that all learners participate. These include male learners who are more fearful of HCT, in addition to the female learners in relationships with older men and who thus feel powerless to influence safer sex with their older boyfriends (Amoaten & Sibandze, 2014). The use of computer tablets proved to be very

popular and successful at motivating learners to take up HIV testing and counselling services, particularly if those services were offered within the school premises. The popularity of the computer tablet highlighted the importance of incentives in improving HCT in adolescents.

Additionally, educating young people about condoms is sometimes controversial, with some believing that it promotes early sexual experimentation. A similar concern was encountered during the “My Future is My Choice” programme. The data in that study indicate that virgins who participated in the intervention were more likely to remain sexually inexperienced one year later (Stanton *et al.*, 1998). An evaluation of the data from a randomized, longitudinal trial of “My Future is My Choice” implemented by the Namibian Ministry of Education showed that it can reduce rates of HIV sexual risk behaviour among adolescents aged 15-18, who were sexually inexperienced at the time of enrolment into the intervention. Findings indicated that some intentions regarding preventative behaviour were altered, as were feelings of competence regarding various aspects of condom use and condom negotiation (Stanton *et al.*, 1998).

2.3 Theoretical perspectives

As a social science research, the study looked at critical social science theories. These perspectives include Feminism and Conflict Theory, Constructivism and Symbolic interactionism, Structuralism, and Biomedical perspectives, as well as the political

economy approach. Each perspective offers a central question to direct thinking and provide key concepts to organize answers. Ferrante (2015) argues that taken alone, no single perspective can offer a complete picture of a situation. As such, the present study combined various perspectives. This approach to analysis provides a more complete understanding of the combined intervention approaches used in the RHIVA programme.

2.3.1. Biomedical perspectives

Research into biomedical interventions to prevent HIV infection involves testing the effectiveness of physical and chemical technologies to prevent the transmission or acquisition of HIV (Ross *et al.*, 2008). The goal of such interventions is to moderate the influence of biological or physiological factors that may increase infectiousness or susceptibility to HIV or to prevent infection from progressing after actual exposure. Edwards-Jauch (2009) argues that the biomedical perspective medicalizes HIV/AIDS and locates it within a public health framework. In addition, most biomedical interventions assess outcomes at the individual level; some have been designed to effect community-level change. Bekker, Johnson, Wallace, and Hosek (2015) argue that the starting point for all interventions must be HIV counselling and testing. They propose the use of an interwoven prevention and treatment cascade approach. Subsequently, interventions for both HIV-negative and HIV-positive youth must be adolescent-centred and occur within the socio-ecological context of young people. This is achieved by taking advantage of the

innovations and technologies that the youth have easily incorporated into their daily lives (Bekker *et al.*, 2015).

Pettifor, Bekker, Hosek, DiClemente, Rosenberg *et al.* (2013) reviewed the current state of knowledge on the prevention of sexual transmission of HIV in adolescents. Their review is of relevance to this study as it highlights existing gaps and priority areas for future research in HIV prevention interventions. They note that the greatest promise in preventing sexual transmission of HIV in adolescents comes from biomedical, behavioural and structural interventions (Pettifor, Bekker, Hosek, DiClemente, Rosenberg *et al.*, 2013). They suggest addressing the existing gaps through focusing on priority areas grounded in combinations of biomedical, behavioural and structural interventions.

Biomedical interventions such as antiretroviral therapy (ART) for prevention, voluntary medical male circumcision (VMMC) and vaginal microbicides have been predominately successful (Pettifor *et al.*, 2013). However, most of the researches on biomedical interventions have been conducted with adults, partly due to the ethical complexities of research with minors (Jaspan *et al.*, 2008). Although there is increasing recognition of the importance of engaging children and adolescents in research, there remain some ethical, legal, and logistical challenges (DiClemente, Ruiz, & Sales, 2010).

The interventions that involve HIV risk in adolescents are often complex. However, a combinational approach that incorporates a supportive behavioural, structural, and/or

biomedical intervention has proven successful. The combinational approach addresses the larger contextual and structural landscape within which young people live. However, Edwards-Jauch (2009) argues that biomedical and behaviouralist discourses on HIV/AIDS marginalize the ones that seek causality in the political economy. Edwards-Jauch (2009), notes that these discourses individualize and medicalize what is generally a social and political problem. Edwards-Jauch (2009) emphasizes that only by framing the AIDS epidemic within its political economy, can we come up with successful solutions (Edwards-Jauch, 2009).

Furthermore, Edwards-Jauch (2009) cites structuralist literature such as Barnett and Whiteside (2002 & 2006), Farmer (1993, 1996 & 1999), Hunter (2003), Jackson (2002), and Le Beau and Mufune (2003), which all point to the structural drivers of HIV/AIDS spread. Edwards-Jauch (2009) argues that structuralist literature is ignored in HIV intervention policy choices because governments and Western donors prefer biomedical and behaviouralist responses. The biomedical and behaviouralist responses are more palatable in that they create an illusion of the problem as being solved, while structural drivers such as poverty and inequality present uncomfortable truths that may offend some in power, particularly governments and donors (Edwards-Jauch, 2009).

2.3.2. Behavioural change approach

Behaviouralist discourse individualizes HIV/AIDS as a psychological and behavioural

problem driven by individual autonomous choices. Behaviour change merges the fields of sociology and psychology. Behavioural change interventions have been tested in a range of social settings, including health-care systems, HIV/AIDS service organisations, schools, churches, community centres, commercial establishments, workplaces, correctional facilities, the military and in homes (Auerbach, Hayes, & Kandathila, 2008).

Operario, Kuo, Sosa-Rubí, and Gálarraga (2013) note that the public health scientists turned to theories used in other behavioural health interventions, such as for heart disease, smoking, and diet, and applied these theories to risky sexual behaviour. The authors note that some of the theories used most frequently in HIV prevention include the health belief model (Janz & Becker, 1984), Fishbein and Azjen's (1975) theory of reasoned action, Azjen's (1991) theory of planned behaviour, Bandura's (1977) social cognitive theory and Prochaska and DiClemente's (1983) trans-theoretical model. Other frameworks developed specifically to explain HIV/AIDS behaviours include the information-motivation-behaviour (IMB) model by Fisher and Fisher (1992) and AIDS risk reduction model by Catania, Kegeles and Coates (1990).

Auerbach *et al.* (2008) argue that most behavioural interventions target a number of risk reduction outcomes. The authors further assessed and categorized these interventions into three general categories as follows:

- Psychosocial (such as self-efficacy, perceived risk, personal or interpersonal skills, HIV/AIDS knowledge, intentions to adopt risk-reduction behaviours,

communication with partners)

- Behavioural (such as the safe use of injected drugs, reducing the incidence of sharing drug paraphernalia, encouraging the use of male or female condoms, reducing the number of partners and frequency of unprotected sexual activity and encouraging HIV testing), and
- Biological (such as the incidence or prevalence of HIV or other sexually transmitted infections [STIs], hepatitis and, sometimes, pregnancy, particularly in studies with young people) (Auerbach *et al.*, 2008, p. 44).

Moreover, Operario *et al.* (2013) reviewed the psychosocial and behavioural economic approaches to HIV prevention, and examined the integration and application of these approaches in conditional economic incentive (CEI) programmes for reducing HIV risk behaviour. They found that the behavioural economic interventions complement psychological frameworks for reducing HIV risk by introducing unique theoretical understandings about the conditions under which risky decisions are amenable to intervention. Their findings show some mixed but generally promising effects of economic interventions on HIV and STI prevalence, HIV testing, HIV medication adherence and drug use (Operario *et al.*, 2013).

Social and behaviour change is an essential part of the HIV prevention response that requires complementary, intensive and sustained efforts (MoHSS, 2015). The notion of using incentives to alter individual behaviour falls into the behaviourist theoretical

paradigm. This paradigm assumes that changes in behaviour are automatically attained by applying a stimulus to the subject (Scott, 2000). This falls into the philosophical tradition of methodological individualism, which sees the individual as the starting point for social change. It also converges with the rational choice theories. The rational choice theory is a framework for understanding and often formally modelling social economic behaviour (Aillingham, 2002) and it assumes that all action is fundamentally 'rational' in character and that people calculate the likely costs and benefits of any action before deciding what to do (Browning, Halcli, & Webster, 2000).

Rational choice social exchange contends that exchange relations are also power relations. The resources that people bring to their social relations are rarely equal as bargaining power varies with the dependence of each participant on the exchange relationship. This dependence varies, in turn, on the extent to which there are alternatives available to them (Scott, 2000). If people are able to obtain a particular goal only through one specific social relationship, then they are highly dependent on that relationship and they will have little power to influence the 'price' that they have to pay. This reflects the fact that a monopoly supplier is able to use its market power to command a high price from its customers (Scott, 2000). As such, adolescents as minors heavily depend on their parents' relationship and thus inherit or adopt their structural constraints. These constraints can be in the form of culture prejudice towards both sexuality and gender.

Chong and Kvasny (2007) argue that power is fundamental to both sexuality and gender. The unequal power balance in gender relations that favours men translates into an unequal power balance in heterosexual interactions. Male pleasure supersedes female pleasure, with men having greater control than women do over the circumstances of intercourse. This includes when, how, and with whom the intercourse occurs. Chong and Kvasny (2007) suggest that empowering HIV/AIDS prevention messages should start from women's daily-lived experiences, as this would give them an advantage over authoritative ideologies that put them at risk. Browning (2011) strengthens this point in her argument in the discussion of HIV/AIDS in Africa. Browning (2011), notes that the discussion has become a narrow conversation in its primary focus on preventing HIV/AIDS through sexual behaviour change. Instead, Browning (2011) advocates for a discussion that address the link between patriarchy and HIV/AIDS (Browning, 2011).

2.3.3. Constructivism and symbolic interactionist perspective

The constructivist theory requires learners' interaction and engagement in classroom activities, and as such it identifies with symbolic interactionist perspectives. The learning theory of constructivism evolved from the extensive study of cognitive development (i.e., how thinking and knowledge develop with age) by Swiss psychologist Jean Piaget and the Russian psychologist Lev Vygotsky (Weegar & Pacis, 2012). Piaget and Vygotsky's study of cognitive development provided the foundation for the psychological theory of

constructivism. Constructivists believe that children develop knowledge through active participation in their learning and this is the premise of the RHIVA programme. However, Rummel (2008) notes that Piaget viewed cognitive development as a product of the mind achieved through observation and experimentation, whereas Vygotsky viewed it as a social process, achieved through interaction with more knowledgeable members of the culture.

According to Rummel (2008), Piaget's theory was comprised of two major elements, which are "ages" and "stages". These elements help to predict what learners can and cannot understand at different ages. The present study used Piaget's theory to understand the development of adolescent sexual well-being, including its normative age trends, its reciprocal links with sexual behaviour and its impact on psychological and physical health (Harden, 2014).

UNICEF/UNAIDS (2011) reports that a 2006 review of 83 evaluations found that age-appropriate sexuality education can increase knowledge and contribute to more responsible sexual behaviour. Additionally, around 50% of the evaluated programmes showed decreased sexual risk-taking among participants. The report also noted that in most countries sexual activity starts before age 15 (UN-SG, 2012). The Namibian DHS report (2013) reports that among the never-married young women and men aged 15-24, 52 % each reported that they had sexual intercourse in the past 12 months. However, women were less likely to report having used a condom during their last sexual encounter

(68 % versus 83 %) (MoHSS/NSA, 2013). As evidence shows, sexual activity among young people is a reality. There is thus a need to take action to empower them to make responsible and informed decisions with regards to sexual and reproductive health. This includes HIV/AIDS, gender equality, as well as addressing gender-based violence (UN-SG, 2012).

Vygotsky's theory was very similar to Piaget's assumptions about how children learn, but Vygotsky placed more importance on the social context of learning. In Piaget's theory, the teacher played a limited role whereas in Vygotsky's theory, the teacher played an important role in learning. The present study used Vygotsky's theory to understand the role of teacher support in the RHIVA programme, which characterizes constructivist-learning activities through active engagement, inquiry, problem solving and collaboration with others (Gulati, 2008). Teachers are guides, facilitators, and co-explorers who encourage learners to construct knowledge using prior knowledge, language as well as experiences, beliefs and culture. This provides a way for meaningful learning, where the learners learn best through interacting with their peers, teachers and others. Therefore, constructivism is an approach to teaching and learning which emphasizes that learning is both an individual and social process.

Mufune (2008) argues that many teachers are unprepared and lack confidence to teach sex education due to lack of training resources. Also, teachers in Namibia enter the profession to teach subjects other than sexual reproductive health (SRH). Mufune (2008) also noted

that teachers did not adequately pass HIV/AIDS knowledge to pupils because of lack of training and socio-cultural inhibitions. Moreover, Mfunne (2008) argues that the many reservations teachers have towards sex education may be reflective of their powerlessness to control the process vis-a-vis parents and government authorities. In Namibia, SRH is not graded; consequently, teachers and students alike do not take it seriously. It is in this context therefore, that it is important to understand the RHIVA programme's pathway to change for high risk adolescents that depends on incentivizing adolescents to engage in positive behaviours. This pathway involves equipping them with knowledge and skills in SRH and HIV prevention as well as strengthening the school support system by training both the teachers and the learners on SRH (MIETAfrica, 2014).

2.3.4. Feminism and conflict perspectives

Conflict perspectives view the society as a continuous power struggle among competing groups, often based on class, race, ethnicity, or gender (Kendall, 2016). According to this perspective, societal inequality is a direct result of domination between the classes, with feminists going further and including gender inequality (Ferrante, 2015). Ferrante (2015), notes that feminism counters sexism. Feminism dispels the belief that one sex and by extension, one gender is superior to another. Moreover, this superiority justifies inequalities between sexes. As such, the feminist perspective advocates equality between

men and women (Ferrante, 2015). Feminist theory aids in the understanding of conditions in the society that produce oppression and the possibilities for social changes.

Ferrante (2015) argues through a feminist lens that gender expectations are what we learn through a variety of social mechanisms such as cultural practices and roles. These include the socialisation and commercialisation of gender ideals and situational constraints. Ferrante (2015) argues that the agents of socialisation are significant people, groups, and institutions that act to shape our gender identity. These can be our family, classmates, peers, teachers, religious leaders, popular culture and mass media. Edwards (2007) studied HIV/AIDS, gender and sexuality, focusing on the socio-cultural impediments to women's sexual and reproductive autonomy. Edwards (2007) argues that failure to address the gender imbalances in the ownership and control of productive assets fuels female dependency. This in turn restricts sexual and reproductive autonomy and fuels the spread of HIV.

Edwards (2007) further blames women's current economic dependency on both pre- and post-colonial histories and the cultural dictates of man-headed households. Post-colonial feminists have criticized the objectification of women from the global south in western feminist discourses and they have argued that these women are often cast as passive victims rather than active, creative subjects (Edwards-Jauch, 2009). This results in men being in charge of decisions taken in the family. This approach to the feminisation of HIV/AIDS contradicts the rhetoric of female empowerment in that female dependency,

gender inequality and patriarchal control over women's sexuality are key factors in the transmission of HIV/AIDS. As a result, HIV/AIDS prevention campaigns that assume rational autonomous free choice will only increase the vulnerability of women and adolescents to HIV/AIDS (Edwards, 2007).

2.3.5 Political economy approach

The political economy approach views a social system as comprising interacting sets of major economic and socio-political forces that affect collective behaviour and performance (Benson, 1975). The political economy approach views the socio-political structure as the pattern of power/dependence relations within an organized collectivity. Moreover, it views the socio-political processes as the dominant sentiments and behaviours that characterize the interactions between actors within an organized collectivity (Benson, 1975).

The political economy of HIV/AIDS is characterised by socio-political structures and processes related to the HIV/AIDS pandemic. These include HIV related social-structural conditions that have resulted in the big political debate about whether poverty causes AIDS (Edwards-Jauch, 2009). Authors like Farmer (1991; 1996; 2003), Hunter (2006), Edwards-Jauch (2009) and Alsan, Westerhaus, Hecce, Nakashima, and Farmer (2011) argue that poverty and inequalities are shaped by the political economy within complex human experiences that undermine health resulting in rapidly increasing HIV-rates.

Farmer (2003), in his book on the *Pathologies of power*, uses the political economy approach for an on-the-ground analysis of the relentless march of the AIDS epidemic and multidrug-resistant tuberculosis among the imprisoned and the sick poor of the world. Farmer (2003) argues that political and economic forces have structured risk for AIDS, tuberculosis, and indeed, most other infectious and parasitic diseases. Social forces at work there have also structured risk for most forms of extreme suffering, from hunger to torture and rape (Farmer, 2003).

Edwards-Jauch (2009) argues that while UNICEF, UNDP, UNAIDS and WHO all lament the devastation HIV/AIDS is causing in Africa, other agencies like the IMF and the World Bank have pursued policies that deepen poverty and inequalities (Barnett & Whiteside, 2002). As such, there is a need to frame the AIDS epidemic within its political economy (Edwards-Jauch, 2009). Edwards-Jauch (2009) argues that there are causality linkages between the political economy and HIV/AIDS, while De Vogli and Birbeck (2005) posit that there are causal relationships between World Bank and IMF stabilisation policies and increased susceptibility and vulnerability to HIV and AIDS.

Barnett and Whiteside (2006) also agree that poor people have increased susceptibility and therefore they are at increased risk of contracting HIV. Furthermore, LeBeau and Mufune (2003) posit that epidemics thrive under particular socio-historical conditions. Alsan, Westerhaus, Herce, Nakashima and Farmer (2011), arguing from a functionalist

perspective, noted that HIV/AIDS could not thrive in a society that is stable, orderly and characterized by societal consensus. Any dysfunction in one institution may lead to a breakdown in the entire system (Kendall, 2016).

Alsan *et al.* (2011) reviewed ways in which poverty, structural violence, and infectious diseases confine poor populations to vicious cycles of suffering and despair, with regards to health interventions design. Using disease patterns in Haiti and Rwanda, they noted that social forces interact with human biology and impact who falls ill and who has access to care. They proposed a biosocial analytic framework that provides a useful and effective tool for designing and implementing health interventions to address these inequalities. They argued that any serious attempt to address diseases in resource-poor settings incorporates efforts for social change (Alsan *et al.*, 2011). Biosocial understandings of disease in Haiti and Rwanda reveal that a sustainable response must address the consequences of deep poverty. These include limited transportation, poor housing and food scarcity among others. The biosocial approach to identifying and breaking down barriers to care has resulted in remarkable successes in addressing epidemics in some of the most challenging domestic and global settings (Alsan *et al.*, 2011).

An example of a biosocial intervention approach is the UNAIDS Investment Approach, which uses HCT as a key strategy in prevention, care and support. The approach acknowledges that HCT can prevent new infections, as people recognise their HIV status. The knowledge of HIV status leads them towards the necessary knowledge to prevent

transmissions. HCT could also be the beginning of reducing the risk of HIV exposure through changing people's health-seeking behaviour and social norms. It also identifies those in need of treatment and directs people to the relevant services (UNAIDS, 2011).

Alsan *et al.* (2011) also found that in poor countries that have high levels of social cohesion and equality, HIV-rates did not rapidly increase. The high levels of social cohesion and equality are evident in societies with strong religious cultures or good governance. Countries like Iran, Senegal, Cuba and India have seen low epidemic growth rates and a plateau of low HIV prevalence. Although they face high poverty-related susceptibility, they are able to mobilize fast and effective responses due to low levels of inequalities (Alsan *et al.*, 2011). When social institutions such as education, family, religion and the government work together, they produce a holistic system with high levels of social cohesion and equality (Ferrante, 2015). However, if there is any dysfunction in one of these social institutions, it leads to a breakdown in the entire system, resulting in lower levels of social cohesion and high levels of inequality (Kendall, 2016).

Countries with high levels of social cohesion and equality have unified national planning, a public environment conducive to the social inclusion of people with HIV and those most at risk. They also have strong and active civil society organisations and low levels of income inequality, which are all critical factors that assist in effective interventions. Contrastingly, rich countries with low levels of social cohesion and high levels of inequalities like Namibia, Botswana and South Africa experienced an epidemic. The

epidemic took off very rapidly due to low levels of social cohesion, and it reached extremely high levels. However, on the mobilisation of financial, political and social resources, an appropriate response helped them to curtail the HIV-prevalence. However, they have only managed to reach medium levels of susceptibility to HIV-infection and medium levels of vulnerability to the impact of AIDS (Alsan, *et al.*, 2011; Mahela, 2014).

2.4 Key drivers of HIV/AIDS in Namibia

de la Torre, Khan, Eckert, Luna, and Koppenhaver (2009) identified and described the current evidence on the main behavioural and contextual factors driving the HIV epidemic in Namibia with the intention of assisting in the development of a national prevention strategy for combating the HIV/AIDS epidemic. They found that the factors driving the HIV epidemic in Namibia are numerous and complex. They found that behavioural drivers include multiple and concurrent partnerships combined with inconsistent condom use, intergenerational and transactional sex and low levels of male circumcision. These factors occur within a complex social and economic context (de la Torre *et al.*, 2009). They also noted that behaviours and choices that individuals make regarding sex are shaped by these contextual factors and in Namibia especially by poverty, unequal access to resources by women, mobility and cultural norms regarding partnerships. The low-risk perceptions and widespread alcohol abuse aggravate the problem, and reduce motivation to implement safer sexual practices (de la Torre *et al.*, 2009).

UNAIDS (2009) published the Outcome Framework: Business Case 2009-2011, which outlined the UNAIDS vision for zero new HIV infections, zero discrimination and zero AIDS-related deaths (UNAIDS, 2009). UNAIDS (2009) highlighted that adolescents' and youths' vulnerability is dependent on age, sex and other contextual factors. The report stresses the biological, economic, cultural, and social factors that increase the vulnerability and susceptibility of young women to HIV, in comparison to young men. An estimated one million young people aged 15-24 years are infected with HIV every year, representing 41% of all new infections among those aged 15 years and older (UNAIDS, 2010). Globally, young women make up more than 60% of all young people living with HIV; in Sub-Saharan Africa, the corresponding number is as high as 72% (UNICEF, 2011).

Adolescents engage in a spectrum of sexual behaviours ranging from fantasy and self-stimulation to various forms of intercourse (Crockett, Raffaelli, & Moilanen, 2003). Research shows that there is more to youth sexuality than bodily changes, sexual intercourse, and teenage tantrums. It also involves building emotional maturity, relationship skills, and healthy body image (ACT for Youth Center of Excellence, 2016).

Crockett *et al.* (2003) note that the adolescent period is fundamentally challenging for youth, ranging from altered appearance to fluctuating emotional experiences. This includes psychological vulnerability created by sexual encounters. Social and cultural contexts deeply influence adolescents' responses to these challenges. For example, girls from poor communities are more likely to become pregnant during their adolescence than

those in wealthier communities. This in turn leads to a loss of educational and employment opportunities, keeping them and their children in poverty (Chandra-Mouli, *et al.*, 2015).

The MoHSS (2015) progress report also noted shyness and concerns about being seen to be ‘promiscuous’ by virtue of carrying a condom contributed to teenage pregnancies. The United Nations Children's Emergency Fund (UNICEF) (2008) study found that 25 % of boys and girls in the study sample did not know how to use a condom and/or were too embarrassed to put on a condom.

Another study highlighted the possibility of raising awareness of social and cultural norms which were hindering sexuality communication in an attempt to challenge these norms. The study further stressed the importance of age appropriate sexual education and interventions, saying that it is better when parents start communicating before they believe that their children are engaging in sexual behaviour (Bastien, Kajula, & Muhwezi, 2011). Bastien *et al.* (2011) argue that interventions like RHIVA programme which targets 15-19 year olds might be commencing too late and are often ineffective as they target the wrong age group. The crucial period for adolescents is between the end of childhood and the start of adolescence (10 -14 years) where children for the first time face the choices and the risks that could derail their lives.

A study by Chinsebu, Kasanda, Shimwooshili-Shaimemanya, and Zealand (2011) looked at the indigenous names of HIV/AIDS, in order to reveal what Namibians thought

of HIV/AIDS. They noted that learning about HIV/AIDS in indigenous languages could dispel stigma through the structural strain theory. They found that derogatory names for HIV/AIDS reflected the stigma associated with the disease. People living with HIV or AIDS in Namibia face discrimination and stigma on a daily basis; in the home environment they face rejection by family, friends and partners. This makes it difficult for many people to be open about their HIV status. Secrecy results in silence and denial about HIV/AIDS. This in turn reinforces stigma and undermines efforts to control the spread of HIV (MoE, 2003). Possible stigma and discrimination stop many people from finding out about their HIV status. Affected people also avoid detection and contact with health and social services. The danger with some of these indigenous terminologies is that they subtract from efforts such as HCT (Chinsebu *et al.*, 2011).

Stigma was a major concern amongst learners; particularly male youths felt very vulnerable to ridicule and discrimination which hampered them from using the YEAH app or going for HIV testing (Amoaten & Sibandze, 2014). The 2013 NDHS assessed the level of stigma associated with HIV/AIDS from respondents who had heard of AIDS. Overall, only 28 % of women and 26 % of men aged 15-49 years expressed accepting attitudes. Over the last six years, people have expressed less tolerant attitudes towards people living with HIV and AIDS (MoHSS/NSA, 2013). This is a cause for concern since addressing stigma in a holistic manner is pivotal to HIV prevention strategies and removing barriers to HIV prevention (Shimbuli, Oyedokun & McNally, 2009). The government has efforts in place to reduce stigma and discrimination against those living with HIV. For example,

the education sector policy warns that the failure of an individual to keep the HIV status of a learner or student confidential is liable to a charge of misconduct (Ministry of Education, 2003).

Parker, Aggleton, Attawell, Pulerwitz and Brown (2002) posit that stigma arises from a functionalist perspective, in that stigma is produced and used to maintain a society that is stable, orderly and characterized by societal consensus. Social institutions such as education, family, religion, and the government must work together in order to produce a holistic system (Ferrante, 2015). As such, most societies achieve conformity by contrasting those who are normal with those who are different or deviant. Parker *et al.* (2002) notes that HIV/AIDS is associated with marginalized behaviours and groups. For example, in some settings, men may fear revealing their HIV status because of assumptions that others will point to them as being homosexual. Similarly, women may fear revealing their serostatus because they may be viewed as “promiscuous” or sex workers and be stigmatized as such (MoHSS, 2013).

According to feminist theories, intergenerational sex and poverty are equally strong structural drivers of the spread of HIV infection. Poverty drives many girls to accept relationships with ‘sugar daddies’. These sugar daddies are older men who give money, goods or favours in return for sex, leaving the girls vulnerable to HIV infections. For instance, two studies conducted in the Kavango region reported that economic resources drive teenage pregnancy in the region as the girls engage in sexual relationships with older

men for money and gifts (Nekongo-Nielsen and Mbukusa, 2013). Eloundou-Enyegue and Magazi (2011) noted that some negative attitudes towards condom use in Namibia as related to the same socio-cultural factors. The young girls prefer not using condoms as they see having children as an economic resource. This worsens their chances of being able to find employment and reduces their ability to negotiate healthy relationships and sexual activities. This in turn leads to a loss of educational and employment opportunities, keeping them and their children in poverty.

Nekongo-Nielsen and Mbukusa's (2013) study found that a high number of female learners drop out of school due to pregnancy resulting out of a search for money, gifts and bribes. Twenty (20) learners reported that they snuck out of their parents or guardians' homes to go and sleep with married men in return for gifts. Learners heading households reported that many times food is also hard to come by. The Feminist Theories and Rational Exchange Theories explain these socioeconomic inequalities between men and women as well as the effects as discussed above. The institutional and structural factors that affect vulnerability and the epidemic's socioeconomic consequences are different for women than for men. Feminist economics argues that women's bargaining power within relationships is mediated by the economic opportunities available to them as well as the social context in which these interactions occur (Conrad & Doss, 2008).

2.5 Empirical studies on incentive programmes

Pettifor, MacPhail, Nguyen and Rosenberg (2012) in their study on how cash incentives can prevent the spread of HIV, reviewed 16 studies that aimed to reduce HIV risk with cash transfers, providing incentives for particular risk reduction outcomes, or reducing financial barriers to schooling. They found that there are two main types of cash incentives for behaviour change which they categorized into upstream and downstream drivers of risk (Pettifor *et al.*, 2012). They found that the first category programmes are aimed to address upstream drivers of risk, such as poverty and education, while the second group of intervention programmes provided cash for the downstream behaviour change itself. They noted that the majority of the studies addressed upstream, structural barriers that increase HIV risk such as education or poverty. The upstream risk studies hypothesize that improving the socio-economic situation of vulnerable populations or providing cash payments conditioned on social goods, such as school attendance, will reduce HIV risk. Contrastingly, downstream risk studies hypothesize that providing cash for specific outcomes like a negative STI test will serve as an incentive for individuals not to engage in high-risk behaviour (Pettifor *et al.*, 2012).

The RHIVA programme falls under the upstream risk studies and it is based on the same assumptions. However, Pettifor *et al.* (2012) argue that it was unclear whether interventions premised on rewarding specific HIV-related outcomes actually address factors that place individuals at risk; accordingly, the assumption that cash payments will serve as motivation for HIV/STI reduction behaviours making the relationship complex (Pettifor *et al.*, 2012). The RHIVA programme theory of change process (Mchunu *et al.*,

2012), depends on the complexity and sanctity of the relationship between parents, teachers, schools and the community. In order to effect the necessary positive behaviour change in the adolescents, they need a stable and orderly society characterized by societal consensus. The present study explored these social-structural linkages, in order to facilitate the use of cash incentives towards positive behaviour change in adolescents. Consequently, the political economy discourse locates the socio-structural dimensions of HIV/AIDS spread.

Another assumption of the RHIVA programme is that HCT uptake is the starting point for social change. This approach starts out from the actions of individuals and sees all other social phenomena as reducible to these individual actions. Rewards and punishments in social exchange have generally been termed rewards and costs. The motivation for action is the pursuit of a profitable balance of rewards over costs (Scott, 2000). Cash transfers are an incentive for HIV testing, where the benefit of receiving cash outweighs the fear of the test result, stigma or lack of perceived risk (Scott, 2000). Rational choice theorists recognize that the threat of punishment or the promise of a reward may motivate people just as much as the punishment or reward itself. This assumption recognizes the motivating role of threats and rewards in the conditioning of human behaviour (Scott, 2000).

This study, therefore adopts Kurth *et al.*'s framework (Figure 2.1) on the assumption that the starting point for all interventions must be HIV counselling and testing. As such, an

assumption contextualizes the biosocial interwoven prevention and treatment cascade approach. This approach ensures that the linkages between cash incentives and behaviour change do not marginalize the causality in the socio-political economy. Furthermore, the inclusion of biosocial perspectives enables us to frame adolescent-centred sexual reproductive health interventions, which are within the socio-ecological context of both HIV-negative and HIV-positive youth (Bekker *et al.*, 2015; Kurth *et al.*, 2015).

2.5.1. Conditional cash transfers: International perspectives

Kakwani, Soares and Son (2005) give a historical background to conditional cash transfer programmes citing the two-fold purpose of Conditional Cash Transfers (CCT) programmes. The dual purpose of CCT involves simultaneously acting upon the short and long-term dimensions of poverty. The Escola of Brazil and Progressa of Mexico are examples of successful CCT programmes. The Bolsa Escola of Brazil coordinated by the Ministry of Education started as early as 1995. It aims to increase school attendance and curb dropout rates among children aged 7-14, while the Progressa of Mexico consisted of cash and in-kind transfers. An evaluation of Progressa shows a significant increase in enrolment of boys and girls in schools, as the children, especially boys, were working less in order to attend school.

2.5.2. Cash transfers: African perspective

There is emerging evidence in both randomized trials and in national government programmes from Sub-Saharan Africa. The evidence shows that small, regular and unconditional cash transfers to poor households can reduce adolescent girls' HIV-risk behaviours (Cluver *et al.*, 2013). African studies demonstrate that cash and other types of incentives can increase social protection amongst teenagers and have potential of HIV prevention.

Geffen (2011) reported that the Desmond Tutu HIV Centre in Cape Town provided people with cash incentives to encourage the uptake of HIV counselling and testing. The report showed that people actively recruited with cash were more likely to test positive and be eligible for treatment than voluntary walk-ins. The Zomba Cash Transfer Program (ZCTP) in Malawi and Cash plus Care in Zimbabwe, are some of the successful examples. A randomized study in Malawi found that 50% more people were tested due to cash incentives. The study confirmed that smaller payments made more frequently and closer to the behaviour under study is more effective than larger payments in the future. Thus these smaller payments resulted in an increase of HIV testing uptake (Kidd & Calder, 2014).

The Zomba randomized ongoing CCT intervention targeting young women in Malawi provides incentives in the form of school fees and cash transfers to school going girls. The

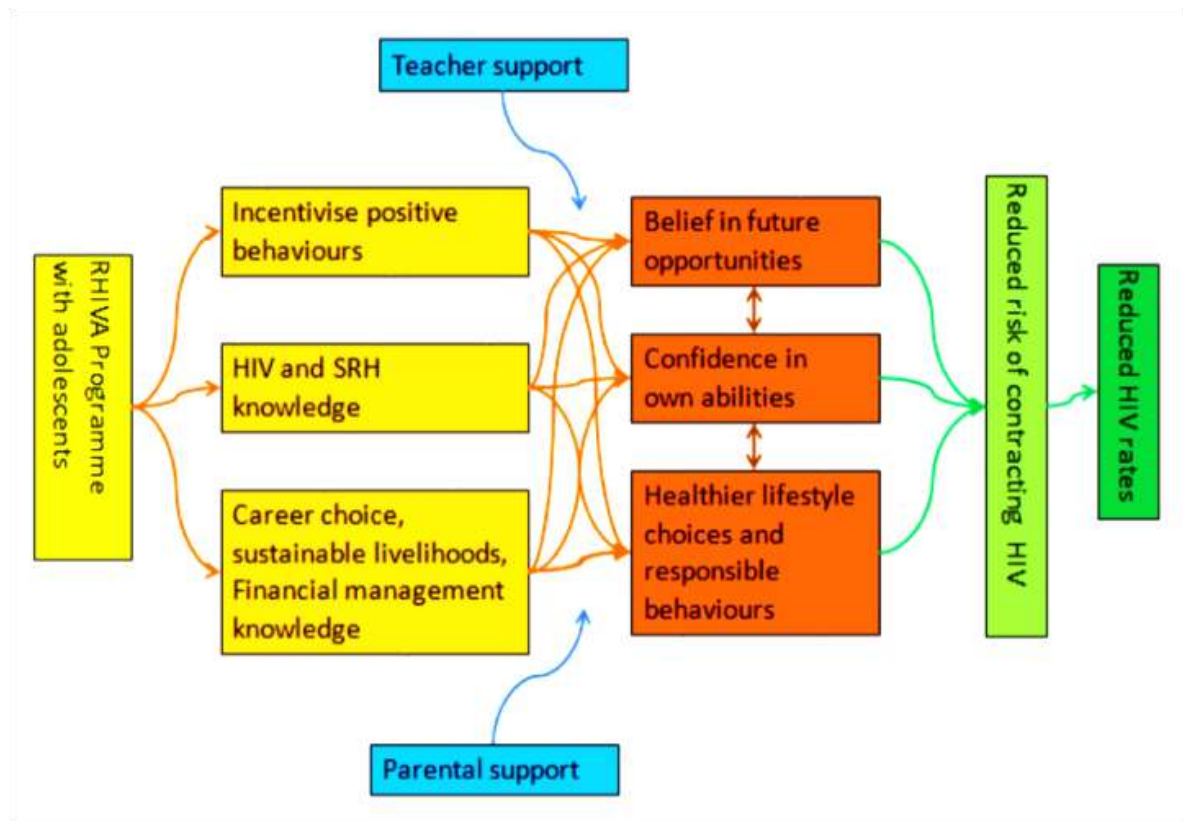
programme supports current and recent dropouts by encouraging them to stay in or return to school. The Zomba CCT programmes' findings support emerging evidence of risk reductions for adolescent girls associated with unconditional household-level cash transfers. The findings show that cash and food can effect maximum reductions in HIV related risky behaviour in the school-going girls (Kidd & Calder, 2014)

The Cash plus Care in Zimbabwe found promising evidence that comprehensive school support (including cash) may reduce HIV risks for orphaned girls (Hallfors, Cho, Rusakaniko, Iritani, Mapfumo, & Halpern, 2011). A Cash plus Care study on cash transfers and social protection interventions explored the potential effects of cash transfers on adolescent HIV-prevention. The study concluded that integrated Cash plus Care reduces male and female adolescent HIV-risk behaviours (Cluvera *et al.*, 2013).

2.6 The RHIVA programme: A conceptual framework for Africa and Namibia

The RHIVA model recognises that becoming infected with HIV is highly possible throughout the life of an individual, with the infection rates varying for different age groups. Figure 2.2 presents the RHIVA Theory of change model.

Figure 2.2 RHIVA Theory of Change model



Source: (MIET Africa, 2012).

Figure 2.2 highlights how parents and teachers provide the support structures for responsible decision-making. This allows the adolescents to believe that the future holds

opportunities for them, as well as have confidence in their own abilities resulting in healthy lifestyle choices and responsible behaviour. Consequently, this reduces their risk of contracting HIV and reduces the high HIV rates in the country (MIETAfrica, 2014). The RHIVA theory of change model assumes that risk rises significantly during the adolescent years, hence the focus on the 15-20 years age group, usually in Grades 10 to 12. The RHIVA programme pathway to change for high risk adolescents depends on incentivizing adolescents to engage in positive behaviours. This involves equipping them with knowledge and skills on Sexual Reproductive Health (SRH) and HIV prevention, as well as equipping them with knowledge on career choices, sustainable livelihoods and financial management (MIETAfrica, 2014).

The RHIVA school-based programme's conditional cash transfer model addresses the risk of HIV infection amongst adolescents through a combinational approach. The approach incorporates a supportive behavioural, structural and biomedical intervention. The biomedical intervention of RHIVA is in incentivizing knowing your HIV status through HIV counselling and testing (HCT). Hull, Wu and Montaner (2012) argue that HIV testing is the portal to sero-status knowledge that empowers linkages to care for HIV treatment and HIV prevention. HCT constitutes a valuable goal for the RHIVA programme learners, as knowing their HIV status is more likely to ensure health protection for the learners, their peers, families and communities (Coates, Richter, & Caceres, 2008).

RHIVA behavioural intervention focuses on learners' attitudes and behaviours around

sexual reproductive health (SRH), including HIV testing, financial issues and future planning, and their feelings about school (MIETAfrica, 2014). The learners' school based behaviours are complex and influenced by various socio-demographic factors. This calls for a structural intervention approach that addresses the larger contextual and structural landscape within which young people live. Numerous risk and protective factors operate at multiple levels for adolescents. These include the individual, peer/teacher/parent, the school and societal levels.

The RHIVA structural intervention approach identifies the determinants of risk and protective behaviours that ensure that interventions are appropriate to the population and context where they are delivered (Pettifor *et al.*, 2013)

2.6.1 RHIVA pilot programme

The KwaZulu-Natal Department of Education (KZNDoe) in partnership with MIETAfrica implemented the RHIVA programme with funding from the Embassy for the Kingdom of the Netherlands (EKN) (KZNDoe & MIET Africa, 2012). The RHIVA programme was a response to the high prevalence rate of HIV and AIDS in the Vulindlela educational district of KwaZulu-Natal, particularly among adolescent girls (KZNDoe & MIETAfrica, 2012). The RHIVA programme is a school-based programme that addresses the risk of HIV infection amongst adolescents using a conditional cash transfer model. Through this programme, learners are given cash incentives to engage in positive

behaviours such as knowing their status and progressing academically (KZNDoE & MIETAfrica, 2012).

RHIVA uses a multi-pronged, cash incentivized, school-based approach to HIV prevention (Mchunu, Van der Elst, Cockerill, Kharsany, & Abdool-Karim, 2012). Consenting grade 9 and 10 students in 14 high schools were enrolled in 2010 and followed up for two years. Students from seven randomly selected schools (referred to as intervention schools) were awarded cash incentives for the attainment of specified milestones. Students in the remaining seven matched schools (referred to as control schools) received the intervention but did not receive cash for attaining the same milestones (Mchunu *et al.*, 2012). All 14 schools received a comprehensive support package comprising of the following:

- strengthened school support structures;
- strengthened Sexual Reproductive Health (SRH) curriculum;
- training in SRH for Life Skills educators;
- a parenting/caregiver support programme;
- access to HCT and youth-friendly mobile SRH; and
- Career guidance services.

In addition, an extracurricular programme called “My life! My future!” was also implemented in all project schools. The programme offers a SRH and wellbeing component and a sustainable livelihoods component, facilitated weekly by youth trained to deliver the programme milestones (Mchunu *et al.*, 2012).

The KwaZulu-Natal (KZN) RHIVA was a pilot for a national and regional programmes. The pilot targeted 3 500 grade 10 and 11 girls and boys attending 14 high schools in the rural Vulindlela circuit in KZN. Cash incentives were paid directly to learners in the intervention schools only for achieving specific milestones. The HIV test milestone achievement in 2010 was 43% in control schools and 63% in intervention schools. In 2011, it was 39% in control schools and 60% in intervention schools, and in 2012, it was 10% in control schools and 47% in intervention schools (MiET, 2014).

According to Mchunu *et al.* (2012), RHIVA has shown the possibility of successfully implementing an incentivized prevention programme through schools. This has several advantages in that it targeted schools in the most impoverished communities, where HIV prevalence is high. This means that the programme can reach large numbers of the most vulnerable adolescents. Moreover, using schools allows for the implementation of a multi-pronged, comprehensive programme, which combines curriculum, incentive and extra-curricular activities. It also takes the structural strain perspective that targets parents through the cover of schools. The structural strain perspective arrests any deviance from any imbalance between culturally valued goals and the socially acceptable ways for achieving those goals (Ferrante, 2015).

The KZN RHIVA programme provided valuable lessons for informing future cash-incentivized interventions targeting adolescents. It also provided a continuum of support

between school and home, and encouraged consistency of messaging by educators and parents/caregivers. The RHIVA programme indicated that the conditional cash transfer model positively influenced learners' behaviour regarding HIV testing and sexual behaviour, and their attitudes towards intergenerational relationships (Mchunu *et al.*, 2012). Given these positive results, MIETAfrica, the Embassy of the Kingdom of the Netherlands (EKN) and the Southern African Development Community (SADC) agreed to test the replicability of the programme at a regional level. The RHIVA regional programme targeted 21 pilot secondary schools in Mozambique, Namibia and Zambia. The regional programme is a collaboration between MIETAfrica, SADC, and the Ministries of Education.

The RHIVA regional pilot programme aims to optimise the unique advantage that schools have in addressing the impact of poverty, HIV/AIDS and other health-related issues on children and youth. The RHIVA programme aims to contribute specifically to the Health Promotion and Safety and Protection elements of CSTL. In support of the CSTL programme, MIETAfrica tested the replicability of the RHIVA programme. The RHIVA regional programme aims to demonstrate the value of an integrated regional response to HIV prevention. The regional pilot programme was implemented in partnership with the SADC Secretariat and the Ministries of Education in each of the three countries; Mozambique, Namibia and Zambia. The programme ran over a three-year period, from March 2013 to December 2015, with funding from the EKN (MIET Africa, 2014)

2.6.2 The RHIVA programme in Namibia

The Namibian RHIVA programme cohort consists of consenting grade 11 learners in 21 Windhoek-based high schools, who were enrolled in 2014 and followed up for two years. Students from two intervention groups of seven randomly selected schools each (referred to as intervention schools) were awarded cash incentives for the attainment of specified milestones. Students in the remaining seven matched schools (referred to as control schools) received the intervention but did not receive cash for attaining the same milestones (Mchunu *et al.*, 2012). The three RHIVA school groups were Control Group (CO); and Intervention Group 1 (IG1) and an Intervention Group 2 (IG2) (Mchunu *et al.*, 2012).

The payment of conditional cash transfers to learners (to a maximum of US\$80 per annum per learner) for the achievement of the following milestones which were chosen by the Ministries of Education:

- Knowing your status! (Annual HIV test): US\$20 paid annually;
- An incentive paid to learners who pass (with an average mark of at least 50%) their June and November examinations: US\$20 per exam paid half-yearly;
- An incentive paid to learners upon completion of a “My life! My future!” annual portfolio, which includes a community audit report, business plan and evidence of

having implemented a project: US\$20 paid annually;

- For learners in Intervention Group one (1) schools (RHIVA-control), the portfolio on non-enhanced Life Skills curriculum;
- Implementation of the “My life! My future!” programme in Intervention Group two (2) (RHIVA) Schools that instructs on:
 - SRHR education,
 - Financial management skills, and
 - Career guidance, including entrepreneurship; and
- Implementation of an awareness programme for parents and caregivers for the Intervention Group 1 and 2 schools, to assist them in supporting their adolescent children in their development and protection from HIV.

The programme is assessing the effectiveness of two levels of intervention – the cash incentives alone (Intervention 1) and cash incentives with enhanced curriculum (Intervention 2) – in effecting behaviour change among adolescents. Hence, the RHIVA regional programme comprises three groups of seven schools each. Two groups each receive a different level of intervention and the third group serves as a control:

- Intervention Group 1 (RHIVA-control): this group will receive a baseline assessment; conditional cash transfer programme, and periodic assessment of milestones.
- Intervention Group 2: this group will receive a baseline assessment, conditional cash transfer programme, periodic assessment of milestones, and strengthened

curriculum in the areas of SRH and entrepreneurship.

- Pure Control Group: this group will receive a baseline assessment and annual evaluation but no further input was given to them.

During the RHIVA programme baseline study in Namibia, stigma and taboos around HIV/AIDS gave rise to a reluctance to participate in the programme by four of the twenty-one pilot schools. Parents were also hesitant to have their children participating in a programme which involves talking about sex, being tested for HIV and using condoms (MIET Africa, 2014). These social structural conditions led to low returns on the numbers of consent forms received from teachers and parents. This resulted in only 651 responses from 1 200 pre-assessment forms, while there were only 458 responses out of 630 from the post assessment survey. The RHIVA programme experienced poor response rates, despite strong advocacy activities with parents and schools before, during, and after the programme implementation.

The RHIVA school-based programme's conditional cash transfer model addresses the risk of HIV infection amongst adolescents through a combinational approach. The approach incorporates a supportive behavioural, structural, and biomedical intervention. The premise of the RHIVA programme intervention is grounded in constructivism, which believes that children develop knowledge through active participation in their learning. As such, the RHIVA programme assumes that learners may continue to take the tests even after the incentives have stopped upon the completion of their high school. The RHIVA

programme's theory of change also depends on the sanctity of the relationship between parents, teachers, school and community. In order to effect the necessary positive behaviour change in the adolescents they need a stable and orderly society characterized by societal consensus. The structuralist pathway to change for high risk adolescents depends on incentivizing adolescents to engage in positive behaviours. This pathway involves equipping them with knowledge and skills in SRH and HIV prevention, as well as strengthening the school support system by training both the teachers and the learners on SRH.

Teachers and parents are guides, facilitators, and co-explorers who encourage learners to construct knowledge using prior-knowledge, language as well as experiences, beliefs and culture. As a result, teacher support and parent support are structural factors in the RHIVA conceptual framework that should not be over-looked. For instance, the Namibian RHIVA programme was threatened at the beginning by parents who were hesitant to have their children participating in the RHIVA programme. These parents' cultural strains presented social structural conditions that led to low returns on the numbers of consent forms received from teachers and parents, thus limiting the assumption of rational autonomous free choice of the learners. If the Namibian RHIVA programme had considered the importance of parental support at the beginning, they would have avoided the poor response rates, through targeted advocacy activities with parents and schools before, during and after the programme implementation. Therefore, this study proposes a

assumes that risk rises significantly during the adolescent years, hence its focus on the 15 to 20 years age group. However, the legal and sexual status of the learners affects RHIVA, as they require parental consent to participate in the programme. As such, parental consent contradicts the programme through parents' socio-structural constraints, which results in some parents not signing consent forms. The legal and sexual status of the learners is a structural factor that not only affects the RHIVA but also the adolescents' access to sexual reproductive health services and HCT uptake.

The RHIVA programme pathway to change for high risk adolescents depends on incentivizing adolescents to engage in positive behaviours. This involves equipping them with knowledge and skills on Sexual Reproductive Health (SRH), financial management and HIV prevention; as well as giving them cash incentives, access to HCT services and strengthening the school and parent/caregiver support (MiET Africa, 2014). These RHIVA programmes aspects in turn, increases HCT uptake. The RHIVA school-based programme's conditional cash transfer model addresses the risk of HIV infection amongst adolescents through a combinational approach. The approach incorporates supportive behavioural, structural and biomedical interventions.

The biomedical linkages of RHIVA are in incentivizing positive behaviours through increasing HCT uptake and condom use attitudes. Hull *et al.* (2012) argue that HIV testing is the portal to sero-status knowledge that empowers linkage to care for HIV treatment and HIV prevention. HIV prevention strongly relies on the sexual behaviour of the

learners and structural linkages exist in aspects such as sexual equity and gender. The structural linkages revolve around adolescent sexuality, with condom use, attitudes, peer pressure and age at first sex having a big impact on the sexual behaviours of adolescents.

2.7 Conclusion

The chapter explored the relationship between cash incentives and behaviour change concerning HCT uptake in adolescents. The literature chapter started with a presentation on the theoretical framework on linkages between cash incentives and positive behaviour outcomes as seen through increased HCT uptake. An overview of the HIV and AIDS particularly amongst the youth and adolescents in Namibia is presented. Strategies to reduce HIV and AIDS amongst the youth are discussed. The chapter ends with a presentation of the conceptual framework on HCT uptake linkages with youth sexual reproductive health status continuum socio-economic barriers and enablers of HCT uptake in Namibia.

CHAPTER 3

RESEARCH DESIGN AND METHODOLOGY

3.1 Introduction

This chapter presents the methodology used to collect the data required to answer the research questions and it explains the methods used to analyse the collected data.

3.2 Research design

The research philosophy reflects how a researcher considers or thinks about the effects of the approach adopted in the development of knowledge (Saunders, Lewis, & Thornhill, 2009). A research design presents a plan for generating empirical data and it is used to answer research questions. Wegner (2010) notes that research designs have three broad categories, which include qualitative, quantitative and mixed research designs. This research uses a quantitative research design. Wegner (2010), notes that a quantitative approach to research uses a positivist perspective that uses objective methods to study objective reality. A quantitative research design allows the researcher to search the facts and answers to questions to reach valid and reliable conclusions. This ensures that the evidence obtains answers to initial research questions as unambiguous as possible (Walliman, 2005).

3.3 Population

The RHIVA program had a population of 4200 school-going boys and girls in 21 high schools in Windhoek within the age ranges of 15 and 20. The units of analysis were the grade 11 learners (2014) and grade 12 (2015) learners. This population was suited for this study as adolescents are prone to making unhealthy lifestyle choices, such as irresponsible sexual behaviours. This age range is crucial for interventions to curb the spread of HIV infections.

3.4 Sample

As a secondary research, the study relied on the RHIVA survey sample design, which involved the selection of 21 pilot schools classified into 7 school groups and 3 intervention groups. The sample selection criteria was guided by the proximity of the schools to health services for HIV Counselling and Testing (HCT), the distance to shops and schools with diverse socio-economic status (MiET Africa, 2014). The three intervention groups consisted of the RHIVA intervention schools (IG2) that received more cash incentives than RHIVA control schools (IG1) and Pure Control schools (CG). Table 3.1 shows the sample description of the secondary data used.

Table 3.1 RHIVA survey sample description

Sample Description			Intervention type			Total
			CO	I1	I2	
Baseline	school group	S1	30	0	30	60
		S2	30	32	31	93
		S3	30	30	30	90
		S4	0	0	33	33
		S5	0	30	30	60
		S6	30	36	32	98
		S7	33	30	32	95
	Total		153	158	218	529
Endline	school group	S1	21	9	22	52
		S2	26	21	26	73
		S3	26	30	25	81
		S4	23	27	26	76
		S5	15	15	23	53
		S6	22	20	17	59
		S7	22	26	16	64
	Total		155	148	155	458

Table 3.1 shows a stratified random sample of Khomas region school learners comprising of 529 learners from the baseline sample and 458 learners from the end line sample.

3.5 Research instruments

The study used data from the IQ Business and MIETAfrica RHIVA survey questionnaires (Appendix A). The questionnaires assessed learners' perceptions and behaviour around sexual reproductive health (SRH), including HIV testing, financial issues and future planning (MiET Africa, 2014). The learner behaviour questionnaire (Appendix A) identified the objectives and outcomes of the RHIVA programme. The aim of the questionnaire was to understand learners' attitudes and behaviours around sexual

reproductive health (SRH), including HIV testing, financial issues and future planning, and their feelings about school (MiET Africa, 2014). The questionnaire had four main sections that addressed the following factors:

- Financial issues: What are the learners' attitudes and practices regarding savings, income, and spending?
- Future and career planning: What are the learners' plans and aspirations for their future?
- Relationships: What are the learners' attitude and behaviour regarding key sexual reproductive health behaviours, such as condom use, intergenerational relationships, and HIV testing?
- School context: How safe do learners feel at school (MiET Africa, 2014)?

3.6 Data preparation and screening procedures

The RHIVA quasi-experimental design survey was best suited for this study as it involves assigning to some individuals or clusters of individuals (intervention group) and not to others (comparison or control group) in a non-random manner. In addition, the frequencies of the outcomes of interest were measured in both intervention and control groups in order to assess the effects of the intervention (Ross *et al.*, 2008). The independent variables included conditional cash transfers, socio-economic status, HIV and SRH knowledge, while the dependent variables were the HIV testing and counselling (HCT) uptake and the behaviour change towards reduced risk of contracting HIV and AIDS in adolescents. As

such, the researcher requested permission from the Ministry of Health and Social Services (MoHSS) to have access to the pre-cash incentive and post-incentive RHIVA data collected from surveys by IQ Business/MIET Africa (see Appendix C for the permission letter). The researcher had access to the RHIVA programme baseline report and SPSS data collected from one of the learner questionnaires (Appendix A).

The RHIVA model's pathway to change for high risk adolescents depends on incentivizing adolescents (in the form of conditional cash transfer factors) to engage in positive behaviours (SRH behaviour factors). This involves equipping them with knowledge on Sexual Reproductive Health (SRH) towards reducing the risk of contracting HIV (HCT uptake factors), as well as equipping them with knowledge on career choices, sustainable livelihoods and financial management (Social-structural conditions). The social-structural conditions consist of parental support and the socio-economic status of the learners' households, as well as school context factors such as teenage pregnancy problem and peer pressure. These structural factors are expected to have a mediation effect on the effectiveness of the conditional cash transfers in incentivizing positive SRH behaviours towards HCT uptake in adolescents. Therefore, this study relied on the Confirmatory factorial analysis (CFA) of the Learner behaviour questionnaire items (Appendix A) to answer the research questions. However, CFA analysis required that the data be screened to address missing values, high Kurtosis and low communalities for the results to be valid.

The study used Gaskin's (2017) data preparation and screening procedures. This entailed searching for missing values, and the variables with substantive missing data (above 10%) or poor quality responses were removed prior to analysis (Hair, Black, Babin, Anderson, & Tatham, 2013). Missing data affects the data analysis from practical and substantive perspectives. In addition, multivariate analysis cannot be performed efficiently, as the missing data effectively reduces a sample's size. Moreover, missing data can introduce biases in the statistical results.

The data screening also included tests for normality, which is a fundamental assumption in multivariate analysis. Multivariate analysis requires that the data be distributed normally and related to each other (Tabachnick & Fidell, 2007). If the variation from the normal distribution is sufficiently large, statistical tests resulting from such are deemed invalid (Hair *et al.*, 2013). Normality tests performed included the measures of kurtosis and skewness (Hair *et al.*, 2013). Kurtosis looks at the distribution's peak or flatness relative to the normal distribution, while skewness describes distributions that are unbalanced and shifted to one side, i.e. right-negative skewness or left-positive skewness, and 0 in the case of balanced normal distribution.

According to Hair *et al.* (2010, p. 73) skewness and kurtosis critical values should be within the range of ± 2.58 for the data distribution to be considered normal. As such, all variables with values above this threshold were removed. The data screening saw the

number of variables reduced from 100 questionnaire items to only 28 variables. Table 3.2

shows the descriptive analysis results for the remaining 28 items.

Table 3.2 Data screening results

Item	RHIVA Group			End Line Survey Total				
	CO	IG1	IG2	N	Mean	Std. Dev	Kurtosis	Skewness
Incomegroup	28%	38%	34%	458	2.24	1.18	-1.38	0.37
school group	33%	35%	32%	458	3.96	1.93	-1.16	0.12
schoolcode	25%	28%	46%	458	10.51	6.12	-1.29	0.04
Age2	34%	32%	33%	458	2.97	0.63	-0.41	-0.03
gender	35%	32%	33%	458	1.70	0.46	-1.25	-0.87
Grade	34%	32%	34%	458	4.00	0.00		
v206_1	34%	33%	33%	458	1.83	0.37	1.23	-1.79
v304_1	34%	32%	34%	458	1.95	0.83	-0.84	0.36
v405_1	33%	32%	35%	458	1.99	0.25	12.90	-0.56
v406_1	33%	33%	34%	458	2.01	0.44	2.18	0.03
v407_1	34%	32%	34%	458	2.17	0.73	0.59	0.64
v408_1	34%	32%	34%	458	1.49	0.50	-2.01	0.05
v410_1	35%	31%	33%	458	1.67	0.80	0.96	1.18
v411_1	35%	32%	33%	458	1.26	0.44	-0.76	1.11
v412_1	35%	33%	32%	458	1.88	1.23	-0.32	1.09
v413_1	34%	31%	35%	458	1.63	0.50	-0.67	0.04
v414_1	34%	33%	33%	458	0.62	0.66	-0.58	0.66
v415_1	34%	33%	34%	458	1.32	0.51	0.83	1.33
v416_1	30%	34%	36%	458	1.80	0.40	0.28	-1.51
v417_1	25%	36%	39%	458	2.62	1.09	-1.27	-0.15
v501	37%	30%	33%	458	1.29	0.49	0.71	1.35
v502	31%	32%	37%	458	1.98	0.96	-1.93	0.03
v503	34%	31%	35%	458	1.66	0.91	-1.40	0.73
v504	33%	32%	35%	458	1.83	0.95	-1.10	0.59
v508	34%	36%	30%	458	1.63	0.78	-0.94	0.75
v509	33%	32%	35%	458	2.37	0.66	-0.69	-0.58
v510	33%	32%	34%	458	2.49	0.86	-0.60	0.59
v511	34%	33%	34%	458	2.76	0.98	-0.93	-0.31
v512	34%	32%	34%	458	1.51	0.50	-2.01	-0.04
v602nu	0%	44%	56%	458	1.72	1.89	-0.76	0.72

3.7 Data analysis

The study used SPSS and AMOS version 23 to analyse the data. The study used descriptive statistics, frequency tables and cross tabulations to summarise the data. To achieve the objectives of the study, the researcher used inference statistics test such as Analysis of Variance (ANOVA), T-tests, F-test and Chi-square tests. In addition, the overall measurement variables from the questionnaires were analysed using the Exploratory Factor Analysis (EFA).

3.7.1 Exploratory Factor Analysis

EFA is a method of defining the underlying structure amongst the variables by grouping variables together on a number of factors (Hair, Black, Babin, Anderson, & Tatham, 2013). The EFA explores the data by providing the researcher with information about how many factors best represent the data. The distinctive feature of the EFA is that the factors are derived from statistical results and not from theory. The EFA analysis is guided by the grouping of the data to cash incentives factors (independent variable), HCT uptake factors (dependent variable), condom use factors (dependent variable) and the sexual behaviour factors (dependent variable). The intervening and control variables include contextual factors such as parental consent and the school environment.

3.7.2 Confirmatory Factor Analysis

The linkages between cash incentives and behaviour change were then tested by using the Confirmatory Factor Analysis (CFA) in AMOS version 23. A structural equation model (SEM) fit was estimated in AMOS version 23. The SEM model estimates the most likely quantity and direction of the relationship between the variables of interest. In carrying out the CFA or EFA analysis, Pallant (2010) posits that the Kaiser-Meyer-Olkin (KMO) test and Bartlett's test determine whether exploratory factor analysis is appropriate. As such, the study uses the Kaiser-Meyer-Olkin (KMO) value to test the strength of the relationship among the variables (or items) in the EFA analysis. The study analysis found that for all factors the KMO value was larger than 0.5. In addition, the items within the scales adequately correlate with a significant ($p < .05$) Bartlett's test. Consequently, this results in addressing all the necessary conditions to conduct an Exploratory Factor Analysis (Pallant, 2010).

The study used the Maximum Likelihood Estimation with Promax rotation in order to determine unique variance among items and the correlation between factors, and to remain consistent with the subsequent CFA. Maximum Likelihood also provides a goodness of fit test for the factor solution (Gaskin, 2017). Promax was chosen because the dataset is quite large ($n=458$ for end line) and promax can account for the correlated factors.

3.8 Reliability and validity

Dependability or consistency determines reliability, suggesting that reliability is the repetition of the same thing under similar conditions. Saunders *et al.* (2009) define reliability as the extent to which the independent administration of the same instrument (or similar instrument) consistently yields the same results under comparable conditions. As such, data screening was done to ensure that items with a low variance and a normal distribution were used for the multivariate analysis, while validity is determined by truthfulness, referring to how the idea fits with actual reality. According to Rugg and Petre (2010), validity refers to the extent to which an empirical measure accurately reflects the concept it measures. In this research, Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA) were used to determine construct validity and to examine the relationships among the constructs.

3.9 Research ethics

As a secondary study, the research used documents and records as data sources. As such, the Ministry of Health and Social Services (MoHSS) granted the ethical clearance to conduct an analysis of the RHIVA project data (Appendix B). Primary research involving minors have ethical complexities involving legal and logistical challenges emanating from the need for assent of parents or guardians. As such, this research used secondary data from the RHIVA surveys and relied on the informed consent given in the original study.

The MoHSS ensured that the original study was sensitive to Namibian ethical issues through seeking parental or guardian permission.

The RHIVA programme experienced poor response rates, despite strong advocacy activities with parents and schools before, during, and after the programme implementation. In the original study, some parents were hesitant to have their children participating in a programme which involved talking about sex, being tested for HIV and using condoms (MIET Africa, 2014). These social structural conditions led to low returns of consent forms received from parents. This resulted in only 629 responses from 1 200 pre-assessment forms, while the post assessment survey received only 458 responses out of 630.

CHAPTER 4

DATA ANALYSIS AND PRESENTATION OF RESEARCH FINDINGS

4.1 Introduction

This chapter presents the findings, statistical analysis and interpretation of the data. This includes the demographic and descriptive statistics, the pre-and post-RHIVA surveys, as well as the descriptive of the variables of interest. The data analysis follows and it involves the use of exploratory factor analysis (EFA), confirmatory factor analysis and structural equation modelling (SEM). The chapter ends with the development of a SEM model of the significant linkages between the cash incentives and behaviour change, in line with the RHIVA programme's theory of change and the research questions.

4.2 Demographic information

This section presents the socio-demographic breakdown of the research participants. The baseline and post review studies had different response rates and totals. The baseline study had a response rate of 44.08% that resulted in 529 usable questionnaires, while the end line study or post assessment had a response rate of 68.25% resulting in 458 usable questionnaires.

4.2.1 School locality

Table 4.1: Income area of the schools

School locality	School	Baseline (N=529)			Endline (N=458)		
		CO	IG1	IG2	CO	IG1	IG2
Low income area	A.Shipena Secondary School	30			26		
	Augustineum Secondary School				23		
	C.J Brandt High School	30			22		
	Delta Secondary School		30			15	
	Hage Geingob High School			30			22
	Highline Secondary school		30			26	
	Immanuel Shifidi Secondary school			32			17
	Jacob Marengo		32			21	
	Total	60	92	62	71	62	39
	% within School locality	28.0%	43.0%	29.0%	41.3%	36.0%	22.7%
Middle income area	Cosmos High school			30			23
	Dawid Bezuidenhout High school	30			21		
	Eldorado Secondary school	30			26		
	Ella du Plessis High School			32			16
	Khomas High School			30			25
	Total	60		92	47		64
	% within School locality	39.5%		60.5%	42.3%		57.7%
	% within interventiontype	39.2%		42.2%	30.3%		41.3%
	% of Total	11.3%		17.4%	10.3%		14.0%
Middle to high income area	Concordia College		36			20	
	Jan Jonker Afr. hoerskool			33			26
	Jan Mohr Secondary School	33			22		
	Total	33	36	33	22	20	26
	% within School locality	32.4%	35.3%	32.4%	32.4%	29.4%	38.2%
	% within interventiontype	21.6%	22.8%	15.1%	14.2%	13.5%	16.8%
	% of Total	6.2%	6.8%	6.2%	4.8%	4.4%	5.7%
High income area	Academia Secondary School		30			30	
	Centauras High School					27	
	Windhoek Technical High School				15		
	Hochland High School			31			26
	WHS					9	
	Total		30	31	15	66	26
	% within School locality		49.2%	50.8%	14.0%	61.7%	24.3%
	% within interventiontype		19.0%	14.2%	9.7%	44.6%	16.8%
	% of Total		5.7%	5.9%	3.3%	14.4%	5.7%
Grand Total		153	158	218	155	148	155
% of Total		28.9%	29.9%	41.2%	33.8%	32.3%	33.8%

Table 4.1 shows the baseline data survey having more learners from the low income schools representing the IG1 (58.2%), than the end line (41.9%). The results show similar trends for the middle-income area schools representing CO with 39.3% at baseline and 30.3% at end line. While the results for the middle to high-income areas schools' representation shows 21.6% (baseline) to 14.2% (end line) for CO and 22.8% (baseline) to 13.5% (IG1). These differences may be a result of the inclusion of more learners from the high income area schools in the end line study. The results show that high-income area schools for end line were represented in all three interventions (CO 9.7%, IG1 44.6% and IG2 16.8%). This is in comparison to the baseline study with only two interventions (IG1 19% and IG2 14.2%).

In addition, One way Analysis of Variance (ANOVA) was used to test the differences between the schools in terms of the survey (baseline or end line) intervention type (CO, IG1 and IG2). The tests are consistent with descriptive statistics in Table 4.1 in that differences exist among the means of the groups. The tests also identified homogeneous subsets of means that are not different from each other. The results are as follows:

Intervention type

Low-income area schools are significantly different from high-income schools ($t = -0.328$, $p = 0.001$), and middle-income schools ($t = -0.264$, $p = 0.001$). However, middle to high-income schools like Concordia, Jan Mohr and Jan Jonker show no significant differences

with the low income, middle income or high-income school means. While the high-income schools and middle-income schools show no significant differences between them. This implies that the socio-economic differences between the schools are more evident, when comparisons are made between the low-income schools with either high income or middle-income schools, but not with the middle to high-income schools.

Survey differences (Baseline and end line)

The ANOVA results show that high-income area schools are significantly different from the other three school groups, which includes low income ($t = -0.191$, $p = 0.001$), middle income ($t = -0.215$, $p = 0.001$), and middle to high income ($t = -0.237$, $p = 0.001$). In addition, there were no significant differences between the three groups in terms of responding to both surveys. As such, the statistics presented in Table 4.1 suggests that interpretation of survey comparison data is statistically significant for low income, middle income and middle to high income but not to the high-income schools.

4.2.2 Gender distribution

The RHIVA programme focused on empowering adolescents with a bias towards young girls. As a result, the gender distribution shows more girls. Table 4.2 presents the gender distribution.

Table 4.2 Gender of the participants

RHIVA Intervention	Area	Endline		Baseline		Total	
		Boy	Girl	Boy	Girl	Boy	Girl
CO	low income area	45.0%	46.1%	37.5%	40.3%	41.7%	43.2%
	middle income area	27.5%	31.3%	40.6%	37.8%	33.3%	34.6%
	middle to high income	12.5%	14.8%	21.9%	21.8%	16.7%	18.4%
	high income area	15.0%	7.8%			8.3%	3.8%
	Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
IG1	low income area	41.3%	42.2%	56.9%	58.9%	49.5%	50.7%
	middle to high income	15.2%	12.7%	31.4%	18.7%	23.7%	15.8%
	high income area	43.5%	45.1%	11.8%	22.4%	26.8%	33.5%
	Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
IG2	low income area	11.5%	32.0%	22.4%	31.7%	18.0%	31.8%
	middle income area	48.1%	37.9%	48.7%	38.7%	48.4%	38.4%
	middle to high income	15.4%	17.5%	13.2%	16.2%	14.1%	16.7%
	high income area	25.0%	12.6%	15.8%	13.4%	19.5%	13.1%
	Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Total	low income area	31.2%	40.3%	36.5%	42.4%	34.0%	41.4%
	middle income area	26.1%	23.4%	31.4%	27.2%	29.0%	25.4%
	middle to high income	14.5%	15.0%	20.8%	18.8%	17.8%	17.0%
	high income area	28.3%	21.3%	11.3%	11.7%	19.2%	16.1%
	Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table 4.2 shows a consistent gender profile for the baseline and end line studies. The end line control group (ECO) shows comparable representation for both males (45%) and females (46.1%) from the low-income area schools. In the same ECO group, the high-income area schools had more boys (15%) than girls (7.8%). However, the baseline control group BCO, did not have any data from the high-income area school, while the BCO low-income schools had 37.5% boys and 40.3% girls. Overall, 41.7% boys and 43.2% girls represented the control group (CO) (low-income schools) and only 8.3% boys and 3.8% girls were from high-income schools.

However, the Chi-square test shows no significant associations ($\text{CMIN} = 1.837$, $\text{d.f} = 0.607$) between the gender and income levels in RHIVA control group. The association test (CMIN) also showed no significant associations between gender and incomes for the end line IG1 group (EIG1) and all baseline groups. However, the test was significant for the end line IG2 (EIG2), and it shows an association between gender and income levels, with a Pearson Chi-Square of 9.891 ($\text{d.f} = 3$, $p = .020$). Table 4.2 shows end line IG2 low-income schools as represented by more girls (32%) than boys (11.5%), while for the high-income schools the reverse is true, with more boys (25.2%) than girls (12.6%).

The significance of the associations in end line IG2 are reflective of socio-political inequalities and more women are found in the low-income areas. More males are found in the high-income levels. As such, the RHIVA programme was designed to address the socio economic inequalities between men and women that make young girls vulnerable to HIV/AIDS. Therefore, these results imply that fully implementing the RHIVA programme interventions in IG2 provides the right set of interventions to addressing this problem. This is because empowering the young girls will ensure that they make healthy lifestyle choices through taking charge of their own lives and reducing their risk of contracting HIV.

4.2.3 Age distribution of respondents

The Namibian RHIVA programme cohort consisted of consenting grade 11 learners in 21 Windhoek based high schools, who were enrolled in 2014 and followed up for two years.

Table 4.3 Age distribution of respondents

RHIVA intervention	Age	Endline			Baseline		
		Boy	Girl	Total	Boy	Girl	Total
CO	14 to 15 years				3.2%	1.8%	2.1%
	16 to 17 years	17.9%	19.3%	19.0%	51.6%	76.1%	70.8%
	18 to 19 years	56.4%	62.3%	60.8%	35.5%	19.5%	22.9%
	+20 years	25.6%	18.4%	20.3%	9.7%	2.7%	4.2%
IG1	14 to 15 years				2.1%	7.7%	6.0%
	16 to 17 years	15.6%	21.8%	19.9%	70.2%	71.2%	70.9%
	18 to 19 years	64.4%	58.4%	60.3%	19.1%	12.5%	14.6%
	+20 years	20.0%	19.8%	19.9%	8.5%	8.7%	8.6%
IG2	14 to 15 years				0.0%	1.6%	1.0%
	16 to 17 years	13.7%	26.2%	22.1%	68.5%	78.1%	74.6%
	18 to 19 years	60.8%	63.1%	62.3%	31.5%	16.4%	21.9%
	+20 years	25.5%	10.7%	15.6%	0.0%	3.9%	2.5%
Total	14 to 15 years				1.3%	3.5%	2.8%
	16 to 17 years	15.6%	22.3%	20.3%	65.6%	75.4%	72.4%
	18 to 19 years	60.7%	61.3%	61.1%	28.5%	16.2%	20.0%
	+20 years	23.7%	16.4%	18.5%	4.6%	4.9%	4.8%
		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table 4.3 shows the age distribution analysis of the cohort of learners who were in grade 11 at baseline (2014) and grade 12 at end line (2015) learners. The ages of learners ranged from 14 to 24 years for baseline and 16 to 26 years. The majority of the learners questioned

in the baseline study were between the ages of 16 and 17 years (74.2%), while at end line, the majority were aged 18 to 19 years (61.1%).

4.3 Descriptive statistics

This section presents the descriptive statistics of the research variables.

4.3.1 Financial issues

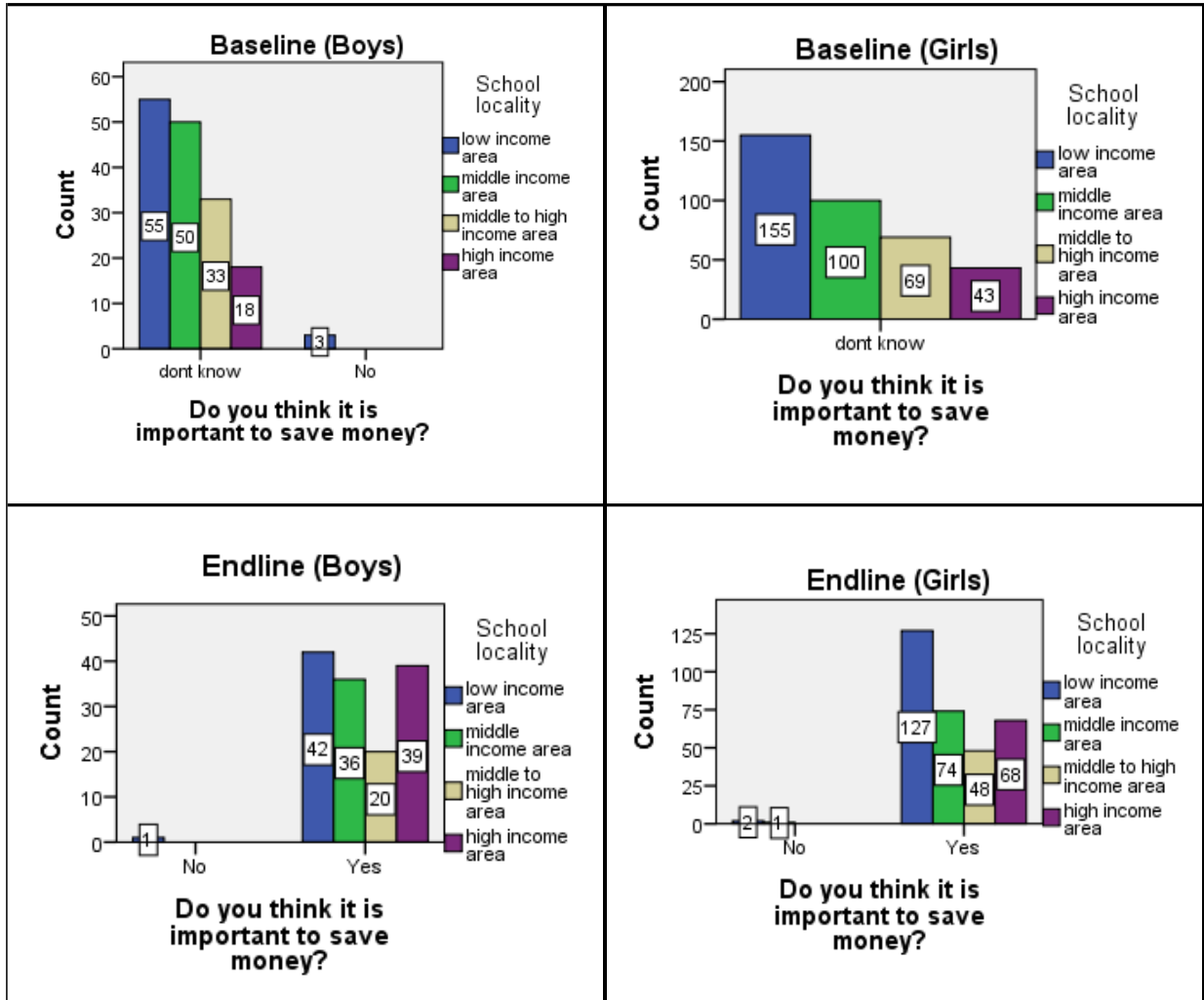
The study used questions from the Financial Issues (section 2 of the questionnaire (Appendix A) to determine the socio economic status of the learners. A cross-tabulation analysis of the questions with the survey, gender, and school locality was carried out. The Pearson correlation test was carried out to determine the significant relationships within the cross-tabulated variables. The analysis found only one significant relationship among the financial issue questions. Table 4.4 presents the correlation results and Figure 4.1 shows the significant variables.

Table 4.4 Financial issues correlation analysis

Variable	Survey	School Locality	Intervention	School	Gender
Survey	1				
School locality	-.100**	1			
RHIVA Intervention	.074*	.121**	1		
school	.057	.045	.428**	1	
Gender	.000	-.059	-.096**	-.039	1
Age	-.507**	-.109**	-.065*	-.020	-.087**
Does someone at your home receive a grant	.029	-.025	-.005	-.027	-.057
Do you think it is important to save money?	-.996**	.099**	-.071*	-.053	-.004
Do you personally have any money saved up?	.054	-.073*	-.050	-.068*	.035
Are you the main income earner at your home?	.001	.002	-.008	-.012	.023
Do you often give all your money to your parents/family?	-.045	.042	-.058	-.063*	.010

Table 4.4 shows that there is no significant relationship for the source of income for the households and social grants access. This implies that the RHIVA programme intervention might not have an impact on the source of income or level of income. In addition, shortcomings in the questionnaire design might also be responsible for the lack of association. However, the results also showed significant relationships for the knowledge on the importance of saving. Figure 4.1 presents the results.

Figure 4.1 Importance of saving



There is a strong negative relationship between the importance of saving and the survey ($r = -0.996$, $p = 0.00$), which suggests that the RHIVA programme improved the learners' knowledge on savings. Figure 4.1 shows that at Baseline both boys (98.1%) and girls (100%) did not know of the importance of saving. However, at End line, both the boys (99.3%) and the girls (99%) were aware of the importance of saving money. The pre-RHIVA ignorance on saving could be attributed to the socio-political structures of

Windhoek. The results suggest that a poor saving culture is a dominant sentiment in Windhoek learners irrespective of their income levels.

4.3.2 Career planning

This section presents the learners' plans and aspirations for their career. Table 4.5 presents the findings.

Table 4.5 Descriptive statistics for career planning

What do you plan to do after finishing school	Baseline			Endline		
	CG	IG 1	IG 2	CG	IG 1	IG 2
I don't know	3%	2%	1%	0%	2%	1%
I will get a job	4%	7%	6%	5%	7%	8%
I will learn a trade (e.g. hairdresser, plumber)	0%	1%	0%	1%	1%	1%
I will further my education (e.g. diploma or degree)	91%	86%	91%	91%	86%	88%
I will start my own business	1%	4%	1%	2%	3%	2%
Other	0%	0%	0%	1%	0%	0%

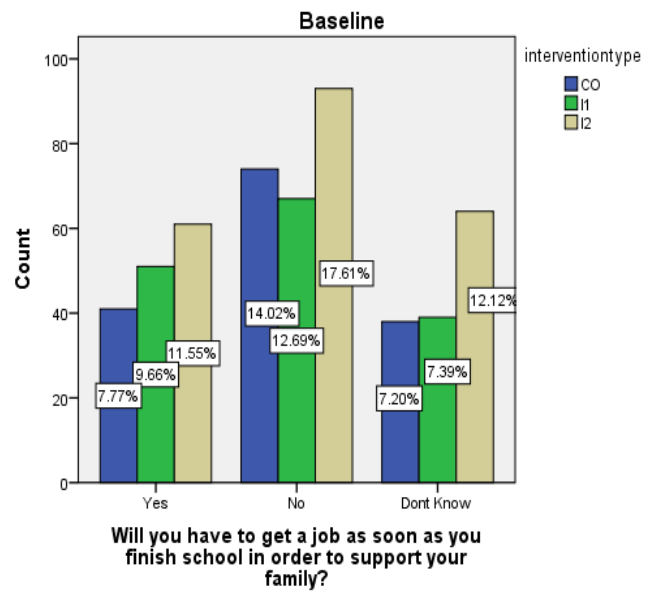
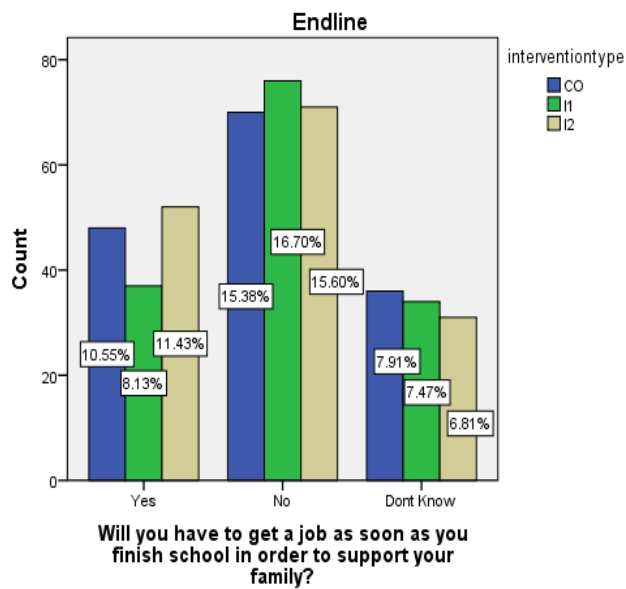
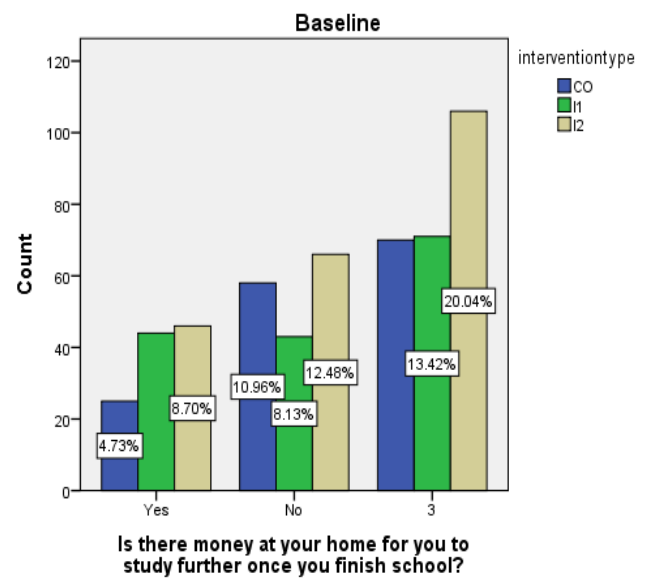
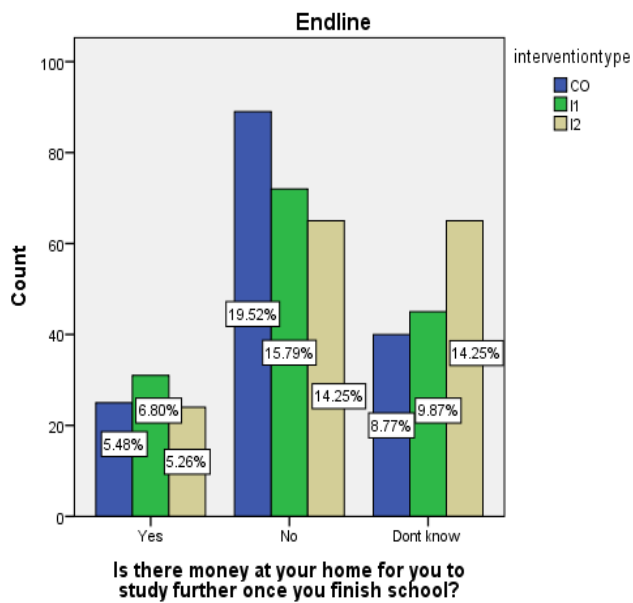
Table 4.5 reflects the learners' plans and career aspirations. The results show that the learners' views across all groups remained the same after the RHIVA programme intervention. The majority of the learners (86 - 91%) would like to further their education

through either a diploma or a degree. While 4 - 8% of the learners plan to get a job once they complete school. The study findings indicate a low interest amongst learners in wanting to start their own business (1 - 4%). This low interest could be an indication of lack of knowledge on entrepreneurship, thus a desire to become skilled through higher education.

4.3.3 Future planning

Figure 4.2 highlights the concerns of the learners pertaining to their future, with most learners being not sure about their families having money for them to further their education (14.25 to 19.52% for the three interventions at end line). However, most felt that they did not have to get jobs soon after finishing school (15.38 to 16.70% at end line). In addition, the results suggest that the majority of the learners at baseline were ignorant (12.12 to 20.04% at baseline compared to 6.81 to 14.25% at end line). Therefore, the RHIVA programme intervention was successful in raising awareness of the importance of future planning as well as encouraging learners to believe that the future holds opportunities for them. This confidence in their future abilities leads to healthy lifestyle choices and responsible behaviour.

Figure 4.2 Future planning



4.3.4 Cash incentive milestones

Cash incentives involve payments to learners for a specified intervention milestone. The learners receive a direct payment of twenty American dollars (US\$20) for achieving a specified milestone. The milestones include knowing your HIV status, academic achievement and completing a life skills course (MiET Africa, 2014). The payment of conditional cash transfers to learners is for the achievement of the following milestones:

- Knowing your status! (Annual HIV test): US\$20 paid annually;
- Passing mid- and end-of-year examinations: US\$20 per exam paid half-yearly; and
- “My life! My future!” annual portfolio: US\$20 paid annually

The RHIVA programme started in March 2014 to December 2015 and that means that learners had to achieve a maximum of eight milestones (4 per year). However, the results show them achieving a maximum of six milestones. Table 4.6 presents the cross-tabulated results of cash incentives by RHIVA interventions of different income groups. Table 4.6 shows no significant differences between low income, middle income and high-income groups, with these three groups all having learners who failed to reach any of the set milestones and thus they did not receive any cash.

The middle to high-income schools in both EIG1 (35%) and EIG2 (15.4%) reached 4 milestones and received US\$80. The results also show that the EIG2 learners achieved more milestones compared to EIG1. Furthermore, the majority of the learners managed to

attain 3 milestones and received US\$60, with the highest percentages from the high to middle income group's EIG1 (35%) and EIG2 (42.3%).

Table 4.6 Cash incentives received

How much money have you received from RHIVA so far?		RHIVA intervention group		
		EIG1	EIG2	Total
no milestone (0)	low income area	25.8%	2.6%	16.8%
	middle income area		15.6%	15.6%
	middle to high income area	0.0%	3.8%	2.2%
	high income area	12.1%	19.2%	14.1%
	Total	16.2%	11.0%	13.5%
1 milestone (US\$20)	low income area	12.9%	15.4%	13.9%
	middle income area		29.7%	29.7%
	middle to high income area	5.0%	3.8%	4.3%
	high income area	25.8%	7.7%	20.7%
	Total	17.6%	18.1%	17.8%
2 milestones (US\$40/N\$400-450)	low income area	14.5%	5.1%	10.9%
	middle income area		29.7%	29.7%
	middle to high income area	25.0%	3.8%	13.0%
	high income area	22.7%	11.5%	19.6%
	Total	19.6%	16.1%	17.8%
3 milestones (US\$60-N\$600-670)	low income area	27.4%	12.8%	21.8%
	middle income area		9.4%	9.4%
	middle to high income area	35.0%	42.3%	39.1%
	high income area	12.1%	11.5%	12.0%
	Total	21.6%	16.1%	18.8%
4 milestones (US\$80/N\$800-920)	low income area	4.8%	35.9%	16.8%
	middle income area		9.4%	9.4%
	middle to high income area	35.0%	15.4%	23.9%
	high income area	15.2%	7.7%	13.0%
	Total	13.5%	16.8%	15.2%
5 milestones (US\$100/N\$1000-1100)	low income area	8.1%	17.9%	11.9%
	middle income area		4.7%	4.7%
	middle to high income area	0.0%	15.4%	8.7%
	high income area	10.6%	26.9%	15.2%
	Total	8.1%	13.5%	10.9%
6 milestones (US\$120/N\$1200-1440)	low income area	6.5%	10.3%	7.9%
	middle income area		1.6%	1.6%
	middle to high income area	0.0%	15.4%	8.7%
	high income area	1.5%	15.4%	5.4%
	Total	3.4%	8.4%	5.9%

Table 4.6 shows that the cash incentives were more effective in middle-to-high-income schools compared to the other income groups. The majority (29.7%) of the middle-income school learners received 2 milestones (US\$40), while, 26.9% of high income school learners received 5 milestones (US\$100) and 27.4% of low income school learners received US\$60. Overall, the cash incentives were effective in middle to high-income schools where 100% (EIG1) and 96.2% (EIG2) attained at least 1 milestone. Figure 4.3 shows the means plot of cash incentives and income group.

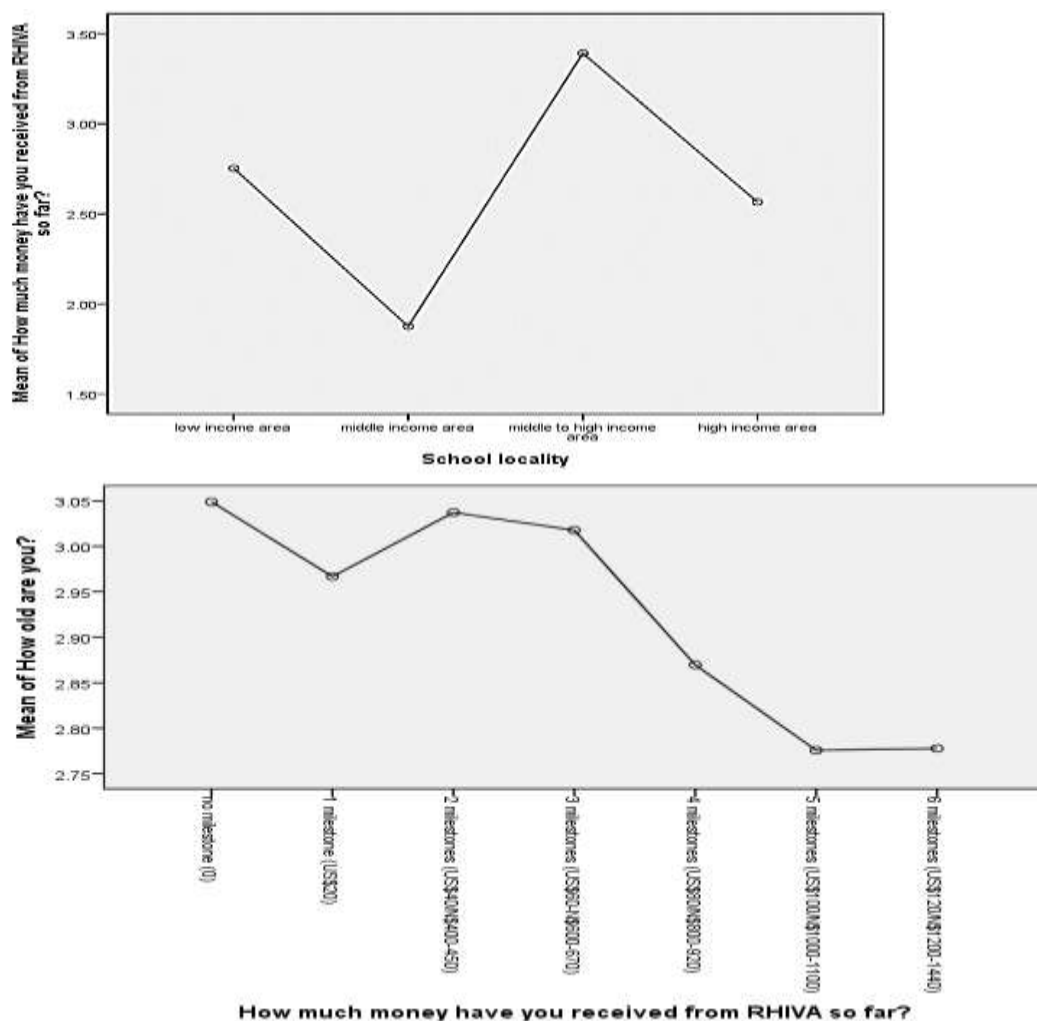


Figure 4.3 Means plots for cash incentives

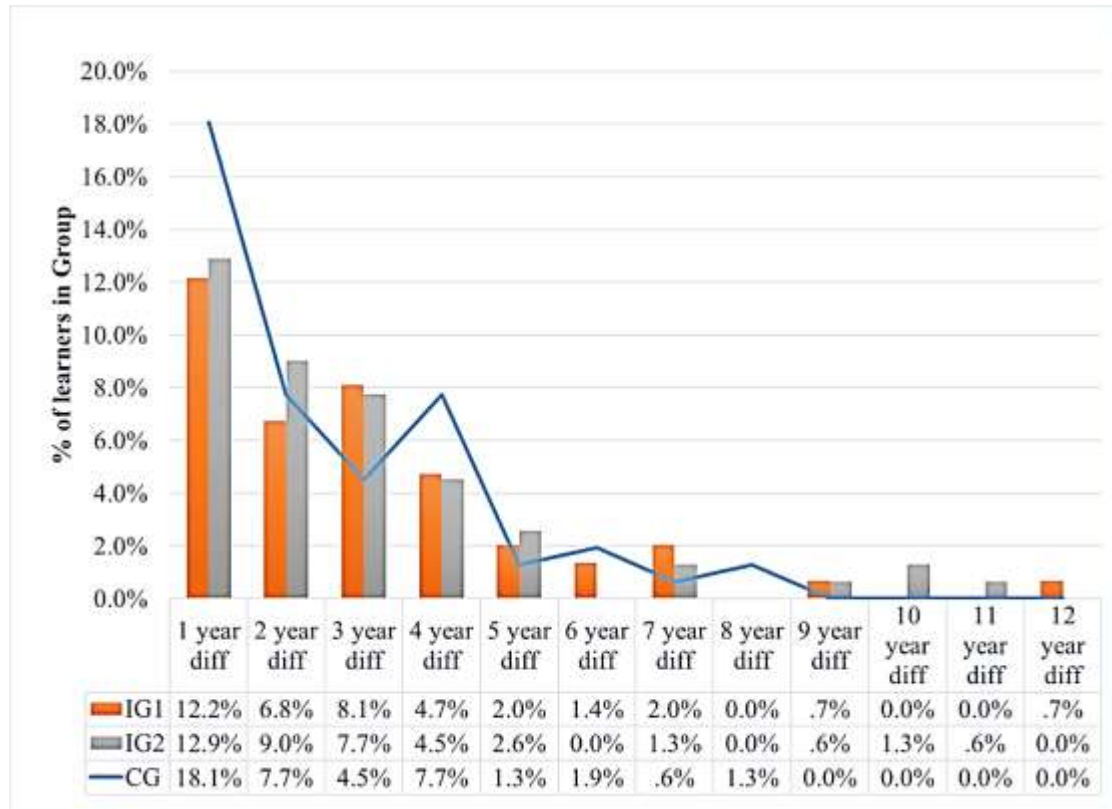
Figure 4.3 shows middle-income schools having received the least amounts on average, while the high-income schools were comparable to low income schools. Figure 4.3 also shows the results for the means plot analysis done on the age groups. The results also show that on average the younger learners attained more milestones compared to the older learners. Bastien *et al.*, (2011) stressed the importance of age appropriate sexual education and interventions by arguing that interventions like RHIVA programme which targets 15-19 year olds, might be targeting the wrong age group. The crucial period for adolescents is between the end of childhood and the start of adolescence (10 -14 years). This assertion is supported by Figure 4.3 results which show the 16 to 17 years age group achieving more milestones compared to the older groups.

4.3.5 Age difference at first sexual encounter

Age at first sex is an important indicator of exposure to the risk of pregnancy and sexually transmitted infections. Young people who initiate sex at an early age are typically at higher risk of becoming pregnant or contracting an STI, than young people who delay the onset of sexual activity. The research contextualised the age at first sex by finding the age difference at first sexual encounter. The age at first encounter helps in determining whether the RHIVA programme is targeting the right age cohort. Figure 4.4 presents the findings.

Figure 4.4 shows that the first sexual encounter spikes at the four-year difference. This means that interventions should start at Grade 9/10 (at 15 years) and they can be intensified as the learners progress to the higher grades. The results are consistent with the RHIVA theory of change model, which assumes that risk rises significantly during the adolescent years. As such, the RHIVA programme focuses on the 15 to 20 years age group, who are usually in Grades 10 to 12. Figure 4.4 also shows that on average there was 2.5% yearly increase in the sexual activity of learners in Grade 9 to Grade 12 (IG1 and IG2 schools), while CO schools experienced a 4.2% yearly increase in sexual activity and those with 1-year difference (18.1%) increased from those with 2-year differences (11.1%). The results suggest that the RHIVA interventions resulted in modest increases of 5.4% (12.2% - 6.8%) in IG1 schools and 3.9% (12.9% - 9%) in IG2 schools.

Figure 4.4 Age difference at first sexual encounter by school groups



Namibia came up with the National HCT strategy that specifically includes adolescents as a priority area (MoHSS, 2014c). The HCT strategy priority objectives include increasing youth-friendly and age-appropriate HCT services, with targets to improve HCT uptake among adolescents. The target was that 75% of adolescents and youth aged 10-24 years will be counselled and tested, and have received results by 2016/17. Furthermore, the strategy includes the promotion of school-based HCT within its operational plan (MoHSS, 2014c).

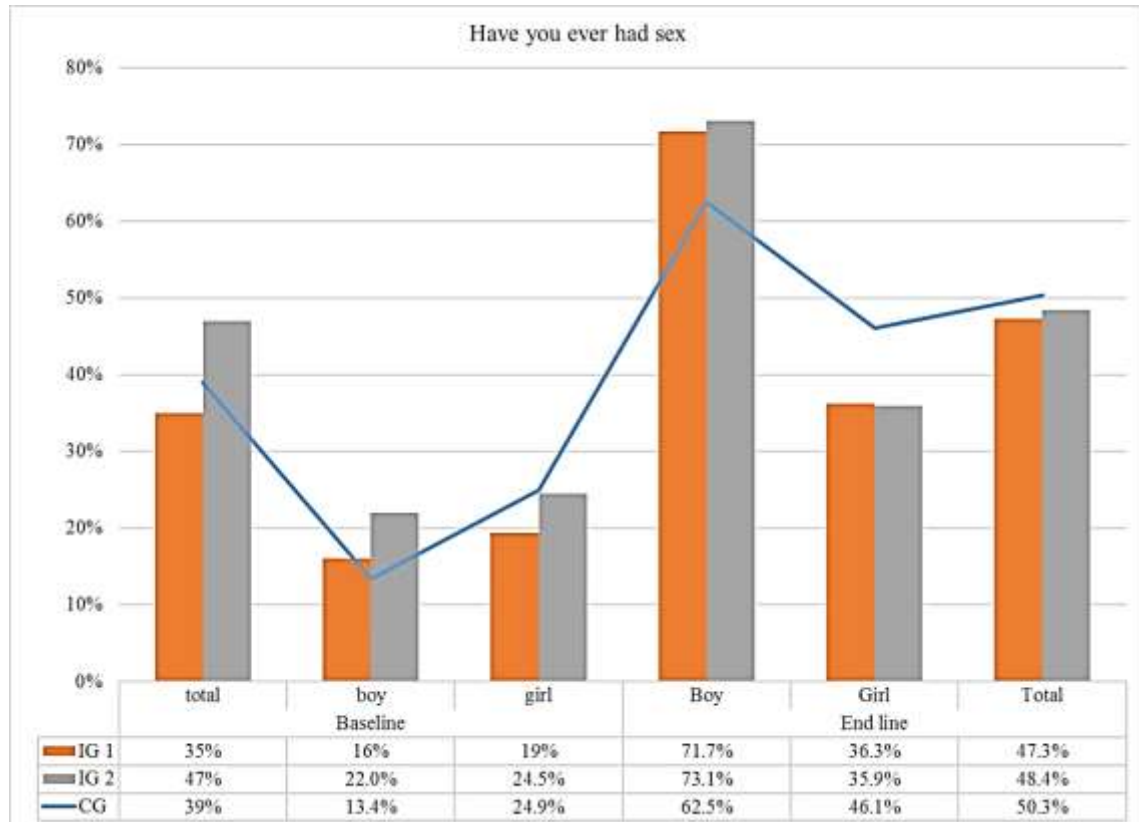
The findings imply that the National HCT strategy should have Grade specific objectives that increasingly provide youth-friendly and age-appropriate HCT services. Furthermore,

the interventions need to be a school-based approach that adopts enhanced Life Skills curriculum from the RHIVA programme, which is “My life! My future!” curriculum design.

4.3.6 Sexual behaviour

Adolescents’ sexual behaviour is a key factor for the spread of HIV and AIDS. As a result, the RHIVA programme focused on sexual behaviour and perceptions on surrounding sexual reproductive health. Figure 4.5 presents the results and the results show that nearly 41% of learners in the baseline sample reported that they have never had sex, while 48.7% of the learners in the end line sample are reportedly more active. At baseline, IG 2 learners (47%) were reportedly more sexually active than learners in either IG 1 schools (35%) or CO schools (39%). However, at end line CO learners (50.3%) were reportedly more sexually active than IG 1 (47.3%) and IG 2 (48.4%). These results suggest that the RHIVA programme was more effective in reducing sexual activity in IG 2 with only a 1.8% increase, while IG 1 (12.3% increase) and CO (11.3%) had comparable increases.

Figure 4.5 Learners who reported ever having sex



In addition, the RHIVA programme was more effective in reducing the sexual activity of females. The results show smaller increases for females across all RHIVA intervention groups compared to their male counterparts. IG 2 females had the lowest increase at 11.4%, whilst females in IG 1 had a 17.3% increase and CO females had a 21.2% increase. Males, on the other hand experienced a more than 50% increase in the frequency of having sex across all groups.

4.4 Inference statistics: Confirmatory Factor Analysis (CFA)

The study used confirmatory factor analysis to evaluate the learners' knowledge, perceptions and behaviour around the key RHIVA theory of change model which forms the basis of the research conceptual framework. The RHIVA model assumes that risk rises significantly during the adolescent years, hence the focus on the 15-20 years age group.

4.4.1 Exploratory Factor Analysis

Table 4.7 show the results of the EFA analysis in SPSS version 23. The EFA analysis extracted eight factors, with KMO (0.728) and Bartlett's test for sampling adequacy being significant and the communalities for some of the variables were sufficiently high (should be above 0.300). The EFA analysis was carried out to check if the 28 retained variables would be loaded together as expected. Table 4.7 results show that the variables adequately correlate and meet the reliability and validity criteria for multivariate analysis using structural equation modelling.

Table 4.7 EFA results for the end line survey data

Factor	Item	Communalities	Loadings	Eigenvalue
Social-Structural Conditions	Income group	.639	.757	1.092
	v413_1	.524	-.803	
	v501	.279	-.497	
CCT	intervention	.999	1.008	2.701
	schoolcode	.267	.530	
	v602nu	.471	.453	
HIV & SRH Knowledge	v405_1	.117	-.354	1.559
	v407_1	.315	.502	
	v410_1	.618	.399	
	v415_1	.179	.479	
	v504	.255	.509	
Responsible Sexual Behaviours	v408_1	.894	.549	1.341
	v414_1	.983	1.101	
Recent Sexual Behaviour	v411_1	.699	.812	4.273
	v412_1	.818	.963	
HCT Uptake	v416_1	.540	.711	1.890
	v417_1	.832	.915	
Alcohol or Drugs Risk	v502	.960	.982	1.240
	v503	.388	.570	
Teacher Support	v511	.596	.777	1.193
	v512	.169	.362	
	schoolgroupnum	.073		
	v206_1	.113		
	v304_1	.124		
	v406_1	.038		
	v508	.117		
	v509	.086		
	v510	.085		

Table 4.7 shows that only 21 out of 28 variables were adequately correlated and met the criterion for multivariate analysis. While the seven variables with a low communality values of less than 0.2, which do not meet the criteria tend to cause problems in model fitness or lead to an undefined CFA model. Therefore, the seven variables were monitored during CFA analysis and they were systematically removed to improve the accuracy of the CFA model.

4.4.2 Confirmatory Factor Analysis

The interactions proposed in the RHIVA Theory of Change (Figure 2.2 in section 2.6) were quantitatively modelled using a comprehensive multivariate analysis in SPSS AMOS version 23. The CFA model fit was derived from the EFA Pattern Matrix of the 28 factored variables (Table 4.7). The end line dataset was used for the model fitting, since the baseline data did not have cash incentives variables. Figure 4.6 presents the CFA model which shows the pathways, interactions and regression weights of the statistically significant RHIVA Theory of Change linkages. In other words, Figure 4.6 quantifies the RHIVA Theory of Change process through a comprehensive multivariate analysis that combines multiple regression, path analysis, factor analysis and analysis of covariance (Hair *et al.*, 2013).

Figure 4.6 CFA model of the RHIVA Theory of change

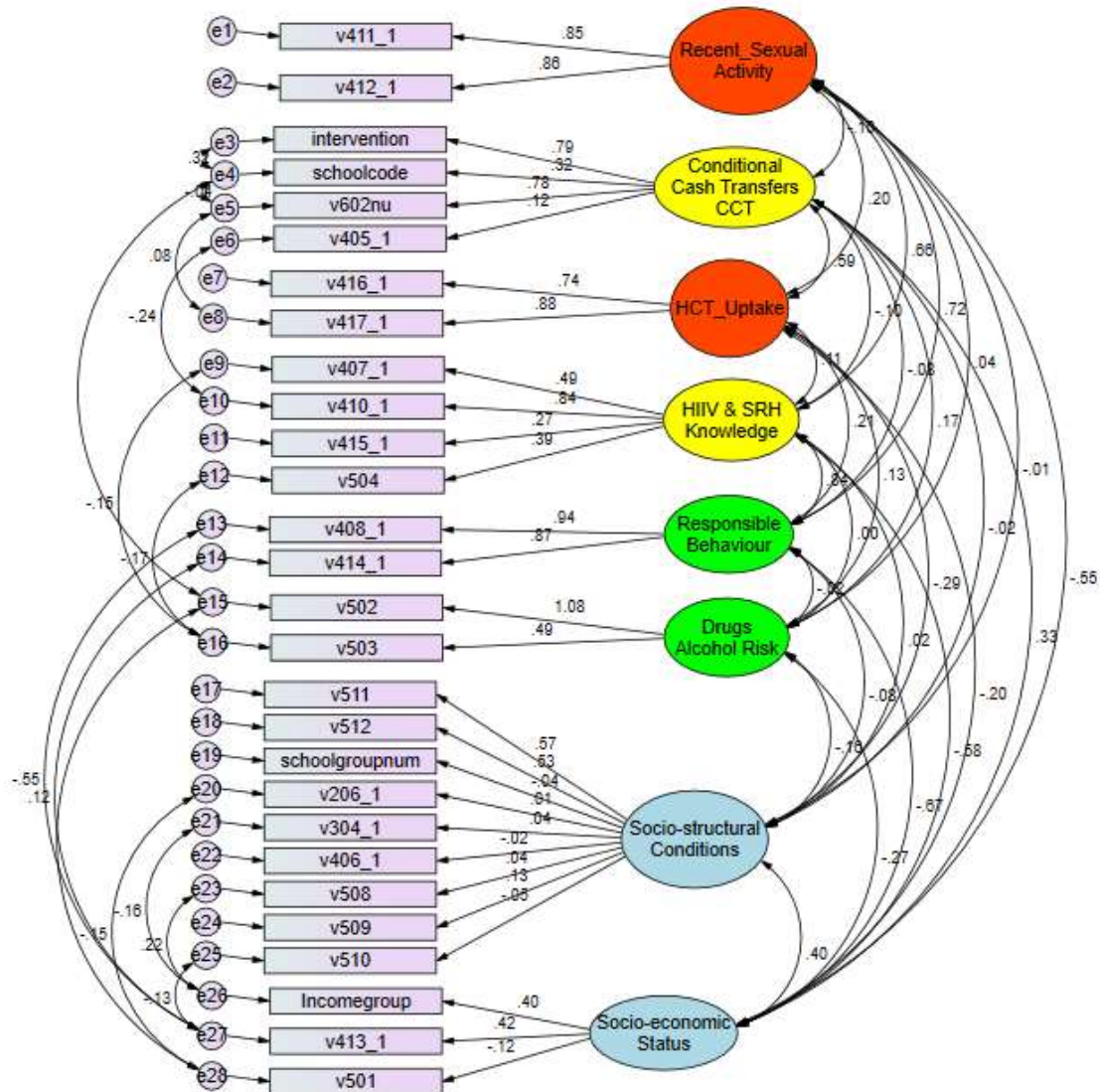


Figure 4.6 shows the RHIVA Theory of Change process interactions and linkages within a fitting CFA model. The factors are conveniently coloured to emulate the RHIVA theory of change process steps in Figure 2.2 (in section 2.5.3). Table 4.8 presents the statistically significant (p -value < 0.05) covariance between the 28 variables and the 8 factors from the EFA Pattern Matrix in Table 4.7

Table 4.8 Linkages between cash incentives and positive behaviour change

Dependent Variables	Link	Independent Variables	Covariance	p-value	Comment
Recent_Sexual_Activity	<-->	HCT_Uptake	0.022	***	Linkage exists
Recent_Sexual_Activity	<-->	HIV_SRH_Knowledge	0.086	***	Linkage exists
Recent_Sexual_Activity	<-->	Responsible_Behaviour	0.124	***	Linkage exists
Recent_Sexual_Activity	<-->	socio_economic_status	-0.097	***	Linkage exists
Conditional_Cash_Transfers	<-->	HCT_Uptake	0.113	***	Linkage exists
Conditional_Cash_Transfers	<-->	Drugs_Alcohol_Risk	0.115	***	Linkage exists
HCT_Uptake	<-->	Responsible_Behaviour	0.028	***	Linkage exists
HCT_Uptake	<-->	Socio_Structural_Conditions	-0.048	***	Linkage exists
HIV_SRH_Knowledge	<-->	Responsible_Behaviour	0.138	***	Linkage exists
HIV_SRH_Knowledge	<-->	socio_economic_status	-0.098	***	Linkage exists
Responsible_Behaviour	<-->	socio_economic_status	-0.146	***	Linkage exists
Drugs_Alcohol_Risk	<-->	socio_economic_status	-0.13	***	Linkage exists
Having sex is proof of love	<-->	Number of sexual partners in the last 12 months	-0.025	***	Linkage exists
Number of times you drank alcohol in the last 6 months	<-->	Do learners at School use alcohol	-0.12	***	Linkage exists
Have you ever had sex	<-->	If you have had sex,how often do you use condoms	-0.041	***	Linkage exists
Teenage pregnancy	<-->	Income group	0.187	***	Linkage exists
Parental Support	<-->	Income group	-0.146	***	Linkage exists
Do learners at School use drugs	<-->	Do you feel safe at school	-0.068	***	Linkage exists
HCT_Uptake	<-->	socio_economic_status	-0.028	0.032	Linkage exists
Drugs_Alcohol_Risk	<-->	Socio_Structural_Conditions	-0.09	0.016	Linkage exists
HCT_Uptake	<-->	Drugs_Alcohol_Risk	0.04	0.006	Linkage exists
Socio_Structural_Conditions	<-->	socio_economic_status	0.106	0.004	Linkage exists
Schools	<-->	Do learners at School use drugs	-0.586	0.004	Linkage exists
Do you think your friends use condoms	<-->	If you have had sex,how often do you use condoms	-0.051	0.002	Linkage exists
Conditional_Cash_Transfers	<-->	socio_economic_status	0.102	0.001	Linkage exists
RHIVA Intervention groups	<-->	Schools	0.932	0.001	Linkage exists
Number of friends who had sex	<-->	Do learners at School use alcohol	-0.075	0.001	Linkage exists
Do you often give all your money to parents/family?	<-->	Do you feel safe at school	-0.027	0.001	Linkage exists
HIV_SRH_Knowledge	<-->	Drugs_Alcohol_Risk	0.001	0.971	No link
Recent_Sexual_Activity	<-->	Socio_Structural_Conditions	-0.003	0.851	No link
Conditional_Cash_Transfers	<-->	Socio_Structural_Conditions	-0.006	0.824	No link
HIV_SRH_Knowledge	<-->	Socio_Structural_Conditions	0.004	0.798	No link
Responsible_Behaviour	<-->	Drugs_Alcohol_Risk	-0.009	0.677	No link
Schools	<-->	Cash Incentives Recieved	-0.288	0.61	No link
Cash Incentives Recieved	<-->	Number of times you tested for HIV	0.047	0.504	No link
Recent_Sexual_Activity	<-->	Drugs_Alcohol_Risk	0.017	0.344	No link
Responsible_Behaviour	<-->	Socio_Structural_Conditions	-0.022	0.247	No link
Did you use a condom last time you had sex	<-->	If you have had sex,how often do you use condoms	0.017	0.193	No link
Conditional_Cash_Transfers	<-->	Responsible_Behaviour	-0.025	0.132	No link
Conditional_Cash_Transfers	<-->	HIV_SRH_Knowledge	-0.024	0.101	No link
Recent_Sexual_Activity	<-->	Conditional_Cash_Transfers	-0.025	0.074	No link
HCT_Uptake	<-->	HIV_SRH_Knowledge	0.011	0.072	No link

Table 4.8 presents the statistically significant covariant linkages. The results show that 28 out of 42 covariant links were statistically significant at the 95% confidence interval (with a p-value is less than 0.05), whereas, in the 14 remaining relationships with a p-value greater than 0.05, the study did not find enough statistical evidence of covariant links.

Table 4.8 results show a significant relationship between the number of sexual partners and sex for love perceptions (covariance = -0.025, $p = 0.001$). The negative relationship suggests that learners who believe that having sex is proof of love are more likely to have never had sex or have a fewer number of sexual partners. Table 4.8 shows that learners are more likely to have drunk alcohol in the last 6 months, if the learners at their school use alcohol (covariance (cov) = -0.12, $p=0.001$). The results also suggest that a relationship exists between income levels and teenage pregnancy (cov = 0.187, $p=0.001$), as well as with parental support (cov = -0.146, $p=0.001$). The existence of this relationship suggests that the underlying factors behind teenage pregnancy in schools can be exacerbated by a lack of parental support in the lower income schools, which leaves girls vulnerable. This assertion is also supported by the fact that learners who do not feel safe at school are mostly likely to give all their money to parents or family (cov= -0.027, $p=0.001$). This renders the conditional cash incentive ineffective in such cases where the conditional cash transfers cannot incentivize the expected behaviours change as the learners would have given their parents or guardian the money.

Another challenge for CCTs in schools where alcohol and drug use is prevalent (cov = -0.586, $p = 0.004$), is that the CCT money may end up being spent on alcohol and drugs. This leads to irresponsible behaviour as schools in which learners use alcohol and the number of friends having sex tend to rise (cov = -0.075, $p = 0.001$).

4.5 Linkages between cash incentives, behaviour change and HCT uptake

The study then further used the 28 significant links and the factorial variables to develop the structural equation model of the linkages and pathways, which can be used to explain the relationship between cash incentives, behaviour change and HCT uptake. The SEM model was developed by linking the significant relationships together, while ignoring the insignificant relationships. Using SPSS AMOS 23, the study managed to fit a model with the following model fit measures (Table 4.9).

Table 4.9 Model Fit Measures

Measure	Estimate	Threshold	Interpretation
CMIN	744.893	--	--
DF	337	--	--
CMIN/DF	2.210	Between 1 and 3	Excellent
CFI	0.864	>0.95	Need More DF
SRMR	0.062	<0.08	Excellent
RMSEA	0.051	<0.06	Excellent
PClose	0.308	>0.05	Excellent

Table 4.9 shows that the structural equation model (SEM) model fits with the measures for Figure 4.7. The results show an excellent model fit.

Figure 4.7 Research Linkages Model

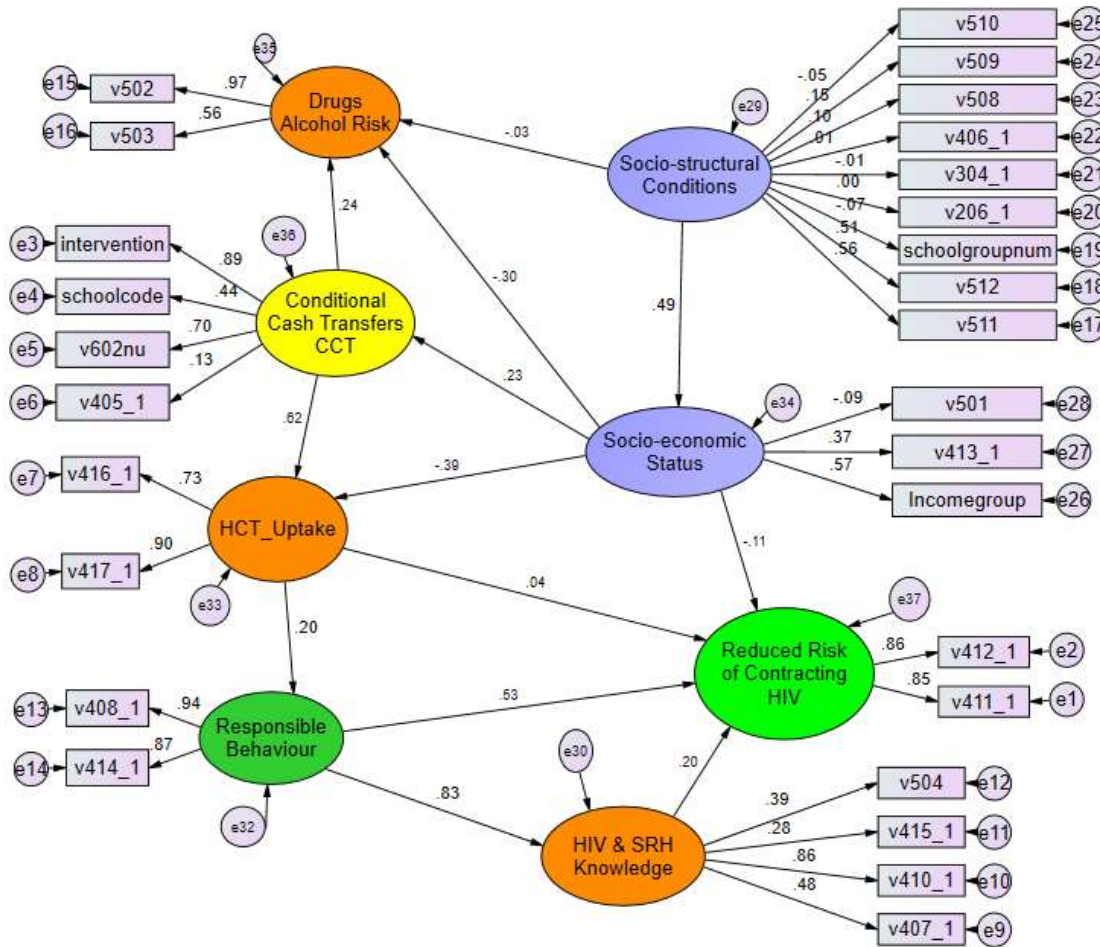


Figure 4.7 presents the research's linkages model for reducing the risk of contracting HIV among adolescents. The final model shows that the socio-economic status of the learners mediates all the linkages between cash incentives and behaviour change. The model notes that the linkage between cash incentives and HCT uptake is 0.617. This implies that when

the Conditional Cash Transfers goes up by 1 standard deviation, HCT uptake goes up by 0.617 standard deviations. Table 4.10 presents the standardized regression weights of the SEM linkages model.

Table 4.10 Standardized Regression Weight of SEM Linkages Model

Dependent Variable		Independent Variable	Estimate	P-value
HCT_Uptake	<---	Conditional_Cash_Transfers	0.617	***
Drugs_Alcohol_Risk	<---	Conditional_Cash_Transfers	0.237	***
Responsible_Behaviour	<---	HCT_Uptake	0.2	***
HIV_SRH_Knowledge	<---	Responsible_Behaviour	0.83	***
Reduced_Risk	<---	Responsible_Behaviour	0.526	***
HCT_Uptake	<---	socio_economic_status	-0.393	***
Conditional_Cash_Transfers	<---	socio_economic_status	0.233	***
Drugs_Alcohol_Risk	<---	socio_economic_status	-0.304	***
Incomegroup	<---	socio_economic_status	0.575	***
schoolcode	<---	Conditional_Cash_Transfers	0.444	***
v602nu	<---	Conditional_Cash_Transfers	0.704	***
v405_1	<---	Conditional_Cash_Transfers	0.132	***
intervention	<---	Conditional_Cash_Transfers	0.89	***
v503	<---	Drugs_Alcohol_Risk	0.563	***
v502	<---	Drugs_Alcohol_Risk	0.971	***
v417_1	<---	HCT_Uptake	0.901	***
v416_1	<---	HCT_Uptake	0.727	***
Reduced_Risk	<---	HCT_Uptake	0.036	0.438
v410_1	<---	HIV_SRH_Knowledge	0.863	***
v415_1	<---	HIV_SRH_Knowledge	0.281	***
v504	<---	HIV_SRH_Knowledge	0.386	***
v407_1	<---	HIV_SRH_Knowledge	0.48	***
Reduced_Risk	<---	HIV_SRH_Knowledge	0.196	0.071
v412_1	<---	Reduced_Risk	0.856	***
v411_1	<---	Reduced_Risk	0.855	***
v414_1	<---	Responsible_Behaviour	0.868	***
v408_1	<---	Responsible_Behaviour	0.944	***
v413_1	<---	socio_economic_status	0.375	***
Reduced_Risk	<---	socio_economic_status	-0.111	0.063
v501	<---	socio_economic_status	-0.095	0.151
socio_economic_status	<---	Socio_Structural_Conditions	0.487	***
v512	<---	Socio_Structural_Conditions	0.512	***
v509	<---	Socio_Structural_Conditions	0.154	***
v511	<---	Socio_Structural_Conditions	0.557	***
v508	<---	Socio_Structural_Conditions	0.102	0.136
schoolgroupnum	<---	Socio_Structural_Conditions	-0.068	0.316
v510	<---	Socio_Structural_Conditions	-0.048	0.477
Drugs_Alcohol_Risk	<---	Socio_Structural_Conditions	-0.03	0.754
v304_1	<---	Socio_Structural_Conditions	-0.01	0.885
v406_1	<---	Socio_Structural_Conditions	0.007	0.914
v206_1	<---	Socio_Structural_Conditions	-0.001	0.991

Table 4.10 shows that the shaded values are not significant because they had p-values greater than 0.05. This implies that the existence of cash incentives in schools with an Alcohol and Drug problem will increase the risk of the learners using the drugs or alcohol tenfold. This highlights the complexity of the learners' socio-structural conditions. Furthermore, the Alcohol and Drug risk has negative relationships with both socio-structural conditions (-0.15) and socio-economic statuses (-0.2).

Societal inequality is a direct result of domination between the classes, with feminists going further and including gender inequality (Ferrante, 2015). The feminist theory aids in the understanding of conditions in the society that produce oppression and the possibilities for social changes. However, the study found no association between the gender and income levels in the end line Control group (ECO), or in the IG1 group (EIG1), as well as all three-baseline groups, while significant linkages were observed in the end line IG2 (EIG2). The association between gender and income levels in EIG2 showed that at end line IG2 low-income schools were represented by more girls (32%) than boys (11.5%), while for the high-income schools the reverse is true, with more boys (25.2%) than girls (12.6%).

As such, EIG2 results are reflective of socio-political inequalities, where young women in the low-income areas are vulnerable to HIV/AIDS. Therefore, these results imply that the full RHIVA programme interventions in IG2 provide the right set of interventions to addressing this problem. The empowerment of young girls in low-income areas will

ensure that they make healthy lifestyle choices through taking charge of their own lives and reducing their risk of contracting HIV; while the same intervention in boys may result in different outcomes, which may involve increased alcohol and drug abuse.

4.6 The conceptual pathway to HIV prevention in adolescents

The study further used the political economy approach to come up with a CCT pathway to HIV prevention developed from the CFA and SEM analysis in chapter 4. The model presents a pathway of interacting factors that are operationalized within the political economy of HIV/AIDS in adolescents, which is characterised by socio-political structures and processes related to reducing the HIV/AIDS pandemic through HCT uptake. The model complements existing literature on HIV related social-structural conditions such as Benson (1975); Farmer, (2003); Edwards-Jauch, (2009); and Alsan *et al.*, (2011). The model posits that poverty and inequalities as represented by income groups (0.575) are shaped by the political economy within complex human experiences that undermine HCT uptake (-0.393) and HIV prevention efforts (-0.14); While the socio-political forces that affect collective behaviour and performance of adolescents include both positive and negative reinforcements like CCTs (0.233), and drugs and alcohol (-0.304). As such, the research model views the socio-political structure as the pattern of power/dependence relations within an organized collectivity of social structural conditions (0.487) such as parental and teacher support. Moreover, the model pathways or linkages represent the socio-political processes, which Benson (1975) defined as the dominant sentiments and

behaviours that characterize the interactions between actors within an organized collectivity (Benson, 1975). As such, this research's political economy approach to develop a CCT Pathway to HIV Prevention through Adolescent HCT uptake is presented in Figure 4.8 as the research model.

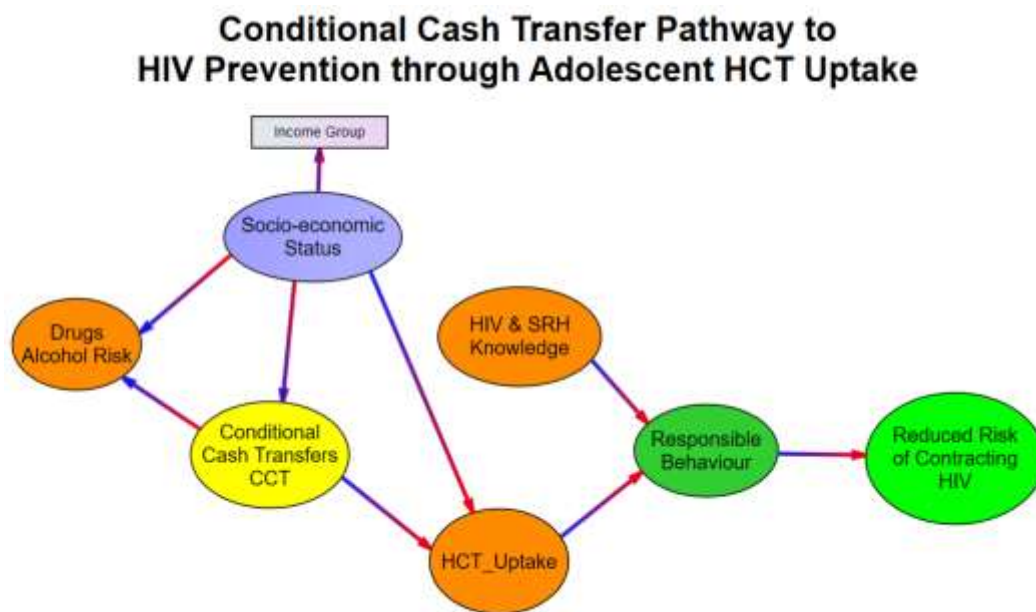


Figure 4.8 Research Model

Figure 4.8 presents the research model developed from the CFA and SEM analysis in chapter 4. The model is grounded in the political economy approach. The political economy approach views a social system as comprising interacting sets of major economic and socio-political forces that affect collective behaviour and performance (Benson, 1975). As such, the research model views the socio-political structure as the pattern of power/dependence relations within an organized collectivity. Moreover, it views the

socio-political processes as the dominant sentiments and behaviours that characterize the interactions between actors within an organized collectivity (Benson, 1975).

4.7 Conclusion

This chapter presented the findings, statistical analysis and interpretation of the data. This included the demographic and descriptive statistics. The exploratory factor analysis (EFA), confirmatory factor analysis and structural equation modelling (SEM) results were also presented. The chapter ended with the development of a SEM model of the significant linkages between the cash incentives and behaviour change, in line with the RHIVA programme's theory of change.

CHAPTER 5

DISCUSSION OF FINDINGS

5.1 Introduction

This study explored the linkages between cash incentives and behaviour change regarding HCT uptake in adolescents, with a focus on the efficacy of the Namibian RHIVA programme. A clear understanding of the situation of young people and their needs is required in order to design and successfully implement interventions to stem the tide of infections among young people (Monasch & Mahy, 2008). As such this chapter will start by evaluating the learners' knowledge, perceptions and behaviour around key RHIVA programme themes on sexual reproductive health, HIV testing, school and financial issues. This will be followed by a discussion on the linkages between cash incentives and behaviour change concerning HCT uptake and HIV prevention. The discussion chapter also assesses the efficacy of the RHIVA programme's cash incentive model in targeting HCT uptake and HIV prevention in Namibia. Lastly, the chapter will suggest ways to improve the RHIVA programme and school-based CSTL strategies in Namibia.

5.2 Discussion of results

The findings and demographic profiles of the data presented in Chapter 4 showed a remarkable degree of consistency and uniformity in the behaviours of learners across the

three RHIVA intervention groups. However, the study found clear differences between the low-income schools with either high income or middle-income schools.

These differences are evident in the effectiveness of the CCTs in incentivizing positive behaviour through milestone achievements. The findings highlight that middle to high-income schools like Concordia, Jan Mohr and Jan Jonker saw 42.3% of the learners achieving 3 milestones (US\$60) and 96% achieving at least 1 milestone. In comparison, 29.7% of the middle-income school learners received 2 milestones (US\$40), while 26.9% of high-income school learners received 5 milestones (US\$100) and 27.4% of low-income school learners received US\$60.

The findings suggest that intervention should start at Grade 9/10 (at 15 years or less) and intensified as the learners progress to the higher grades as it was discovered that on average the younger learners attained more milestones compared to the older learners. Bastien *et al.* (2011) stressed the importance of age appropriate sexual education and interventions, by arguing that interventions like RHIVA programme which targets 15-19 year olds might be targeting the wrong age group. The crucial period for adolescents is between the end of childhood and the start of adolescence (10 - 14 years). This was evident in both the achievement of milestones and age at first sexual encounter.

The study found that the age at first sex is an important indicator of exposure to the risk of pregnancy and sexually transmitted infections. Young people who initiate sex at an

early age are typically at higher risk of becoming pregnant or contracting an STI, than young people who delay the onset of sexual activity. The research contextualized the age at first sex by finding the age difference at first sexual encounter. The age at first encounter helps in determining whether the RHIVA programme is targeting the right age cohort. Since the majority of the learners were 18 to 19 years at end line, the findings suggest that sexual encounters spike at 12 to 15 years. This age cohort is consistent with the age of consent reported in literature, where HIV testing and medical services range from 12 to 18 years for adolescents (Ross *et al.*, 2008).

The results suggest that the risk rises significantly during the adolescent years. The study noted that on average there was a 2.5% yearly increase in the sexual activity of learners from Grade 9 to Grade 12 (IG1 and IG2 schools), while CO schools experienced a 4.2% yearly increase in sexual activity. The findings suggest that the RHIVA interventions resulted in modest increases of 5.4% (12.2% - 6.8%) in IG1 schools and 3.9% (12.9%-9%) in IG2 schools. The findings highlight the need for age-appropriate HCT services, with a special emphasis on the 10 - 14 years age group. MoHSS (2014c) targeted that 75% of adolescents and youth aged 10-24 years should be counselled and tested, and they should receive results by 2016/17. However, the MoHSS strategy does not outline how it plans to ensure that it meets this target. The findings suggest that the National HCT strategy should have Grade specific objectives that increasingly provide adolescent-friendly and age-appropriate HCT services. Furthermore, the intervention needs to be a school- based approach that adopts an enhanced Life Skills curriculum from the RHIVA

programme “My life! My future!” Curriculum design. However, Mufune (2008) noted that teachers in Namibia enter the profession to teach subjects other than sexual reproductive health (SRH). As such, many teachers are unprepared and lack confidence to teach sex education, due to lack of training resources. Thus, there is a need to strengthen the school support system by training both the teachers and the learners on SRH.

Furthermore, the present study supports Mufune’s (2008) assertions on the many reservations teachers have towards sex education as reflective of their powerlessness to control the process vis-a-vis parents and government authorities. This was evident from the lack of significant linkages for teacher support factors. On the other hand, parental support had significant linkages with socio-economic status and teenage pregnancy that is between income levels with teenage pregnancy (cov = 0.187, p=0.00) and parental support (cov = -0.146, p=0.00). This finding suggests that lack of parental support in lower income households is a key underlying factor to the prevalence of teenage pregnancy in schools in the Khomas region. This is further supported by the fact that learners who do not feel safe at school are mostly likely to give all their money to parents or family (cov= -0.027, p= 0.001). Chandra-Mouli *et al.* (2015) support the notion that girls from poor communities are more likely to become pregnant during their adolescence than those in wealthier communities. They argue that this in turn leads to a loss of educational and employment opportunities, keeping them and their children in poverty. Contrastingly, the MoHSS (2015) reported that shyness and concerns about being seen to be ‘promiscuous’ by virtue of carrying a condom contributed to teenage pregnancies. The

Namibian Ministry of Education research showed that it could reduce rates of HIV sexual risk behaviour among adolescents aged 15-18 who were sexually inexperienced at the time of enrolment into the intervention. Findings indicated that some intentions regarding preventative behaviour were altered, as were feelings of competence regarding various aspects of condom use and condom negotiation (Stanton *et al.*, 1998).

The study found that socioeconomic status mediates a link between teenage pregnancy and parental support. The existence of this relationship suggests that the underlying factors behind teenage pregnancy in schools can be exacerbated by a lack of parental support in the lower income families, which leaves girls vulnerable. In support, Nekongo-Nielsen and Mbukusa's (2013) study found that economic resources drive teenage pregnancy in the Kavango region as the girls engage in sexual relationships with older men for money and gifts. Similarly, Eloundou-Enyegue and Magazi (2011) found that young girls who decide to get pregnant do so because they see having children as an economic resource. However, this only worsens their chances of being able to find employment and it reduces their ability to negotiate healthy relationships and sexual activities as pregnancy often leads to a loss of educational and employment opportunities, keeping them and their children in poverty. The study also found that the RHIVA programme intervention was successful in raising awareness of the importance of saving and future planning as well as in encouraging learners to believe that the future holds opportunities for them, and thus instil confidence in their own future abilities resulting in healthy lifestyle choices and responsible behaviour.

The study found that the end line survey sample had a higher number of males from high-income levels. The study also found that the learners were ignorant of the importance of saving. Moreover, the study found that ignorance on saving money was reflective of poor money management and it could be attributed to the low milestone achievements. The results also suggest that a poor saving culture is a dominant sentiment in Windhoek learners irrespective of their income levels.

5.3 Research contributions

The study found a strong relationship between cash incentives and HCT uptake, and the study noted that cash incentives did not result in an increase in the number of times the learners were tested for HIV. Ross *et al.* (2008) noted that HCT uptake in adolescents is affected by uncertainty about the appropriateness of HIV/SRH questions, parental consent and other ethical issues affecting this age group. Furthermore, the study found no significant difference in the learners' household income and savings, before and after the RHIVA intervention since learners who receive money from their parents or caregivers averaged 57% for both the baseline and end line. Overall, the study found no evidence to suggest an improvement on the socio-economic situation of the learners due to the CCT.

According to Feminist theories, intergenerational sex and poverty are strong structural drivers of the spread of HIV infection (MiET, 2014), as poverty drives many girls to accept

relationships with 'sugar daddies'. These sugar daddies are older men who give money, goods or favours in return for sex, leaving the girls vulnerable to HIV infections (Smith, 2002). The present study found that cash incentives presented to learners have the potential to be both a deterrent and incentive for positive behaviour change. The study found that cash incentives (CCTs) in schools where alcohol and drug use is prevalent (cov= -0.586, $p = 0.004$), would see the CCT money being used on alcohol and drugs, while at the same time supporting HCT uptake. This results in conflicting outcomes where at one end the learners buy alcohol and end up having sex (cov = -0.075, $p = 0.001$). Auerbach *et al.* (2008) argue that most behavioural interventions target a number of risk reduction outcomes. These include psychosocial outcomes such as perceived risk, HIV/AIDS knowledge and intentions to adopt risk-reduction behaviours. While, the behavioural outcomes such as the safe use of injected drugs, frequency of unprotected sexual activity and encouraging HIV testing can be impaired by alcohol use.

The study sought to understand the impact of structural factors on incentives and the behaviour model proposed by the RHIVA theory of change model. The study found significant cash incentives relationships, with income groups, HCT uptake, the use of drugs and alcohol among peers and the age of the learners. Overall, the study found cash incentives to be effective in middle to high-income schools, where 100% (EIG1) and 96.2% (EIG2) received at least US\$20. The study also found that the majority (29.7%) of the middle-income school learners received 2 milestones (US\$40), while 26.9% of high income school learners received 5 milestones (US\$100) and 27.4% of low income school

learners received US\$60. The study found that the HIV test milestone achievement in the present study was 42.9% in IG1 and 60% in IG2. This is similar to the HIV test milestone achievements done in the KwaZulu-Natal (KZN) RHIVA pilot, which according to MacPhail and Venables (2015) was 43% in IG1 and 63% in IG2 in 2010; while in 2011 it reduced to 39% in IG1 and 60% in IG2, and at the end of the programme in 2012, it was 10% in IG1 and 47% in IG2 (MiET, 2014).

This study draws upon the theory of social constructivism. The constructivist theory requires learners' interaction and engagement in classroom activities, and as such it identifies with symbolic interactionist perspectives. Constructivism emphasizes the use of cash transfers directly to the learners as actively involving in the learners in the sexual reproductive health. The cash incentives provide a symbolic interaction that makes the learners self-aware of the issues related to their sexual reproductive health. This self-awareness empowers them into making healthy lifestyle choices through taking charge of their own lives and reducing their risk of contracting HIV (Ferrante, 2015).

The study conceptualized the purported linkages between cash incentives and HCT uptake based on the RHIVA theory of change model. The framework assumes that risk rises significantly during the adolescent years, hence its focus on the 15 to 20 years age group. However, the legal and sexual status of the learners affects RHIVA, as they require parental consent to be participate in the programme. As such, parental consent contradicts

the programme through parents' socio-structural constraints, which results in some parents not signing the assent and consent forms.

The study's conceptual framework was operationalised using the RHIVA model's pathway to change for high risk adolescents, which depends on incentivizing adolescents to engage in positive behaviours. The study used inference statistics to operationalise the RHIVA questionnaire descriptive data to come up with measures that gave deeper insights on the learners' responses. In support, Alsan *et al.* (2011) reviewed ways in which poverty, structural violence, and infectious disease confine poor populations to vicious cycles of suffering and despair with regards to health interventions design.

The study further used the political economy approach to come up with a CCT pathway to HIV prevention developed from the CFA and SEM analysis in chapter 4. The model presents a pathway of interacting factors that are operationalised within the political economy of HIV/AIDS in adolescents, which is characterised by socio-political structures and processes related to reducing the HIV/AIDS pandemic through HCT uptake. The model complements existing literature on HIV related social-structural conditions such as Benson (1975); Farmer (2003); Hunter (2006); Edwards-Jauch (2009); and Alsan *et al.*, (2011). The model posits that poverty and inequalities as represented by income groups (0.575) are shaped by the political economy within complex human experiences that undermine HCT uptake (-0.393) and HIV prevention efforts (-0.14); while the socio-political forces that affect collective behaviour and the performance of adolescents

includes both positive and negative reinforcements like CCTs (0.233), and drugs and alcohol (-0.304). As such, the research model views the socio-political structure as the pattern of power/dependence relations within an organized collectivity of social structural conditions (0.487) such as parental and teacher support. Moreover, the model pathways or linkages represent the socio-political processes, which Benson (1975) defined as the dominant sentiments and behaviours that characterize the interactions between actors within an organized collectivity (Benson, 1975). This study's model and findings suggest that the learners may not continue to take the HIV test due to socio-structural constraints that limit the positive reinforcement effects of CCT. Lastly, the RHIVA regional programme was carried out in Mozambique, Namibia and Zambia. There is need to test this linkages model across all the RHIVA regional pilot programmes in order to validate these findings.

5.4 Conclusion

The chapter discussed the findings of the study. The study showed a significant cash incentives relationship especially when it comes to HCT uptake and the use of drugs and alcohol. RHIVA intervention schools had more cash incentives compared to RHIVA control schools. The study found that strengthened school support structures and cash transfers are important in increasing HCT uptake by adolescent learners. Cash injections play a key role in increasing HCT uptake. The RHIVA programme had a positive impact on learners' sexual behaviour. RHIVA programme interventions resulted in 10%

reduction in sexual activity. It is noted that for sustainability of these programmes teachers and parents need to embrace and encourage learners on issues pertaining to responsible reproductive sexual behaviours.

CHAPTER 6

RECOMMENDATIONS AND CONCLUSION

6.1 Introduction

This chapter makes recommendations and concludes the study. The chapter addresses the research objectives of the study using the findings and analysis given in chapter 5.

6.2 Recommendations

The study recommends and suggests ways to improve the RHIVA programme and school-based CSTL strategies in Namibia:

- The study recommends the active engagement of young people in the design, implementation, monitoring and evaluation of HIV policies, services and programmes. As such, engagement enhances their leadership skills and equips them to demand youth-friendly health services and programmes as well as enhancing the wider dissemination and implementation of the national HCT policy.
- The study also recommends increasing privacy of consultation spaces and community sensitisation; while at the same time creating opportunities for strengthening structural support systems. The adequate resources necessary for

expanding youth-friendly services should result in the services becoming more accessible even in rural areas.

6.3 Conclusion

The research sought to establish whether there is a significant difference between the learners' knowledge, perceptions and behaviour around sexual reproductive health in the pre- and post-implementation of the Khomas RHIVA programme. The aim of the research in this regard was to determine the impact of the RHIVA programme on the knowledge and sexual behaviour of young people.

The study concludes that the RHIVA programme did not target the right age cohort since the majority of the learners were 18 to 19 years at end line, yet the findings suggest that sexual encounters spike at 12 to 15 years. The study notes that if the intervention is not done earlier, the sexual activity of learners from Grade 9 to Grade 12 will increase exponentially every year. The research also concludes that parental support is a key underlying factor to the prevalence of teenage pregnancy in the Khomas region schools. The study supports the notion that girls from poor communities are more likely to become pregnant during their adolescence than those in middle to high-income communities. This in turn leads to a loss of educational and employment opportunities, keeping them and their children in poverty.

The RHIVA programme had noticeable impact on the learners' sexual behaviour, especially the learners who received the full RHIVA intervention (IG2). The study concludes that the full RHIVA programme intervention results in 10% reduction in sexual activity. The study concludes that the RHIVA programme is effective for learners younger than 16 years and for females from middle to high-income areas. The study also concludes that cash incentives do not result in an increase in the number of times the learners tested for HIV. The study found that direct cash payments to learners have the potential to be both a deterrent and incentive for positive behaviour change as direct cash payments are prone to other socio-structural strains such as the prevalence of alcohol and drug use at school and community.

The study concludes that learners' behaviour and sentiments on taking the HIV test are mediated by socio-structural constraints that limit the positive reinforcement effects of CCT. Lastly, the RHIVA regional programme was carried out in Mozambique, Namibia and Zambia. The study also explored the linkages between cash incentives and behaviour change regarding HCT uptake in adolescents, with a focus on the efficacy of the Namibian RHIVA programme. The study concludes that conditional cash transfers are very important in increasing the HCT uptake of the learners, while socio-economic status and responsible behaviours play key roles in increasing HCT uptake towards reducing the risk of contracting HIV in adolescents.

6.4 Further research

The RHIVA regional programme was carried out in Mozambique, Namibia and Zambia. As such, there is a need to test the linkages model across all the RHIVA regional pilot programmes in order to validate the study findings. There is need for further research geared towards using the political economy approach in gender studies.

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APPENDICES

APPENDIX A: LEARNER BEHAVIOUR QUESTIONNAIRE

RHIVA LEARNER QUESTIONNAIRE



This questionnaire will help us to improve the RHIVA project and to determine if it is successful. Participating in this study is voluntary.

Your answers are confidential: your teachers, families and friends will *not* know how you answer.

Some questions may be personal and embarrassing, but they are necessary for us to get important information. We will NOT ask you your name, so your answer will be secret.

You do not have to answer this questionnaire if you do want to. Are you willing to answer?

IF NOT, STOP HERE. If you decide to answer the questionnaire, please answer honestly.

Here is an example on how to complete the questions. Circle the answer that you want to give.

E.g. In which country do you live?

1

Mozambique

2

Zambia

3

Namibia

If you want to correct yourself or change your answer, put a cross over the circle you had made. Put a circle around the new answer you want to give. For example:

E.g.	In which country do you live?	1	Mozambique	2	Zambia	3	Namibia
------	----------------------------------	---	------------	---	--------	---	---------

IDENTIFICATION

Unique learner number

Interview date
(day/month/year)

Name of School

BACKGROUND

101 Are you a boy or girl?

1 Boy 2 Girl

102 How old are you?

[WRITE IN THE BOX HOW OLD YOU ARE]

103	What grade are you in at the moment?	1	Grade 9
		2	Grade 10
		3	Grade 11
		4	Grade 12

FINANCIAL ISSUES

201	Is there an adult at your home who earns an income?	1	Yes	2	No		
202	Does someone at your home receive a grant (e.g. disability or child grant)?	1	Yes	2	No	3	Don't know
203	Do you think it is important to save money?	1	Yes	2	No		
204	Do you personally have any money saved up?	1	Yes	2	No		
205	Are you the main income earner at your home?	1	Yes	2	No	3	Don't know

206	Do you often give all your money to your parents/family?	1	Yes	2	No
-----	--	---	-----	---	----

207	Where do you get your money from? Do not include money from RHIVA but any extra money.	1	I don't have money
		2	My parents/caregivers give me money
		3	Another family gives me money
		4	I have a job
		5	I sell things (e.g. chickens/sweets)
	You can give more than one answer.	6	A friend gives me money
		7	Any other? Please tell us here

208	How do you spend your money? Do not include money from RHIVA but any extra money.	1	I don't have money
		2	I buy airtime
		3	I buy food and snacks for myself
		4	I buy food for my family
		5	I give my money to my parent/caregiver/family
	Please tick all the ways that you spend your money. You	6	I buy clothes for myself

can give more than one
answer.

- 7 I spend money on entertainment (e.g. I watch a movie at the cinema, go to a soccer game)
- 8 I buy alcohol
- 9 I buy drugs
- 10 I spend money on transport (e.g. taxi fare)
- 11 I buy my school uniform, stationery, other school supplies
- 12 I pay my school fees
- 13 Other? Please tell us
-

FUTURE AND CAREER PLANNING

301 What do you plan to do after
you finish school?

CHOOSE ONLY ONE.

- 1 I don't know
- 2 I will get a job
- 3 I will learn a trade (e.g. hairdressing, plumbing)
- 4 I will further my education (e.g. diploma or degree)
- 5 I will start my own business
- 6 Other? Please tell us.
-

302	Is there money at your home for you to study further once you finish school?	1	Yes	2	No	3	Don't know		
303	Will you have to get a job as soon as you finish school in order to support your family?	1	Yes	2	No	3	Don't know		
304	How much support do you feel you get from your parents?	1	Very much	2	A lot	3	A little	4	None
305	Do you feel more or less confident now about achieving your future goals than you did before the RHIVA program	1	Much more confident	2	A little more confident	3	Not more confident	4	Less confident
306	In the past year did you think of any new ideas for your career or for a business you want to start?	1	Yes	2	No				

RELATIONSHIPS

401 How easy is it for you to express yourself in front of others?

1	Very easy	2	Easy	3	Difficult	4	Very difficult
---	-----------	---	------	---	-----------	---	----------------

402	Which of the following do you think is abusive behaviour? CIRCLE ALL THAT APPLY.	1	A person deliberately hurts another person's feelings
		2	Someone calls another person bad names
		3	A man does not greet a woman on the street
		4	Someone forces another person to look at pornography
		5	A learner is prevented from going to school
		6	A parent or caregiver does not take care of a sick child
		7	A learner at school makes other learners feel scared or unsafe

- 403 Do you think it is OK to force someone to have sex? 1 Yes 2 No 3 Don't know
- 404 Do you think it is OK to have sex with a teacher? 1 Yes 2 No 3 Don't know
- 405 Do you think you must have sex to prove you love someone? 1 Yes 2 No 3 Don't know
- 406 Do you think it is OK to have sex with a person who is 15 years older than you? 1 Yes 2 No 3 Don't know
- 407 How many of your friends have had sex? 1 None 2 Some of them 3 Most of them 4 All of them
- 408 Have you ever had sex? 1 Yes 2 No
- 409 If yes, at what age did you first have sex?

410	How many sexual partners have you had during the past 12 months (1 year)?	1	None
		2	One
		3	Two
		4	Three or more
		5	Don't know

411	Are you currently in a sexual relationship?	1	Yes	2	No
-----	---	---	-----	---	----

412	If you are in a relationship that includes sex, how long have you been in this relationship?	1	I am not in a sexual relationship
		2	0–6 months
		3	6–12 months
		4	More than a year
		5	Don't know

413	If you have had sex, how often do you use condoms?	0	Have not had sex	1	Never	2	Sometimes	3	Always

414 Did you use a condom the last time you had sex?

0	Have not had sex	1	Yes	2	No	3	Don't know
---	------------------	---	-----	---	----	---	------------

415 Can you say no if your partner wants sex and you do not want to?

1	Yes, it is easy	2	Yes, but it is not easy	3	No
---	-----------------	---	-------------------------	---	----

416 Do you know your HIV status?

[WE DO NOT WANT TO KNOW THE RESULT.]

1	Yes	2	No
---	-----	---	----

417 How many times have you been tested for HIV?

1	Never	2	Once	3	Twice	4	More than twice
---	-------	---	------	---	-------	---	-----------------

418 Is there anything one can do to avoid getting HIV?

1	Yes	2	No	3	Don't know
---	-----	---	----	---	------------

419	Have you made any changes in your sexual behaviour to avoid getting HIV?	1	Yes	2	No
-----	--	---	-----	---	----

420	IF YES to making changes: What changes have you made in your sexual behaviour to avoid getting HIV? Tick your answers.	1	Always use condoms when having sex Stopped having more than one sexual partner Abstinence Getting tested for HIV		
		2			
		3			
		4			

SCHOOL CONTEXT

501	Do you feel safe at school?	1	Yes	2	Not always	3	No
-----	-----------------------------	---	-----	---	---------------	---	----

502	Do learners at your school use drugs?	1	Yes	2	No	3	Don't know
-----	---------------------------------------	---	-----	---	----	---	---------------

503	Do learners at your school use alcohol?	1	Yes	2	No	3	Don't know
-----	---	---	-----	---	----	---	---------------

504	How many times did you drink alcohol in the last six months?	1	Never	2	Once	3	A few times	4	Often
505	How often did you use drugs in the last six months?	1	Never	2	Once	3	A few times	4	Often
506	How easy is it for you to say no to drugs or alcohol when your friends use it?	1	Very easy	2	Easy	3	Difficult	4	Very difficult
507	Were there any learners at your school who were pregnant during the last year?	1	Yes	2	No	3	Don't know		
508	Is teenage pregnancy a problem at your school?	1	Yes	2	No	3	Don't know		
509	Do you think there is sexual abuse at your school?	1	Yes	2	No	3	Don't know		
510	Do you think your friends use condoms	1	None	2	Some of them	3	Most of them	4	All of them

	when they have sex?								
511	How easy is it for you to talk to your teachers about personal issues, like sex, problems at home or problems at school?	1	Very easy	2	Easy	3	Difficult	4	Very difficult
512	Is there a teacher at school who you talk to about personal issues?	1	Yes	2	No				

RHIVA		
601	Read all of the statements and tick those that you are doing differently this year. If you have not done any of these, tick the “none of these” box.	1 I am trying to eat less junk foods 2 I am doing more physical activity 3 I started a new hobby 4 I joined a club 5 I am talking to friends and family about the importance of safe sex 6 None of these

602 How much money have you
received from RHIVA so far?

Write in the amount in the block

- 603 What did you do with 1 Saved some or all of the money
your RHIVA money 2 Gave to family or caregiver
for? 3 Used it to pay school fees
4 Used it to buy school uniform
5 Used it to buy school books or stationary
6 Used it to buy clothes
7 Spent it on nice to have things like
entertainment or airtime
8 Used it to buy alcohol or drugs
9 Other: Please explain

- 604 How much do you
like the RHIVA 1 Very
programme? 2 A lot
3 A
little
4 None

Thank you for your contribution!

APPENDIX B: ETHICAL CLEARANCE LETTER

APPENDIX C: PERMISSION LETTER



REPUBLIC OF NAMIBIA

MINISTRY OF EDUCATION, ARTS AND CULTURE

Tel: +264 61 -2933200/02

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Enquiries: C. Muchila/G. Munene

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File no: 1/1/1

Luther Street, Govt. Office

Park

Private Bag 13186

Windhoek

Namibia

Ms. Imelda //Hoebes

Cell: 0812286824

Email: immsy2000@gmail.com

Dear Ms I //Hoebes

SUBJECT: PERMISSION TO CONDUCT RESEARCH USING MoEAC: HAMU DATA

Kindly be informed that permission to conduct research for your master's Degree on the topic: "Linkages between cash incentives and behaviour change with regards to HIV counselling and testing uptake in adolescents: an assessment of the RHIVA programme in the Khomas region" is herewith granted.

Please visit the Ministry of Education, Arts and Culture: HAMU division with this letter to arrange on how to access the required data.

Furthermore, we humbly request you to share your research findings with the ministry. You may contact Mr. C. Muchila / Mr. G. Munene at the Directorate: Programmes and Quality Assurance (PQA) for provision of summary of your research findings.

I wish you the best in conducting your research and I look forward to hearing from you soon.

Sincerely yours


SANET L. STEENKAMP
PERMANENT SECRETARY



29/8/17
Date

All official correspondences must be addressed to the Permanent Secretary

APPENDIX D: SPSS CODEBOOK FOR RHIVA DATA

Notes

Output Created	20-OCT-2017 12:32:20
Comments	
Input Data	F:\Desktop Sept 2017\immsy\CombinedRHIV AENDBASe_1.sav
Active Dataset	DataSet4
Filter	<none>
Weight	Case source is DataSet4
Split File	<none>
N of Rows in Working Data File	987

Syntax

```
CODEBOOK v604 [o]
filter_$ [o] numpartnerslast12
[o] confidence [o] v603_Factor
[s] v602_amt [s]
    Cash_Incentive_Factor [o]
Fin_Indep [o]
Sexual_Behaviour [s]
HIV_Prevention [s]
HCT_uptake [s]
    SC_Drug_Alco_Peers [o]
SC_Peer_Press [o]
SC_Teacher_Supp [o]
SC_Teen_Preg [o]
SF_Future_Plan [o]
    SF_Condom_Use [o]
SF_Cash_Man [o]
SF_Sex_Equity [o]
schoolgroupnum [n]
interventiontype [n]
    schoolcode [o] gender [o]
Fin_Issues_v201 [o] v202 [o]
v203 [o] v204 [o] v205 [o]
v206 [o] v303 [o]
    v304 [o] v305_confident2
[o] v401 [o] v302 [o] v404 [o]
v405 [o] v406 [o] v407 [o]
v408 [o] v410
    [o] v411 [o] v412 [o] v413
[o] v414 [o] v415 [o] v416 [o]
v417 [o] v418 [o] v419 [o]
v403 [o]
    survey [n] v3012 [o]
intervention [n]
/VARINFO POSITION
LABEL TYPE FORMAT
MEASURE ROLE
VALUELABELS MISSING
ATTRIBUTES
/OPTIONS
VARORDER=VARLIST
SORT=ASCENDING
MAXCATS=200
```

		/STATISTICS COUNT PERCENT MEAN STDDEV QUARTILES.	
Resource	Processor Time		00:00:00.09
s	Elapsed Time		00:00:00.09

[DataSet4] F:\Desktop Sept 2017\immsy\CombinedRHIVAENDBASe_1.sav

Warnings

Value labels, counts, and/or percents not displayed for the following variables or multiple response sets because the number of unique, valid values exceeds the specified maximum or default maximum of 200: intervention.

v604

		Value	Count	Percent
Standard Attributes	Position Label	99 How much do you like the RHIVA programme ?		
	Type	Numeric		
	Format	F1		
	Measurement	Ordinal		
	Role	Input		
Valid Values	1	none	230	15.9%
	2	a little	50	3.5%
	3	a lot	146	10.1%
	4	very much	490	33.9%
Missing Values	System		529	36.6%

filter_\$

	Value	Count	Percent
Position	100		

Standard Attributes	Label	v408 = 1 (FILTER)		
	Type	Numeric		
	Format	F1		
	Measurement	Ordinal		
	Role	Input		
Valid Values	0	Not Selected	470	32.5%
	1	Selected	446	30.9%
Missing Values	System		529	36.6%

numpartnerslast12

		Value	Count	Percent
Standard Attributes	Position	101		
	Label	<none >		
	Type	Numeric		
	Format	F8.2		
	Measurement	Ordinal		
	Role	Input		
Valid Values	1.00		448	31.0%
	2.00		298	20.6%
	3.00		120	8.3%
Missing Values	System		579	40.1%

confidence

		Value	Count	Percent
Standard Attributes	Position	102		
	Label	<none >		
	Type	Numeric		
	Format	F8.2		
	Measurement	Ordinal		

	Role	Input		
Valid Values	1.00		480	33.2%
	2.00		372	25.7%
	3.00		56	3.9%
Missing Values	System		537	37.2%

v603_Factor

		Value
Standard Attributes	Position	103
	Label	COMPUTE v603_Factor=Median(v603_1,v603_2,v603_3,v603_4,v603_5,v603_6,v603_7)
	Type	Numeric
	Format	F8.2
	Measurement	Scale
	Role	Input
N	Valid	516
	Missing	929
Central Tendency and Dispersion	Mean	3.1880
	Standard Deviation	.70816
	Percentile 25	3.0000
	Percentile 50	3.0000
	Percentile 75	3.5000

v602_amt

		Value	Count	Percent
Standard Attributes	Position	104		

	Label	How much money have you received from RHIVA so far?		
	Type	Numeric		
	Format	F2		
	Measurement	Scale		
	Role	Input		
N	Valid	634		
	Missing	811		
Central Tendency and Dispersion	Mean	24.80		
	Standard Deviation	18.161		
	Percentile 25	6.00		
	Percentile 50	27.00		
	Percentile 75	39.00		
Labeled Values	1	0	128	8.9%
	2	1000	12	0.8%
	3	1012	4	0.3%
	4	1030	2	0.1%
	5	1048	2	0.1%
	6	1050	22	1.5%
	7	1060	2	0.1%
	8	1070	14	1.0%
	9	1100	4	0.3%
	10	1110	2	0.1%
	11	1200	8	0.6%
	12	124	4	0.3%
	13	1250	4	0.3%
	14	1260	8	0.6%
	15	1280	4	0.3%
	16	1284	6	0.4%
	17	1400	4	0.3%
	18	1421	2	0.1%
	19	200	14	1.0%
	20	204	2	0.1%
	21	205	4	0.3%

22	210	34	2.4%
23	214	20	1.4%
24	216	2	0.1%
25	250	6	0.4%
26	300	2	0.1%
27	400	36	2.5%
28	410	4	0.3%
29	418	4	0.3%
30	420	28	1.9%
31	424	2	0.1%
32	428	22	1.5%
33	440	6	0.4%
34	450	4	0.3%
35	480	2	0.1%
36	600	32	2.2%
37	620	8	0.6%
38	624	2	0.1%
39	630	28	1.9%
40	632	2	0.1%
41	634	2	0.1%
42	640	4	0.3%
43	642	22	1.5%
44	647	2	0.1%
45	648	2	0.1%
46	658	2	0.1%
47	660	4	0.3%
48	680	2	0.1%
49	800	28	1.9%
50	830	2	0.1%
51	840	24	1.7%
52	848	6	0.4%
53	852	2	0.1%
54	854	2	0.1%
55	856	10	0.7%
56	860	8	0.6%
57	866	4	0.3%
58	880	4	0.3%
59	914	2	0.1%

60	97	2	0.1%
61	alot don't recall	2	0.1%
62	not sure	2	0.1%

Cash_Incentive_Factor

		Value	Count	Percent
Standard Attributes	Position Label	105 COMPUTE Cash_Incentive_Factor =SUM(v602nu,v604)		
	Type	Numeric		
	Format	F8.2		
	Measurement	Ordinal		
	Role	Input		
Valid Values	1.00		222	15.4%
	2.00		42	2.9%
	3.00		64	4.4%
	4.00		102	7.1%
	5.00		102	7.1%
	6.00		92	6.4%
	7.00		116	8.0%
	8.00		82	5.7%
	9.00		68	4.7%
	10.00		26	1.8%
Missing Values	System		529	36.6%

Fin_Indep

		Value	Count	Percent
Standard Attributes	Position Label	106 COMPUTE Fin_Indep= SUM(v204, v304)		
	Type	Numeric		
	Format	F8.2		

	Measurement	Ordinal		
	Role	Input		
Valid Values	1.00		6	0.4%
	2.00		168	11.6%
	3.00		330	22.8%
	4.00		230	15.9%
	5.00		168	11.6%
	6.00		14	1.0%
Missing Values	System		529	36.6%

Sexual_Behaviour

		Value
Standard Attributes	Position	107
	Label	COMPUTE Sexual_Behaviour=SUM(v408,v410,v411,v412,v407,Agecat)
	Type	Numeric
	Format	F8.2
	Measurement	Scale
	Role	Input
N	Valid	916
	Missing	529
Central Tendency and Dispersion	Mean	8.6135
	Standard Deviation	3.45924
	Percentile 25	6.0000
	Percentile 50	7.0000
	Percentile 75	12.0000

HIV_Prevention

		Value
Standard Attributes	Position	108

N Central Tendency and Dispersion	Label	COMPUTE HIV_Prevention=SUM (v419,v414, v420_sum)
	Type	Numeric
	Format	F8.2
	Measurement	Scale
	Role	Input
	Valid	916
	Missing	529
	Mean	3.6310
	Standard Deviation	1.67830
	Percentile 25	3.0000
	Percentile 50	4.0000
	Percentile 75	5.0000

HCT_uptake

		Value
Standard Attributes N Central Tendency and Dispersion	Position	109
	Label	COMPUTE HCT_uptake=SUM(v417,v416)
	Type	Numeric
	Format	F8.2
	Measurement	Scale
	Role	Input
	Valid	916
	Missing	529
	Mean	4.4105
	Standard Deviation	1.39698
	Percentile 25	4.0000
	Percentile 50	5.0000
	Percentile 75	6.0000

SC_Drug_Alco_Peers

		Value	Count	Percent
Standard Attributes	Position Label	110 COMPUTE Drug_Alco _Peers=SU M(v502, v503)		
	Type	Numeric		
	Format	F8.2		
	Measureme nt	Ordinal		
	Role	Input		
Valid Values	2.00		400	27.7%
	3.00		34	2.4%
	4.00		212	14.7%
	5.00		30	2.1%
	6.00		236	16.3%
Missing Values	System		533	36.9%

SC_Peer_Press

		Value	Count	Percent
Standard Attributes	Position Label	111 COMPUTE Peer_Press =SUM(v50 4,v505, v506)		
	Type	Numeric		
	Format	F8.2		
	Measureme nt	Ordinal		
	Role	Input		
Valid Values	3.00		410	28.4%
	4.00		158	10.9%
	5.00		202	14.0%
	6.00		76	5.3%
	7.00		32	2.2%
	8.00		24	1.7%
	9.00		4	0.3%

	10.00		4	0.3%
	11.00		2	0.1%
Missing Values	System		533	36.9%

SC_Teacher_Supp

		Value	Count	Percent
Standard Attributes	Position Label	112 COMPUTE Teacher_Supp=SUM(v512,v511)		
	Type	Numeric		
	Format	F8.2		
	Measurement	Ordinal		
	Role	Input		
Valid Values	2.00		92	6.4%
	3.00		166	11.5%
	4.00		240	16.6%
	5.00		244	16.9%
	6.00		170	11.8%
Missing Values	System		533	36.9%

SC_Teen_Preg

		Value	Count	Percent
Standard Attributes	Position Label	113 COMPUTE Teen_Preg=SUM(v507,v508)		
	Type	Numeric		
	Format	F8.2		
	Measurement	Ordinal		
	Role	Input		
Valid Values	2.00		490	33.9%
	3.00		178	12.3%
	4.00		168	11.6%
	5.00		40	2.8%

Missing Values	6.00		36	2.5%
	System		533	36.9%

SF_Future_Plan

		Value	Count	Percent
Standard Attributes	Position Label	114 COMPUTE Future_Plan=SUM(v205,v203)		
	Type	Numeric		
	Format	F8.2		
	Measurement	Ordinal		
	Role	Input		
Valid Values	3.00		4	0.3%
	4.00		6	0.4%
	5.00		906	62.7%
Missing Values	System		529	36.6%

SF_Condom_Use

		Value	Count	Percent
Standard Attributes	Position Label	115 COMPUTE Condom_Use=SUM(v413,v510)		
	Type	Numeric		
	Format	F8.2		
	Measurement	Ordinal		
	Role	Input		
Valid Values	1.00		48	3.3%
	2.00		236	16.3%
	3.00		246	17.0%
	4.00		240	16.6%
	5.00		106	7.3%
	6.00		14	1.0%
Missing Values	System		555	38.4%

SF_Cash_Man

		Value	Count	Percent
Standard	Position	116		
Attributes	Label	COMPUTE Cash_Man =SUM(v208a,v207a)		
	Type	Numeric		
	Format	F8.2		
	Measureme nt	Ordinal		
	Role	Input		
Valid Values	2.00		34	2.4%
	3.00		4	0.3%
	4.00		8	0.6%
	4.50		8	0.6%
	5.00		4	0.3%
	5.33		2	0.1%
	5.50		2	0.1%
	5.67		28	1.9%
	5.83		2	0.1%
	6.00		12	0.8%
	6.17		6	0.4%
	6.33		4	0.3%
	6.50		32	2.2%
	6.67		2	0.1%
	6.83		2	0.1%
	7.00		16	1.1%
	7.14		2	0.1%
	7.20		6	0.4%
	7.25		24	1.7%
	7.29		2	0.1%
	7.30		2	0.1%
	7.33		6	0.4%
	7.40		2	0.1%
	7.43		2	0.1%
	7.50		30	2.1%
	7.60		8	0.6%
	7.67		4	0.3%
	7.70		6	0.4%
	7.71		2	0.1%

7.75	10	0.7%
7.80	2	0.1%
7.83	6	0.4%
7.90	2	0.1%
8.00	52	3.6%
8.10	6	0.4%
8.17	6	0.4%
8.20	4	0.3%
8.25	6	0.4%
8.30	2	0.1%
8.33	16	1.1%
8.40	8	0.6%
8.50	22	1.5%
8.60	6	0.4%
8.63	2	0.1%
8.67	20	1.4%
8.75	10	0.7%
8.80	4	0.3%
8.83	12	0.8%
8.90	8	0.6%
8.92	2	0.1%
9.00	38	2.6%
9.07	2	0.1%
9.10	2	0.1%
9.13	2	0.1%
9.17	6	0.4%
9.20	2	0.1%
9.25	8	0.6%
9.29	4	0.3%
9.30	2	0.1%
9.33	8	0.6%
9.40	2	0.1%
9.50	16	1.1%
9.60	6	0.4%
9.67	6	0.4%
9.70	2	0.1%
9.73	2	0.1%
9.75	6	0.4%
9.80	2	0.1%
9.83	4	0.3%
9.86	2	0.1%
9.93	2	0.1%
9.95	2	0.1%
10.00	32	2.2%

10.10	4	0.3%
10.17	2	0.1%
10.25	4	0.3%
10.30	2	0.1%
10.33	4	0.3%
10.36	2	0.1%
10.40	12	0.8%
10.50	22	1.5%
10.52	2	0.1%
10.60	2	0.1%
10.67	4	0.3%
10.70	2	0.1%
10.79	4	0.3%
10.80	2	0.1%
10.83	6	0.4%
10.87	2	0.1%
10.90	2	0.1%
10.94	2	0.1%
11.00	18	1.2%
11.24	2	0.1%
11.25	4	0.3%
11.33	4	0.3%
11.40	2	0.1%
11.50	22	1.5%
11.67	12	0.8%
11.70	2	0.1%
12.00	8	0.6%
12.10	2	0.1%
12.17	4	0.3%
12.30	2	0.1%
12.33	2	0.1%
12.50	16	1.1%
12.60	4	0.3%
12.67	6	0.4%
12.75	8	0.6%
12.83	2	0.1%
13.00	32	2.2%
13.14	2	0.1%
13.33	6	0.4%
13.50	4	0.3%
13.67	2	0.1%
13.75	4	0.3%
14.00	12	0.8%
14.25	2	0.1%

	14.33		2	0.1%
	14.50		6	0.4%
	14.67		2	0.1%
	14.75		2	0.1%
	15.00		2	0.1%
	15.67		2	0.1%
	16.00		2	0.1%
	16.17		2	0.1%
	17.00		4	0.3%
	17.50		2	0.1%
Missing Values	System		529	36.6%

SF_Sex_Equity

		Value	Count	Percent
Standard	Position	117		
Attributes	Label	COMPUTE Sex_Equity =SUM(v40 5, v415)		
	Type	Numeric		
	Format	F8.2		
	Measureme nt	Ordinal		
	Role	Input		
Valid Values	2.00		38	2.6%
	3.00		614	42.5%
	4.00		244	16.9%
	5.00		20	1.4%
Missing Values	System		529	36.6%

schoolgroupnum

		Value	Count	Percent
Standard	Position	2		
Attributes	Label	<none >		
	Type	Numer ic		
	Format	F1		

Valid Values	Measurement	Nominal		
	Role	Input		
	1	S1	164	11.3%
	2	S2	239	16.5%
	3	S3	252	17.4%
	4	S4	185	12.8%
	5	S5	166	11.5%
	6	S6	216	14.9%
	7	S7	223	15.4%

interventiontype

		Value	Count	Percent
Standard Attributes	Position	3		
	Label	<none>		
	Type	Numeric		
	Format	F1		
	Measurement	Nominal		
Valid Values	Role	Input		
	1	CO	463	32.0%
	2	I1	454	31.4%
	3	I2	528	36.5%

schoolcode

		Value	Count	Percent
Standard Attributes	Position	4		
	Label	<none>		
	Type	Numeric		
	Format	F2		
	Measurement	Ordinal		
Valid Values	Role	Input		
	1	A.Shipena Secondary School	82	5.7%

2	Academia Secondary School	90	6.2%
3	Augustineu m Secondary School	46	3.2%
4	C.J Brandt High School	74	5.1%
5	Centauros High School	54	3.7%
6	Concordia College	76	5.3%
7	Cosmos High school	76	5.3%
8	Dawid Bezuidenho ut High school	72	5.0%
9	Delta Secondary School	60	4.2%
10	Eldorado Secondary school	82	5.7%
11	Ella du Plessis High School	64	4.4%
12	Hage Gaingob High School	74	5.1%
13	Windhoek Technical High School	30	2.1%
14	Highline Secondary school	82	5.7%

15	Hochland High School	83	5.7%
16	Immanuel Shifidi Secondary school	66	4.6%
17	Jacob Marengo	74	5.1%
18	Jan Jonker Afr. hoerskool	85	5.9%
19	Jan Mohr Secondary School	77	5.3%
20	Khomas High School	80	5.5%
21	WHS	18	1.2%

gender

		Value	Count	Percent
Standard Attributes	Position	6		
	Label	2.1 Are you a boy or girl?		
	Type	Numeric		
	Format	F1		
	Measurement	Ordinal		
Valid Values	Role	Input		
	1	Boy	435	30.1%
Missing Values	2	Girl	1008	69.8%
	System		2	0.1%

Fin_Issues_v201

	Value	Count	Percent
Position	9		

Standard Attributes	Label	Is there an adult at your home who earns an income?		
	Type	Numeric		
	Format	F1		
	Measurement	Ordinal		
	Role	Input		
Valid Values	1	Yes	1332	92.2%
	2	No	110	7.6%
Missing Values	System		3	0.2%

v202

		Value	Count	Percent
Standard Attributes	Position	10		
	Label	Does someone at your home receive a grant		
	Type	Numeric		
	Format	F1		
	Measurement	Ordinal		
	Role	Input		
Valid Values	1	Yes	303	21.0%
	2	No	987	68.3%
	3		140	9.7%
Missing Values	System		15	1.0%

v203

	Value	Count	Percent
Position	11		

Standard Attributes	Label	Do you think it is important to save money?		
	Type	Numeric		
	Format	F1		
	Measurement	Ordinal		
	Role	Input		
Valid Values	1	dont know	525	36.3%
	2	No	11	0.8%
	3	Yes	908	62.8%
Missing Values	System		1	0.1%

v204

		Value	Count	Percent
Standard Attributes	Position	12		
	Label	Do you personally have any money saved up?		
	Type	Numeric		
	Format	F1		
	Measurement	Ordinal		
	Role	Input		
Valid Values	1	Yes	639	44.2%
	2	No	797	55.2%
Missing Values	System		9	0.6%

v205

	Value	Count	Percent
Position	13		

Standard Attributes	Label	Are you the main income earner at your home?		
	Type	Numeric		
	Format	F1		
	Measurement	Ordinal		
	Role	Input		
Valid Values	1	Yes	11	0.8%
	2	No	1423	98.5%
	3		8	0.6%
Missing Values	System		3	0.2%

v206

		Value	Count	Percent
Standard Attributes	Position	14		
	Label	Do you often give all your money to your parents/family?		
	Type	Numeric		
	Format	F1		
	Measurement	Ordinal		
	Role	Input		
Valid Values	1	Yes	258	17.9%
	2	No	1174	81.2%
Missing Values	System		13	0.9%

v303

	Value	Count	Percent
Position	37		

Standard Attributes	Label	Will you have to get a job as soon as you finish school in order to support your family?		
	Type	Numeric		
	Format	F1		
	Measurement	Ordinal		
	Role	Input		
Valid Values	1	Yes	427	29.6%
	2	No	668	46.2%
	3		343	23.7%
Missing Values	System		7	0.5%

v304

		Value	Count	Percent
Standard Attributes	Position	38		
	Label	How much support do you feel you get from your parents?		
	Type	Numeric		
	Format	F1		
	Measurement	Ordinal		
	Role	Input		
Valid Values	1	Very much	508	35.2%
	2	A lot	558	38.6%
	3	A little	342	23.7%
	4	None	32	2.2%
Missing Values	System		5	0.3%

v305_confident2

		Value	Count	Percent
Standard Attributes	Position Label	39 Do you feel more or less confident now about achieving your future goals than you did before the RHIVA program		
	Type Format Measurement Role	Numeric F1 Ordinal Input		
Valid Values	1	Much more confident	480	33.2%
	2	A little more confident	368	25.5%
	3	Not more confident	56	3.9%
	4	Less confident	4	0.3%
Missing Values	System		537	37.2%

v401

		Value	Count	Percent
Standard Attributes	Position Label	41 How easy is it for you to express yourself in front of others?		
	Type	Numeric		

	Format	F1		
	Measurement	Ordinal		
	Role	Input		
Valid Values	1	Very easy	246	17.0%
	2	Easy	619	42.8%
	3	Difficult	492	34.0%
	4	Very difficult	84	5.8%
Missing Values	System		4	0.3%

v302

		Value	Count	Percent
Standard Attributes	Position Label	36 Is there money at your home for you to study further once you finish school?		
	Type	Numeric		
	Format	F1		
	Measurement	Ordinal		
	Role	Input		
Valid Values	1	Yes	275	19.0%
	2	No	619	42.8%
	3		547	37.9%
Missing Values	System		4	0.3%

v404

	Value	Count	Percent
Position	50		

Standard Attributes	Label	Do you think it is OK to have sex with a teacher?		
	Type	Numeric		
	Format	F1		
	Measurement	Ordinal		
	Role	Input		
Valid Values	1	Yes	55	3.8%
	2	No	1305	90.3%
	3	Dont know	83	5.7%
Missing Values	System		2	0.1%

v405

		Value	Count	Percent
Standard Attributes	Position	51		
	Label	Do you think you must have sex to prove you love someone?		
	Type	Numeric		
	Format	F1		
	Measurement	Ordinal		
	Role	Input		
Valid Values	1	Yes	55	3.8%
	2	No	1337	92.5%
	3	Dont know	52	3.6%
Missing Values	System		1	0.1%

v406

	Value	Count	Percent
Position	52		

Standard Attributes	Label	Do you think it is OK to have sex with a person who is 15 years older than you?		
	Type	Numeric		
	Format	F1		
	Measurement	Ordinal		
	Role	Input		
Valid Values	1	Yes	109	7.5%
	2	No	1199	83.0%
	3	Dont know	137	9.5%

v407

		Value	Count	Percent
Standard Attributes	Position	53		
	Label	How many of your friends have had sex?		
	Type	Numeric		
	Format	F1		
	Measurement	Ordinal		
	Role	Input		
Valid Values	1	None	225	15.6%
	2	Some of them	856	59.2%
	3	Most of them	277	19.2%
	4	All of them	76	5.3%
Missing Values	System		11	0.8%

v408

		Value	Count	Percent
Standard Attributes	Position Label	54 Have you ever had sex?		
	Type	Numeric		
	Format	F1		
	Measurement	Ordinal		
	Role	Input		
Valid Values	1	no	695	48.1%
	2	Yes	749	51.8%
Missing Values	System		1	0.1%

v410

		Value	Count	Percent
Standard Attributes	Position Label	56 How many sexual partners have you had during the past 12 months (1 year)?		
	Type	Numeric		
	Format	F1		
	Measurement	Ordinal		
	Role	Input		
Valid Values	1	None	758	52.5%
	2	One	438	30.3%
	3	Two	124	8.6%
	4	Three or more	56	3.9%
Missing Values	5	Dont know	17	1.2%
	System		52	3.6%

v411

		Value	Count	Percent
Standard Attributes	Position Label	57 Are you currently in a sexual relationship ?		
	Type	Numeric		
	Format	F1		
	Measurement	Ordinal		
	Role	Input		
Valid Values	1	No	771	53.4%
	2	Yes	663	45.9%
Missing Values	System		11	0.8%

v412

		Value	Count	Percent
Standard Attributes	Position Label	58 If you are in a relationship that includes sex, how long have you been in this relationship ?		
	Type	Numeric		
	Format	F1		
	Measurement	Ordinal		
	Role	Input		
Valid Values	1	I am not in a sexual relationship	914	63.3%
	2	0–6 months	96	6.6%

	3	6–12 months	74	5.1%
	4	More than a year	205	14.2%
	5	Dont know	28	1.9%
Missing Values	System		128	8.9%

v413

		Value	Count	Percent
Standard Attributes	Position Label	59 If you have had sex, how often do you use condoms?		
	Type	Numeric		
	Format	F1		
	Measurement	Ordinal		
	Role	Input		
Valid Values	1	always	311	21.5%
	2	Sometimes	191	13.2%
	3	Never	166	11.5%
Missing Values	0	Have not had sex	726	50.2%
	System		51	3.5%

v414

		Value	Count	Percent
Standard Attributes	Position Label	60 Did you use a condom the last time you had sex?		
	Type	Numeric		
	Format	F1		
	Measurement	Ordinal		

Valid Values	Role	Input		
	0	Have not had sex	728	50.4%
	1	Yes	517	35.8%
	2	No	145	10.0%
Missing Values	3	Dont Know	3	0.2%
	System		52	3.6%

v415

		Value	Count	Percent
Standard Attributes	Position Label	61 Can you say no if your partner wants sex and you do not want to?		
	Type Format	Numeric F1		
	Measurement	Ordinal		
Valid Values	Role	Input		
	1	Yes, it is easy	965	66.8%
	2	Yes, but it is not easy	396	27.4%
Missing Values	3	No	51	3.5%
	System		33	2.3%

v416

		Value	Count	Percent
Standard Attributes	Position Label	62 Do you know your HIV status?		
	Type Format	Numeric F1		

	Measurement	Ordinal		
	Role	Input		
Valid Values	1	No	375	26.0%
	2	Yes	1061	73.4%
Missing Values	System		9	0.6%

v417

		Value	Count	Percent
Standard Attributes	Position Label	63 How many times have you been tested for HIV?		
	Type Format	Numeric F1		
	Measurement	Ordinal		
	Role	Input		
Valid Values	1	Never	535	37.0%
	2	Once	334	23.1%
	3	Twice	325	22.5%
	4	More than twice	250	17.3%
Missing Values	System		1	0.1%

v418

		Value	Count	Percent
Standard Attributes	Position Label	64 Is there anything one can do to avoid getting HIV?		
	Type Format	Numeric F1		

	Measurement	Ordinal		
	Role	Input		
Valid Values	1	dont know	517	35.8%
	2	No	26	1.8%
	3	Yes	901	62.4%
Missing Values	System		1	0.1%

v419

		Value	Count	Percent
Standard Attributes	Position Label	65 Have you made any changes in your sexual behaviour to avoid getting HIV?		
	Type	Numeric		
	Format	F1		
	Measurement	Ordinal		
	Role	Input		
Valid Values	1	No	552	38.2%
	2	Yes	808	55.9%
Missing Values	System		85	5.9%

v403

		Value	Count	Percent
Standard Attributes	Position Label	49 Do you think it is OK to force someone to have sex?		
	Type	Numeric		
	Format	F1		

	Measurement	Ordinal		
	Role	Input		
Valid Values	1	Yes	11	0.8%
	2	No	1423	98.5%
	3	Dont know	8	0.6%
Missing Values	System		3	0.2%

survey

		Value	Count	Percent
Standard Attributes	Position	1		
	Label	Case source is DataSet4		
	Type	Numeric		
	Format	F1		
	Measurement	Nominal		
	Role	Input		
Valid Values	1	Baseline	529	36.6%
	2	Endline	916	63.4%

v3012

		Value	Count	Percent
Standard Attributes	Position	35		
	Label	What do you plan to do after you finish school?		
	Type	Numeric		
	Format	F1		
	Measurement	Ordinal		
	Role	Input		
Valid Values	1	I don't know	8	0.6%
	2	I will get a job	64	4.4%

	3	I will learn a trade (e.g. hairdressing, plumbing)	10	0.7%
	4	I will further my education (e.g. diploma or degree)	808	55.9%
	5	I will start my own business	20	1.4%
	6	Other	2	0.1%
Missing Values	System		533	36.9%

intervention

		Value
Standard	Position	121
Attributes	Label	<none>
	Type	Numeric
	Format	F3
	Measurement	Nominal
	Role	Input

