

Reducing HIV in adolescents using an
incentivized behaviour change model

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Authors:

Mchunu, J.G.¹, Van der Elst, L.C.¹, Cockerill, M.E.¹, Kharsany, ABM.²

Abdool-Karim, Q.^{2,3}

¹ MIET Africa, 59 Henwood Road, Morningside, Durban, South Africa

² Centre for the AIDS Programme of Research in South Africa (CAPRISA), Nelson R Mandela School of Medicine, University of KwaZulu-Natal, Durban.

³ Department of Epidemiology, Mailman School of Public Health, Columbia University, New York. USA.

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Abstract:

A school-based, cash-incentivized HIV prevention intervention for Reducing HIV in Adolescents (RHIVA) was piloted in KwaZulu-Natal (KZN) between 2009 and 2012 by MIET and the KwaZulu-Natal Department of Education (KZNDoe). Consenting students in intervention schools received cash incentives for achieving three milestones: academic achievement; participation in an extracurricular activity; and knowing their HIV status. Useful lessons for future incentivised interventions include: considering challenges when undertaking intervention research in schools with limited infrastructure and poor academic performance; setting realistic milestones; prompt payment of incentives using vouchers and biometric verification; and access to youth-friendly HIV testing, care and sexual reproductive health (SRH) services.

Keywords:

Cash-incentives; HIV prevention; HIV counseling and testing; adolescent students; high schools, project implementation; lessons learnt

Aims

The RHIVA intervention was conceptualized by MIET, the KZNDoe and the Centre for the AIDS Programme of Research in South Africa (CAPRISA). This paper provides an overview of

RHIVA implementation in 14 high schools in rural KZN, South Africa between 2009 and 2012 and a summary of results.

South Africa is the epicentre of the HIV pandemic and the province of KZN bears the brunt of it.

Aiming to reduce new HIV infection rates amongst female adolescents in KZN, RHIVA responded to several factors driving the pandemic. The majority of infections in South Africa are heterosexually acquired and the highest incidence rates occur in female adolescents, who on average acquire HIV five to seven years before men. (Abdool Karim, Churchyard, Abdool Karim, & Lawn, 2009). Women in age-disparate sexual relations have a decreased ability to negotiate monogamy or condom use (Pettifor, Rees, Kleinschmidt, Steffenson, MacPhail, Hlongwa-Madikizela, Vermaak, & Padian, 2005, Leclerc-Madlala, 2008). Furthermore, young women are at increased risk of contracting HIV for socioeconomic reasons including poverty, poor education, gender disparities and high rates of violence (Abdool Karim, Sibeko & Baxter 2010, MacQueen & Karim, 2007). Women are also biologically more susceptible to HIV because of vaginal microbial ecology and physiology, and higher prevalence of sexually transmitted infections (Quinn & Overbaugh, 2005). For all of these reasons, the RHIVA intervention was developed to particularly support young females in KZN to stay HIV negative.

Most previous studies of HIV interventions have shown little evidence of behaviour change (McCoy, Kangwende, & Padian, 2010). Studies of direct transfers (cash or otherwise) have shown a quicker impact on improving the lives of beneficiaries than traditional approaches aimed at strengthening public services (DFID, 2011, Jones, Vincent, Cull, Freeland, Koch, Pedra, White, & Rook, 2011, Kohler & Thornton, 2010). The RHIVA intervention aimed to assess the effectiveness of a cash-incentivized prevention programme in reducing HIV-incidence

rate in high school learners, with particular focus on female learners, in 14 rural high schools in KZN.

Methods

RHIVA used a multi-pronged, cash incentivized, school-based approach to HIV prevention. 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. All 14 schools received a comprehensive support package comprising: 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 access to youth-friendly mobile SRH and career guidance services. In addition, an extracurricular programme called “*My life! My future!*” was implemented in all project schools, offering a SRH and wellbeing component and a sustainable livelihoods component, facilitated weekly by youth trained to deliver the programme.

Enrolled students in the seven intervention schools received cash incentives for achieving three milestones:

- *Academic achievement*: Students who passed their mid-and end-of-year examinations with an average mark of 50%.
- *Participation in the My Life! My Future! programme*

(i) Students who attended 80% of *My life! My future!* sessions and (ii) students who completed a portfolio that included a community audit report, and implementation of a project plan.

- *Knowledge of HIV status:* Students who voluntarily had an HIV test.

Students could access HCT services at local clinics or the youth-friendly mobile unit that visited schools. MIET and the KZNDoE partnered with three local NGOs (LifeLine, New Start and Zimnande Zonke) to provide youth-friendly HCT services at the 14 RHIVA schools. Key features included a supportive environment and accessible information. The HIV status of students was not disclosed to the project team, ensuring confidentiality. CAPRISA tracked the HIV status of students during an annual survey, separate from milestone achievement.

Table 1 provides details of incentive payments. Students could earn a maximum of \$115 (ZAR1150) during the course of project implementation. Because students from the control schools did not receive the cash incentives, it was possible to assess whether the cash incentives had an impact on behaviour change and acquisition of HIV. Students received cash incentives through bank accounts or vouchers. Student milestone achievement was captured by a biometric system whereby students were fingerprinted and automatically entered into a database that tracked milestone achievement.

In August 2011, the Ministry of Education issued a moratorium on HIV testing activities in schools during school hours. In response, the RHIVA partners, with the KZN Department of Health (KZNDoH), developed a youth-friendly mobile unit that visited the RHIVA schools after school hours and provided HCT, SRH and career guidance services, outside the school premises.

This has provided the Ministries of Education and Health with a tested model for the roll-out of youth-friendly health services linked to schools.

Results

The impact assessment study conducted by CAPRISA was unable to determine whether the RHIVA programme had an impact on reducing new HIV infections or pregnancy rates in the study cohort. This may have been due to several factors including: a lower than anticipated rate of new HIV infections over life of the project; the short duration between programme delivery and impact assessment not allowing sufficient time for saturation of the intervention in the cohort; and insufficient coverage of the programme (i.e. too few learners achieving all milestones). Notwithstanding this overall outcome the sub-group analysis of the data provides some important insights to guide future school based interventions using conditional cash transfers. The majority of the learners had some exposure to the intervention. A threshold of R900 or more was associated with protection against new HIV infection with higher levels of protection offered by higher amounts of money received.

Significantly, the impact assessment of the RHIVA study demonstrated a 36% decrease in HSV-2 acquisition among students in the cash-incentivized schools. Given that HSV-2 infection is closely correlated with increased risk of HIV infection, it is probable that with time and an extended duration of follow-up, that there would be an impact on HIV infection in the intervention arm.

The RHIVA programme resulted in higher uptake of HCT services across all project schools but uptake was consistently higher in intervention schools than in control schools (57% versus 31% over the life of the project).

School retention rates were higher for RHIVA students in intervention schools than in control schools. Although there were limited data on why students left school, students in intervention schools were less likely to dropout (either permanently or temporarily) or change schools than students from control schools. There was no significant difference in academic achievement between the control and intervention groups.

Lessons Learnt

RHIVA has shown that it is possible to successfully implement an incentivised prevention programme through schools. This has several advantages: by targeting schools in the most impoverished communities where HIV prevalence is high means that large numbers of the most vulnerable adolescents can be reached; using schools allows for a multi-pronged, comprehensive programme to be implemented (combination of curriculum, incentive and extra-curricular activities); and parents can be more easily reached through schools. RHIVA provided valuable lessons for informing future cash-incentivised interventions targeting adolescents.

A comprehensive, multi-pronged approach was used and ensured the success of the programme by providing students with the necessary information and support. It also provided a continuum of support between school and home, and encouraged consistency of messaging by educators and parents/caregivers.

Given the short duration of the pilot intervention, the existing poorly performing schools, and the DoE pass rate of 30%, the target set for achievement of the academic performance milestone was unrealistic for most students. During the course of project implementation, the milestone was

lowered from 50% to 40%. Modifying the measure of this milestone, for example, a proportional percentage change in marks instead of a set pass rate, may be more motivational.

Several challenges affected attendance and ultimately the achievement of the *My life! My future!* milestone, including inclement weather conditions and limited access to public transport necessary for participating in extra-curricular activities. These challenges were addressed by reducing the duration of after-school sessions and utilising school days that did not conflict with other activities.

Lessons related to the payment of cash incentives include:

- Voucher payments were immediate, tangible and solved several logistical problems related to bank account payments.
- The biometric verification using fingerprint technology to track milestone achievement and incentive payments: eliminated human error and misuse of funds; provided verifiable proof of milestone achievement and payments; ensured accuracy of data capture; and limited paper work, making the process quicker and more reliable.
- Incentives must be paid consistently and promptly on attainment of desired outcomes.

HCT was important as a milestone and an impact measure. It was therefore essential that confidential, youth-friendly HCT services were accessible. The mobile unit drew on resources from the KZNDoE, KZNDoH, MIET and CAPRISA to bring health and career guidance services to students in their communities. CAPRISA's clinic located in the project area provided access to additional support and treatment. HCT should be an integral component of any HIV prevention programme.

Conclusions

The RHIVA intervention was a comprehensive, school-based HIV prevention intervention. It provides an innovative model to assess changing behaviour among adolescents and addressing decisions related to both health and future life planning. The challenges encountered, solutions implemented and the lessons learnt provide valuable knowledge to inform similar future incentivized interventions.

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Table 1. Payment schedule for milestone achievement

Milestone	2010 (1 September- 31 December)	2011 (1 January- 31 December)	2012 (1 January- 31 October)
Academic Progression	End-of-year exam: ZAR150 (\$15)	Mid-year exam ZAR 150 (\$15) End-of-year exam: ZAR150 (\$15) Total ZAR300 (\$30) for	Mid-year exam ZAR 150 (\$15)

Reducing HIV in adolescents using an incentivized behaviour change model

		year	
Participation in My Life! My Future!	--not offered--	ZAR50 (\$5) per quarter Total ZAR200 (\$20) for year	ZAR50 (\$5) per quarter Total ZAR150 (\$15) for year
Completion of My Life! My Future! Portfolio	--not offered--	--not offered--	ZAR200 (\$20)
Knowledge of HIV status	ZAR200 (\$20)	ZAR200 (\$20)	ZAR200 (\$20)
Total	ZAR350 (\$35)	ZAR700 (\$70)	ZAR700 (\$70)