The role of cash incentives in HIV behaviour change: A case study based on the RHIVA programme in Namibia

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Abstract

This study explores the use of cash incentives towards positive behaviour change amongst adolescents at different schools in the Khomas Region, Windhoek, Namibia. The aim of the research was to assess the efficacy of the Reducing HIV/AIDS in Adolescents (RHIVA) programme's cash incentive-based theory of change. The hypothesis of the model is that cash incentives can promote positive behavioural change. The behaviour change is related to HIV/AIDS prevention and other behavioural patterns more specific to adolescents. The study used secondary data from a pre-post quasi-experimental research design collected between 2013 and 2015. The primary data came from 529 responses to a baseline survey and 458 responses to an end-line survey conducted in the Khomas Region. The secondary analysis explored the impact of cash incentives on learners' sexual behaviour, especially the learners who received full RHIVA intervention (IG2). The study concludes that the full RHIVA programme intervention resulted in a 10% reduction in sexual activity. The RHIVA programme is effective for learners younger than 16 years and for females from middle to high-income areas. However, the study found that cash incentives do not result in an increase in the number of times that learners were tested for HIV. It also found that direct cash payments to learners have the potential to be both a deterrent and an incentive for positive behaviour change as direct cash payments are prone to other socio-structural pressures

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such as the prevalence of alcohol and drug use at school and community levels. The study further concludes that conditional cash transfers remain very important in increasing the HIV Counselling and Testing (HCT) uptake of learners despite certain limitations.

Background

The RHIVA programme is a school-intervention programme which uses cash incentives to target adolescent behavioural change with regards to HIV testing and counselling. The rationale is that when people know their HIV status, they can use their own agency to prevent more infections. Testing negative for HIV offers an opportunity to reinforce the importance of risk reduction while a positive HIV result could lead to early intervention. There is often low HIV counselling and testing (HCT) uptake by both adults and adolescents due to socio-structural conditions such as cultural norms, poverty, and stigma. Other contributing factors include perceptions about a lack of confidentiality, fear of stigmatisation and discrimination that hamper HIV testing (Young & Bendavid, 2010).

At an individual level, the RHIVA programme provides life skills and sexual and reproductive health training. At family level, it improves intra-family communication about positive sexuality. At the community level, it provides access to youth-friendly health services and mass media campaigns aimed at changing gender norms in society. Consequently, the RHIVA programme's theory of change depends on the sanctity of the relationship between parents, teachers, schools and the community.

Literature Review, Theoretical and Conceptual Frameworks

Youth and HIV Testing

Idele et al., (2014) note that less than one in five boys and one in three girls aged 15-19 years in Africa reported ever having been tested for HIV. HIV testing is a critical entry point for primary and secondary prevention, care and treatment. Kurth, Lally, Choko, Inwani and Fortenberry (2015) concluded that young people worldwide need more routine access to HIV

testing services as this would effectively address the developmental, socio-political and other challenges facing the youth. HCT service uptake among the youth has been unsatisfactory in Namibia with 58% of sexually active young women and only 39% of sexually active young men that had been tested for HIV in the past 12 months and received the results of their last test (MoHSS, 2013). Young people are less likely to access HCT despite the fact that 62% of young women and 51% of young men have comprehensive knowledge of HIV/AIDS (MoHSS, 2013).

There are several barriers to young people accessing HCT. According to Amoaten and Sibandze (2014), they need permission to go to health centres which many are too embarrassed to request. Furthermore, operating hours of health centres clash with school hours. Learners are also compelled to sit in waiting rooms for hours with the risk of being identified by family members. Learners often complain about being denied services at health centres, even when they are over 16 years. These challenges make school-based services more attractive (Amoaten & Sibandze, 2014).

Cash incentives and HIV Prevention: International Experiences

Randomized trials in Sub-Saharan Africa reveal that small, regular and unconditional cash transfers to poor households can reduce adolescent girls' HIV-risk behaviour (Cluver et al., 2013). 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 who were actively recruited with cash were more likely to test positive for HIV and be eligible for treatment in comparison to voluntary walk-ins. The Zomba Cash Transfer Program (ZCTP) in Malawi and Cash plus Care Programme 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 are more effective than larger payments in the future. Thus, these smaller payments resulted in an increase in HIV testing uptake (Kidd & Calder, 2014).

The Zomba randomized ongoing conditional cash transfer (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 conditional household-level cash transfers. The findings show that cash and food can effect maximum reductions in HIV-related risk behaviour in

school-going girls (Kidd & Calder, 2014). It also points to poverty as one of the structural drivers of HIV and AIDS.

The Cash plus Care programme in Zimbabwe found promising evidence that comprehensive school support (including cash) may reduce HIV risks for orphaned girls (Hallfors et al., 2011). The study concluded that integrated Cash plus Care reduces male and female adolescent HIV-risk behaviour (Cluver et al., 2013).

Theory of change related to cash transfer programmes

There are several advantages to school-based targeted cash incentive inventions in impoverished communities where HIV prevalence is high. Programmes can reach large numbers of vulnerable adolescents. The use of schools allows for the implementation of multi-pronged, comprehensive programmes which combine curriculum, incentives and extra-curricular activities. According to the structural strain perspective, school-based programmes can also target parents and arrest any deviance arising from an imbalance between culturally valued goals and the socially acceptable ways of achieving those goals (Ferrante, 2015).

Pettifor, MacPhail, Nguyen, & Rosenberg (2012) reviewed 16 studies on cash incentives aimed at HIV risk reduction. They found that there are two main types of cash incentives for behaviour change which they categorized as upstream and downstream risk drivers. Pettifor et al. (2013) found that the first category programmes are aimed at addressing upstream drivers of risk such as poverty and lack of 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 risks such as low levels of 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. 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. Pettifor et al., (2012) argue that it is unclear whether interventions premised on rewarding specific HIV-related outcomes actually address the structural factors that place

individuals at risk in the first place. The RHIVA programme is based on a few assumptions. Firstly, cash payments will motivate positive behaviour change and therefore reduce risk (Pettifor et al., 2012). Secondly, that HCT uptake is the starting point for behaviour change. 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. 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 (Scott, 2000). This assumption recognizes the motivating role of threats and rewards in the conditioning of human behaviour (Scott, 2000).

The RHIVA theory of change model assumes that risks rise significantly during the adolescent years hence the focus on the 15-20 years age group, usually when they are in Grades 10 to 12. The RHIVA programme pathway to change for high-risk adolescents depends on incentivizing adolescents to engage in positive behaviour. This involves equipping them with knowledge and skills on Sexual and Reproductive Health (SRH) and HIV prevention as well as equipping them with knowledge on career choices, sustainable livelihoods and financial management (MIET Africa, 2014). The model addresses the risk of HIV infection amongst adolescents through a combined approach. The approach incorporates behavioural, structural and biomedical interventions. The biomedical intervention of RHIVA lies in knowing your HIV status through HIV counselling and testing (HCT). HCT constitutes a valuable goal for RHIVA programme learners since knowing their HIV status is more likely to ensure health protection for learners, their peers, families and communities (Coates, Richter, & Caceres, 2008). RHIVA behavioural intervention focuses on learners' attitudes and behaviour towards sexual and reproductive health (SRH). This includes HIV testing (MIET Africa, 2014). Structural interventions address the larger contextual and structural landscape within which young people live. These include poverty, gender inequality, and substance abuse. The RHIVA conceptual framework is summarized in Figure 1 below. It shows how cash transfers can be linked to social change at individual, family and community levels. It also shows how cash incentives can reduce HIV risk-related behaviour and lead to positive lifestyle choices.
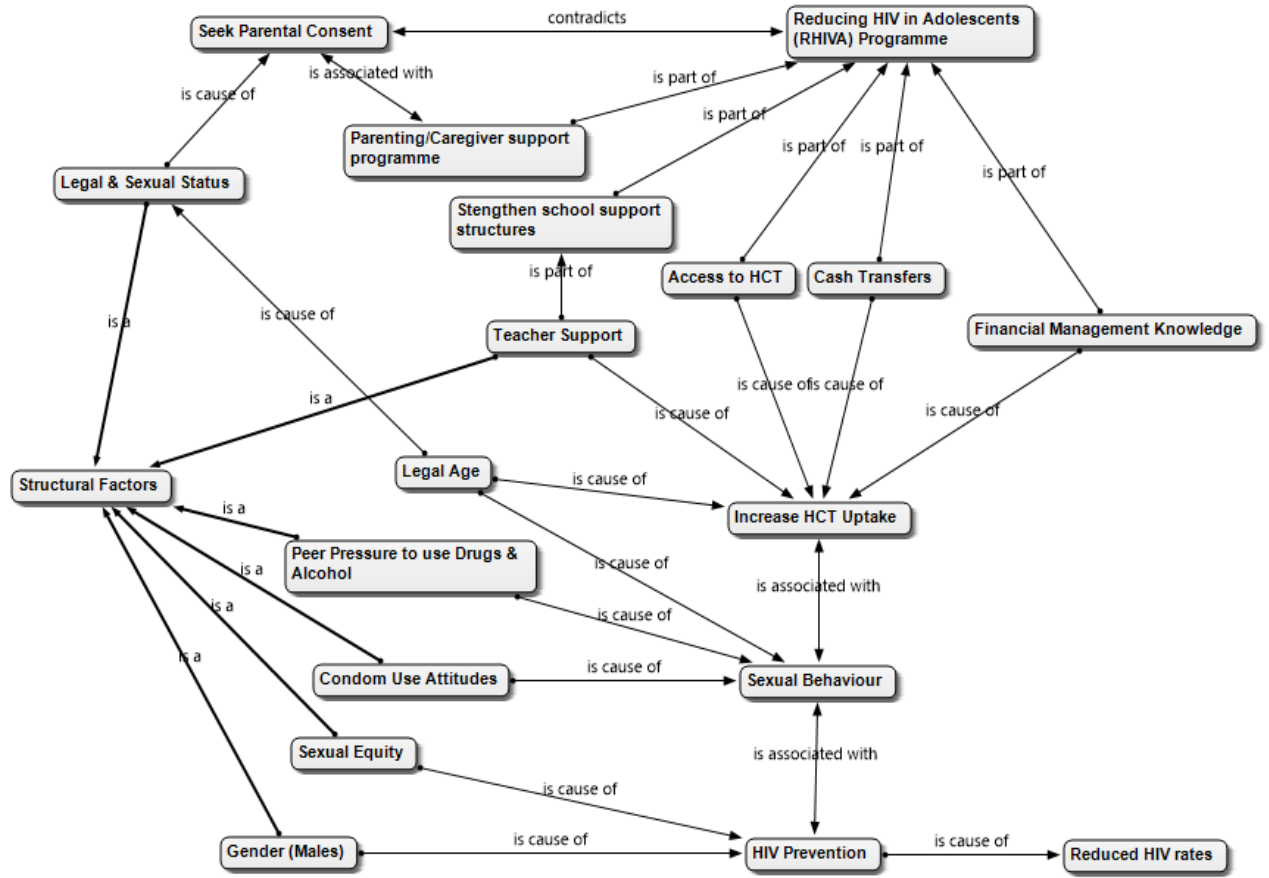
Figure 1. Conceptual Framework for the RHIVA Programme

Methodology

The study used a quantitative research design. It relied on the secondary data from a pre-post quasi-experimental research design collected between 2013 and 2015. The primary data came from 529 responses to a baseline survey and 458 responses to an end-line survey conducted in the Khomas Region. The frequencies of the outcomes were measured in both intervention and control groups in order to assess the effects of the intervention (Ross, Dick, & Ferguson, 2008). The study used Gaskin's (2017) data preparation and screening procedures. The variables with substantive missing data (above 10%) or poor quality responses were removed prior to analysis (Hair, Black, Babin, Anderson, & Tatham, 2013). The data screening saw the number of variables reduced from 100 questionnaire items to only 28 variables.

Data analysis

The study used SPSS and AMOS version 23 to analyse the data. Descriptive statistics, frequency tables and cross tabulations were used to summarise the data. To achieve the objectives of the study, the researchers used inferential statistical tests such as Analysis of Variance (ANOVA), T-tests, F-test and Chi-square tests. In addition, the overall measurement of variables were analysed through Exploratory Factor Analysis (EFA). EFA is a method of defining the underlying structure amongst the variables by grouping variables together on a number of factors (Hair, et al., 2013).

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 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. The study used the Maximum Likelihood Estimation with Promax to determine unique variance between items.

Results

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 for their children to participate in a programme which involved discussions about sex, being tested for HIV and using condoms (MIET Africa, 2014). This led to low-level returns of consent forms from parents with 629 responses from 1 200 pre-assessment forms while the post-assessment survey received only 458 responses of 630.

Demographic Profile of the Research Population

Table 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	
	Immanual Shifidi Secondary School			32			17
	Jacob Marengo Secondary School		32			21	
	Total	*60*	*92*	*62*	*71*	*62*	*39*
	% within school locality	*28,0%*	*43,0%*	*29,0%*	*41,3%*	*36,0%*	*22,7%*
	% within intervention type	*39,2%*	*58,2%*	*28,4%*	*45,8%*	*41,9%*	*25,2%*
	% of Total	*11,3%*	*17,4%*	*11,7%*	*15,5%*	*13,5%*	*8,5%*
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 intervention type	39,2%		42,2%	30,3%		41,3%
	% of Total	*11,3%*		*17,4%*	*10,3%*		*14,0%*
Middle-high income area	Concordia College		36			20	
	Jan Jonker Afrikaner High School			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 intervention type	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 intervention type		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%**

IG 1- Intervention group 1, IG 2- Intervention group 2, Co - control group

Table 1 shows the participating schools of the RHIA programme baseline data survey. The distributions consisted of learners from low-income schools (IG1) representing 58.2%; in the end line they represented 41.9%. Middle-income area schools (CO) represented 39.3% of baseline survey respondents and 30.3% at end line. Middle to high-income areas schools represented 21.6% (baseline) to 14.2% (end line) for CO and 22.8% (baseline) to 13.5% (IG1).

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 Afrikaner show no significant differences with the low income, middle income or high-income school means. High-income schools and middle-income schools showed no significant differences between them. This implies that the socio-economic differences between the schools are more evident when one compares low-income schools with high-income or middle-income schools rather than middle and 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 include 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 2 suggest that interpretation of survey comparison data is statistically significant for low-income, middle-income and middle to high-income but not high-income schools.

Gender distribution

The RHIVA programme focused on empowering adolescents, with a bias towards young girls. As a result, gender distribution shows more girls participated in the pilot study than boys. 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 schools had more boys (15%) than girls (7.8%). However, the baseline control group BCO did not have data from the high-income school while the BCO low-income schools had 37.5% boys and 40.3% girls. Overall there were 41.7% boys and 43.2% from low-income schools in the control group (CO) and only 8.3% boys and 3.8% girls from high-income schools. A chi-square test showed no significant associations (CMIN = 1.837, d.f = 0.607) between the gender and income

levels in the RHIVA control group. The association test (CMIN) also showed no significant associations between gender and income for the end line IG1 group (EIG1) and all baseline groups. However, the test was significant for the end line; IG2 (EIG2) shows an association between gender and income levels, with a Pearson Chi-Square of 9.891 (d.f = 3, p =.020). In the end line, there were more girls (32%) than boys (11.5%) from IG2 low-income schools while there were more boys (25.2%) than girls (12.6%) from high-income schools.

The significant gender differences in end line IG2 are reflective of socio-political inequalities. More females are found in low-income areas. More males are found in the high-income levels. The RHIVA programme was designed to address the socio-economic inequalities between men and women that make young girls more vulnerable to HIV and AIDS. These results imply that the RHIVA programme interventions IG2 should target young girls to ensure that they make healthy lifestyle choices.

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 who were followed up for two years. 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 at the end line.

Cash incentive milestones

Cash incentives involve payments to learners for a specified intervention milestone. The learners received a direct payment of twenty American dollars (US$20) for achieving a specified milestone. The milestones included knowing your HIV status, academic achievement and completing a life skills course (MiET Africa, 2014). The payments of conditional cash transfers to learners were 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 ran from March 2014 until December 2015. Learners had to achieve a maximum of eight milestones (4 per year). The results show that they achieved a maximum of six milestones. Regarding the latter, there were no significant differences between, low-income, middle-income and high-income groups. All learners who failed to reach any of the set milestones did not receive the cash incentive. The middle to high-income schools in both EIG1 (35%) and EIG2 (15.4%) reached four milestones and received US$80. The results also show that EIG1 learners achieved more milestones compared to EIG2. Furthermore, the majority of the learners managed to attain three milestones and received US$60 with the highest percentage milestone achievement coming from the high to middle-income groups EIG1 (35%) and EIG2 (42.3%).

Linkages between cash incentives and positive behaviour change

The interactions proposed in the RHIVA Theory of Change were quantitatively modelled using a comprehensive multivariate analysis in SPSS AMOS version 23. The Confirmatory Factor Analysis (CFA) model fit was derived from the EFA Pattern Matrix of the 28 factored variables (see Table 2). The end line dataset was used for the model fitting since the baseline data did not have cash incentive variables. The Confirmatory Factor Analysis (CFA) model shows the pathways, interactions and regression weights of the statistically significant RHIVA Theory of Change linkages. In a sense, it 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).

Table 2 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 of 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.

Sexual behaviour

Adolescents' sexual behaviour is a key factor in the spread of HIV and AIDS. As a result, the RHIVA programme focused on sexual behaviour and perceptions surrounding sexual and reproductive health. The results show that nearly 41% of learners in the baseline sample reported that they had never had sex, while 48.7% of the learners in the end-line sample indicated that they

were sexually active. At baseline, IG 2 learners (47%) were reported to be more sexually active compared to learners in either IG 1 schools (35%) or CO schools (39%). However, at end line CO learners reported that more (50.3%) were sexually active compared to IG 1 (47.3%) and IG 2 (48.4%) learners. These results suggest that the RHIVA programme was more effective in reducing sexual activity in IG 2 with only a 1.8% increase while sexual activity in IG 1 and CO increased by 12.3% and 11.3% respectively. In addition, the RHIVA programme was more effective in reducing sexual activity amongst female learners. The results show smaller increases in sexual activity 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 sexual activity across all groups.

The results also 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 had fewer sexual partners. The results also suggest a significant relationship between income levels and teenage pregnancy (cov = 0.187, p=0.001) as well as with parental support (cov = -0.146, p=0.001). 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 and this makes girls vulnerable. Learners who do not feel safe at school were more likely to give all their money received from the RHIVA programme transfers to parents or family (cov= -0.027, p= 0.001). This renders the conditional cash incentive ineffective since the conditional cash transfers cannot incentivize the expected behaviour change as the learners do not keep the money for their own use but give it to parents or guardians.

Table 2

*Cash incentives and positive behaviour change (CFA Model)*

Dependent Variables	Link	Independent Variables	Covariance	p-value	Comment
Recent_Sexual_Activity	<-->	HCT_Uptake	0.022	***	Linkage exists
Recent_Sexual_Activity	<-->	HIIV_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

Another challenge for conditional cash transfers (CCT) in schools where alcohol and drug use. It is possible that cash incentives would be spent on alcohol and drugs (cov= -0.586, p = 0.004)

particularly by male learners. This leads to irresponsible behaviour as schools in which learners use alcohol tend to have an increase in the number of sexually active friends (cov = -0.075, p = 0.001). The data shows that learners are more likely to have consumed alcohol in the last 6 months if other learners at their school use alcohol (covariance (cov) = -0.12, p=0.001).

Figure 2 presents the research 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 go up by 1 standard deviation, HCT uptake goes up by 0.617 standard deviations.

Figure 2. Research Linkages Model

Conclusions

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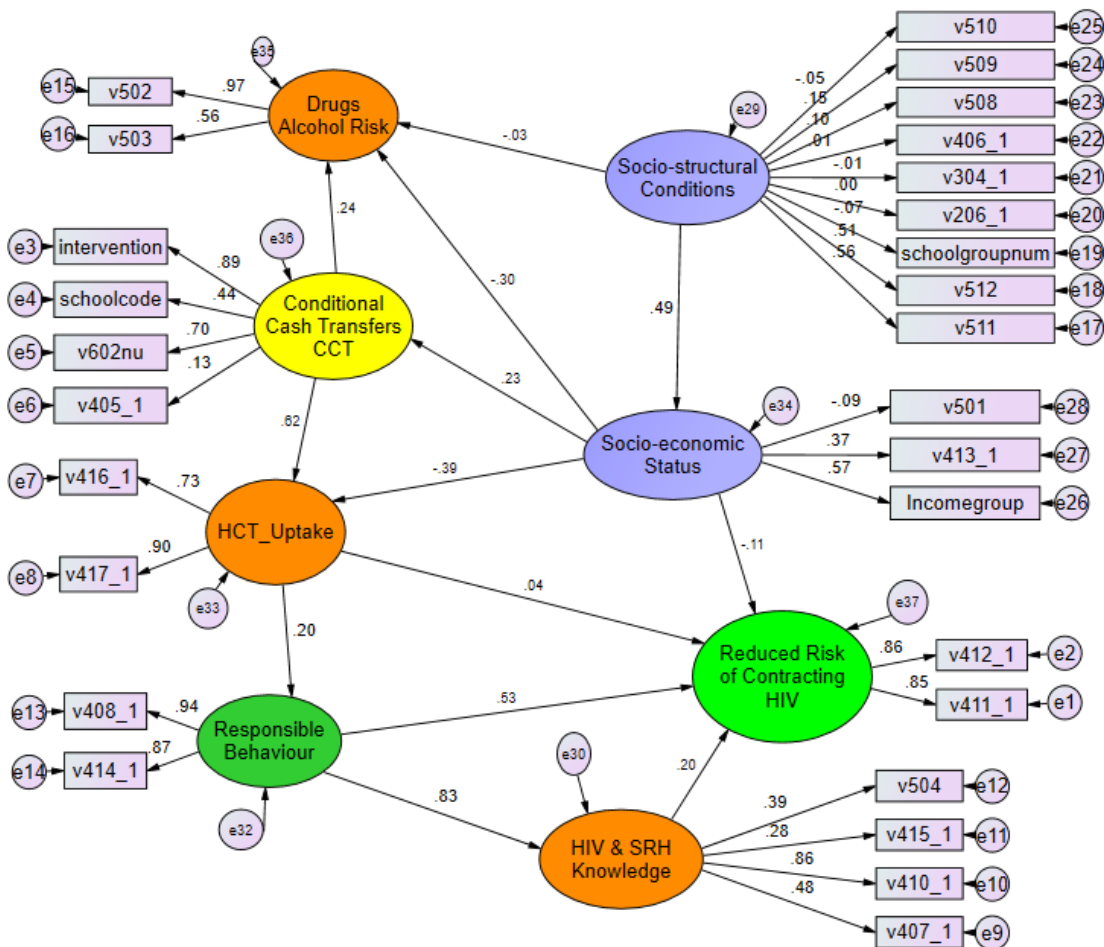
EIG2 results are reflective of socio-political inequalities where young women in low-income areas are vulnerable to HIV/AIDS. Therefore, these results imply that the full RHIVA programme interventions in IG2 provide the right set of interventions for addressing this problem. The empowerment of young girls in low-income areas may ensure that they make healthy lifestyle choices by taking charge of their own lives and reducing their risk of contracting HIV. The same intervention in boys may result in different outcomes which may involve increased alcohol intake and drug abuse.

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 the end line, yet the findings suggest that sexual encounters spike at 12 to 15 years. The study notes that if the intervention is not conducted earlier, learners' sexual activity from Grade 9 to Grade 12 will increase exponentially annually. The research also concludes that lack of parental support is a key underlying factor in the prevalence of teenage pregnancy in schools in the Khomas Region. The study supports the view 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 thus keeping them and their children in poverty.

The RHIVA programme had noticeable impact on learners' sexual behaviour especially those who received the full RHIVA intervention (IG2). The study concludes that full RHIVA programme intervention resulted in a 10% reduction in sexual activity. The RHIVA programme is effective for learners younger than 16 years and for females from middle to high-income areas. The study shows 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 an incentive for positive behaviour change as direct cash payments are prone to other socio-structural pressures such as the prevalence of alcohol and drug use at school and community level.

The data reveals that learners' behaviour and sentiments about being tested for HIV are mediated by socio-structural constraints that limit the positive reinforcement effects of cash grants. While conditional cash transfers are very important in increasing the HCT, socio-economic status is central to HCT uptake, therefore reducing the risk of HIV infection. Subsequently, this supports

the case for upstream interventions aimed at socio-economic and structural conditions as suggested by the RHIVA theoretical model of change.

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