

Healthwise South Africa: cultural adaptation of a school-based risk prevention programme

L. Wegner^{1, 2, 3*}, A. J. Flisher^{2, 3, 4}, L. L. Caldwell⁵, T. Vergnani¹ and E. A. Smith⁶

Abstract

There is a need for effective prevention programmes aimed at reducing risk behaviour among South African adolescents. Health Wise South Africa is a school-based programme designed to reduce sexual and substance use risk behaviour, and promote positive use of leisure time among high-school learners (students). Based on successful programmes in the United States of America, Health Wise was developed for use in South Africa and pilot tested in four South African high schools. We carried out a process evaluation to establish the fidelity of implementation and make sure HealthWise was culturally relevant. Data sources comprised focus groups with educators and learners, lesson evaluations and observations, and interviews with school principals. Qualitative analysis of data highlighted pertinent cultural and contextual factors and identified areas for modifying Health Wise in order to promote better programme-consumer fit. These areas centred on time, language, and leisure. We noted a dynamic tension between the educators' desire to adhere to plan, and to make adaptations in accordance with learners' needs and the context. Ultimately, researchers need to find a balance between fidelity of implementation and programme adaptation to obtain effective programmes that are culturally acceptable to local consumers.

¹HIV/AIDS Programme, University of the Western Cape, Bellville 7535, South Africa, ²Adolescent Health Research Institute, University of Cape Town, Red Cross Children's Hospital, Klipfontein Road, Rondebosch 7700, South Africa, ³Department of Psychiatry and Mental Health, University of Cape Town, Groote Schuur Hospital, Observatory 7925, South Africa, ⁴Research Centre for Health Promotion, University of Bergen, Bergen, Norway, ⁵Recreation, Park and Tourism Management and Human Development and Family Studies, The Pennsylvania State University, 201 Mateur Building, Penn State University, University Park, PA 16802, USA and ⁶Prevention Research Centre, The Pennsylvania State University, 105-G South Henderson, University Park, PA 16802, USA

*Correspondence to: L. Wegner. E-mail: lwegner@uwc.ac.za

Introduction

A major public health concern in South Africa is risk behaviour among

adolescents, who make up 21% of the country's total population [1]. In a national survey of risk behaviour among learners (students) in Grades 8–11 at public high schools (n = 10 699, 78.7% of sample aged 14–18 years), prevalence rates for ever having used a substance were 49.1% for alcohol, 30.5% for cigarettes and 12.8% for cannabis [2]. In the same study, 41.1% of learners had ever had sexual intercourse and 16.4% had been pregnant or made someone pregnant. A study of Grade 8 (49.2%) and Grade 11(50.8%) public high school learners (n = 2930) in South Africa, Cape Town, South Africa, reported recent substance use prevalence rates of 31% for alcohol, 27% for cigarettes and 7% for cannabis [3]. The proportion of sexually active 11th grade learners was 57.8% for boys and 42.8% for girls [4]. In 2005, the national human immunodeficiency virus (HIV) prevalence among adolescents aged 15–19 years was reported as 9.4% for girls and 3.2% for boys [5]. The HIV prevalence among young women aged 20 years and under attending antenatal clinics was 15.9% [6]. Furthermore, there is evidence of a covariation of health-risk behaviours [7, 8].

The above figures illustrate the need for effective prevention programmes to reduce risk behaviour among young South Africans. Adolescence is a period when risk behaviours frequently commence; therefore, it is a critical time to promote healthy behaviours. Schools play a major role in the socialization of children and the development of acceptable adult behaviours [9], offer relatively easy access to the adolescent population and the infrastructure and availability of educators means that programmes can be delivered cost effectively [10, 11]. Before interventions can become an integral part of the school system, their effectiveness should be determined through programme evaluation. The majority of evidence based prevention interventions aimed at reducing risk behaviour and promoting health among adolescents has been designed, implemented and evaluated in Northern America [12, 13], Europe and Australia [14]. There is a relative lack of research evaluating health interventions in developing countries [13–17] although recently, the HIV/acquired immunodeficiency syndrome (AIDS) pandemic in sub-Saharan Africa has focussed attention on child and adolescent reproductive health [18]. Reviews of evidence about the effectiveness of HIV prevention interventions among youth in developing countries found that programmes generally had a degree of success in increasing knowledge and attitudes [15–17, 19, 20]. Changing behaviour is more challenging; however, adult-led programmes that were based on the school curriculum and incorporated characteristics previously shown to be effective in developed countries had a positive effect on reported behaviours [15]. Modest effects on the onset and incidence of sexual intercourse and a reduction in the number of sexual partners [17, 20] and improvements in condom use behaviours [19, 20] have been reported. Certainly, there is a critical need to strengthen research in developing countries and for

careful monitoring and evaluation of interventions.

The lack of research in developing countries has meant that interventions in these countries have had to rely upon models developed and evaluated elsewhere [13]. A central question is to what extent can programmes developed in a Western context be adapted for a developing world context? In the developed world, evaluations have focussed primarily on efficacy and effectiveness, with relatively little research on the process of implementation [21]. When moving programme content from one cultural context to another, evaluating the process of programme development and cultural adaptation becomes very important as this reveals the extent to which the adapted programme can be implemented with fidelity and further adaptations that are needed.

Currently, a dynamic tension exists between fidelity and adaptation. Some argue that without adequate fidelity, it is unlikely that programmes will effectively achieve intended outcomes [21]. However, it would seem equally important to consider the local culture and context where the programme will be implemented and to ensure that the programme is adapted to fit consumers' needs. Castro et al. [22] proposed a design strategy for hybrid prevention programmes that incorporate adaptation to enhance programme fit with the culture of the local community, while also maximizing fidelity of implementation. They cautioned about the possibilities of cultural mismatch that can threaten programme efficacy despite high fidelity, when cultural adaptation has not occurred and local life issues and world views have not been considered. Furthermore, the authors advocated the adoption of a community-based participation approach in programme design and research that incorporates both a top-down approach (scientific experts in programme design) and a bottom-up approach (mobilizing community involvement and buy-in).

Aim

The present study describes the process evaluation of a pilot study to evaluate a school-based risk reduction intervention. This intervention was based on successful programmes in the United States but developed for use in a particular South African context. The aims of the process evaluation were to understand how the newly developed programme met local needs and to test the measurement of proximal and distal outcomes in order to develop an intervention that could then be further evaluated with a larger sample. In this paper, we focus on the process of adaptation of US content to a particular South African context and the process evaluation.

The goal of the programme development was to design the programme with

strong input from educators and local experts so that the final programme would be one that would meet local needs, be sustainable, and be implemented with a high degree of fidelity. All the investigators in South Africa and the United States have extensive experience in developing and delivering school programmes. The team was acutely aware of the risks faced by adolescents in this environment and sensitive to language issues, economic disparities and racial issues within the community and schools where the programme would be placed. Initially, the research team took the US content and based on judgement and what was known from empirical research conducted in South Africa developed a new programme called Health Wise. However, the team also recognized that despite their best efforts, a rigorous process evaluation was needed to assess cultural relevance and further refine the programme. Briefly, the process of re- fining the adaptation was that educators were asked to deliver the programme as it was designed, participate in an extensive evaluation of the process and make recommendations for modifications. Our evaluation of the process of adaptation was guided by the following research questions. (i) What elements or aspects of the local culture and context informed the further adaptation of the HealthWise programme? (ii) What elements of the programme were considered difficult or inappropriate? (iii) How did educators deviate from the programme and why? This helped us identify how the programme should be further adapted for use in South African schools.

Project settings

Life skills education in South Africa

Life skills education has gained increasing support as a strategy to address risk behaviour. Experiential techniques and participatory methods such as role- play are employed to help young people gain knowledge; make positive, healthy decisions; ex- amine attitudes; develop skills and avoid risks. Effective life skills programmes should start early, be data driven and theory based, exist as a separate topic rather than be integrated throughout the curriculum, include educator training in participatory methods and monitored and evaluated [23]. The Department of Education, South Africa, has introduced Life Orientation as a compulsory learning area from first to twelfth grade [24, 25]. Life Orientation includes health promotion, wellness and well-being as core learning outcomes and accommodates the Department of Health's Life Skills and HIV/AIDS education programme [25]. Although life skills education can positively alter behaviour such as delaying sexual initiation and preventing substance use [23], coverage and content of life skills education vary greatly between schools, and schools where learners are at higher risk of pregnancy and HIV infection have been the least likely to offer life skills [26]. There is a need for educator training

and support because educators struggle with the transfer of sexual reproductive knowledge and skills and facilitative teaching methods in the classroom context [27].

Developing the Health Wise programme

Health Wise is a comprehensive life skills programme that aims to reduce risk behaviours by increasing the influence of protective factors such as positive behaviours and attitudes. It adopts a positive youth development perspective. Targeted risk behaviours include substance use and sexual risk behaviour. The protective factors include skills to make leisure positive and meaningful; self-management skills such as learning how to reduce anger, anxiety and stress; negotiating relationships; identifying and avoiding risky situations and learning facts about substance misuse and sexual health [28]. Initially, HealthWise comprised 17 lessons and was taught to eighth grade learners (mean age 14 years, age range 13–16 years).

The Health Wise programme was not developed for and has not been used in the US. Rather, Health- Wise combines three separate components that have been implemented independently in the US. One component involves elements of a Life Skills Training programme [29] shown to be effective in reducing the onset of substance use [30]. It focuses on teaching developmentally appropriate skills, such as anger management and decision making, and includes lessons regarding the effects of specific substances. The second component is an evidence-based leisure education intervention called Time Wise: Taking Charge of Leisure Time [31]. Time Wise helps youth learn personally meaningful and healthy ways to use their free time, avoid boredom, develop interests, become aware of community resources and overcome constraints to participation in desired leisure activities [32]. The third component consists of an integrated approach drawn from a number of sexuality curricula, which aims to increase awareness of risky sexual behaviour and teach learners how to avoid sexual risk including pregnancy and transmission of HIV and other sexually transmitted infections. Learners learn to set personal goals for sexual abstinence or alternatively low-risk sexual involvement and practice skills needed for effective condom use. In addition, learners are made aware of the right of each individual to choose if, when and how to have sexual relations, and how to communicate this to others. Finally, learners are introduced to community resources that cater for adolescent reproductive health needs.

The combination of the three components into one package reduced overlapping sessions and allowed for an integrated approach to broader based social skills such as managing risk. The integration of these three components was accomplished

through a careful analysis of programme content, an understanding of the school context in which the programme was to be delivered and an appreciation of the challenges facing adolescent development within this economically deprived context. In addition, according to the principle of community-based participation in programme planning, evaluation and research, the team worked together with stakeholders from the regional education department to ensure that HealthWise objectives supported specific learning outcomes for the eighth grade Life Orientation curriculum.

Methods

Schools and participants

The context of the study was an economically deprived community in Cape Town, South Africa. In order to ensure a fair chance of success for the pilot intervention, we identified 12 of the 16 high schools in this community that were 'adequately functioning' and then randomly selected four of these schools to participate in the study. Two classes at each of the four schools were randomly selected to receive the Health Wise intervention (n = 226).

Life Orientation educators at participating schools were invited to participate in the study. Of the eight participants, six were women, all were Coloured (Asian, European, Khoisan and African ancestry), and their ages ranged from 32 to 48 years. Five participants had Bachelor's degrees, one had a Master's degree and the qualifications of two were unknown. Their experience of teaching Life Orientation ranged from 0 to 20 years. Thirty-two randomly selected learners from participating classes at the four schools took part in four gender-specific focus groups. Learners' ages ranged from 13 to 16 years, 16 were boys, 25 were Coloured and 7 were Black.

Educator training

Eight educators and one principal attended a three-day training workshop held in January 2003, and each received an educator training manual [33]. Training consisted of describing programme theory and expected outcomes, discussing maintaining fidelity and discussing the process evaluation and the educators' role in helping to modify the programme. In addition, participatory methods were employed to enable educators to become familiar with each of the lessons in the curriculum and practice teaching some of the activities. Educators were thus aware that Health Wise was based on US content that had been modified for the South African context and that they were going to be instrumental in further modifying Health Wise. The workshop was followed up with regular monthly meetings, whereby educators could reflect on the curriculum, share their experiences and

discuss difficulties.

Table I. *Overview of data collection*

Data source (number)	Method	Examples of interview questions
Educator focus groups (four)	Semi-structured question guide	To what extent were you able to implement the planned curriculum as set out in the educator manual? What were your reasons for deviating from the planned curriculum? To what extent does HealthWise meet the needs of your learners in terms of their specific background? Cultural diversity? Age? Context? Interests?
Learner focus groups (four)	Semi-structured question guide	How useful is HealthWise in your life? What do you think about the lesson? (<i>For each of the 17 lessons</i>) How does the lesson meet your needs? How interesting was the lesson? How did the lesson help you with any problems you may have? What would you like to change about HealthWise?
Interviews with principals (two)	Semi-structured question guide	What are your impressions of how HealthWise was implemented in your school? What difficulties were you aware of during the implementation of HealthWise?
Lesson evaluation forms	Open-ended questions	Please reflect on your perceptions of the lesson. What worked, and why? What did not work, and why? How would you change the lesson? (<i>For each of the 17 lessons</i>)
Lesson observations (two sessions)	Field notes	—

Data collection

An overview of data collection is presented in Table I. We collected data from focus groups with educators held during and after the implementation of Health Wise, focus groups with learners, interviews with principals, lesson evaluation forms completed by educators after every lesson and lesson observations. The focus groups and interviews were audio taped and later transcribed.

Data analysis

As the present study was a process evaluation with specifically defined questions, we used a deductive, structured approach to data analysis. We devised a template using our evaluation questions, which served as a filter to organize the data and facilitated thematic analysis. Codes and categories were identified and grouped into themes based on emerging patterns and similarities.

Credibility, or the integrity and accuracy of the findings [34] was ensured in several ways. First, there was data triangulation through the use of multiple data sources. Second, interdisciplinary investigator triangulation occurred as research team member's individually analysed data and then conferred. Third, we discussed findings with participants to ensure accurate representation of their perceptions and viewpoints.

Ethical approval

The study was approved by the Ethics Committee of the University of Cape Town,

The Pennsylvania State University and the Western Cape Education Department. Informed consent was obtained from participating educators and principals. Parents/ guardians of participating learners received an information letter and gave passive consent. All data were kept confidential.

Results

The results will be discussed under two major themes that emerged from the data analysis, namely, the importance of local culture and context, and fidelity versus adaptation.

Theme 1: local cultural and contextual considerations

As could be expected, cultural and contextual factors within the local community were very relevant for the adaptation of the programme. Dimensions used to guide the adaptation were cognitive-information processes, affective motivational characteristics and environmental characteristics [22].

Cognitive-information processes

We examined the extent to which the core content of Health Wise was relevant to learners' needs, age and stage of development by looking at their responses to and understanding of programme content. Most learners were able to recall the main components and messages of the lessons concerning risk behaviours, skills and self-awareness and found the content interesting and useful. This was substantiated by the educator feedback. Regarding substance use and sexual risk, learners reported that the lessons increased their understanding of how to make healthy choices and taught them new skills:

I liked when they show you what you must do with a condom. We first put it on our fingers they show you first, where you must open it. Look at the expiry date. Squeeze the air out. (Boy learner, 13)

Decision-making, anger management and conflict management skills were regarded as being particularly useful:

It makes me like look at problems and situations differently than what I used to, like the 4C process (decision making), - - nowadays I go step by step through the problem instead of just making a decision. (Girl learner, 14)

Educators felt that learners acquired new knowledge and that Health Wise used a different approach. While this was valued, it challenged both educators and learners:

I think it's new in a sense and refreshing because it brings other ideas from outside the school, and that becomes challenging. It gets our kids to start thinking deeply about issues related to themselves and their health. (Male principal)

Educators perceived the application of this new knowledge in everyday life situations to be more difficult. However, they could assist many learners to apply their new knowledge, particularly in class room situations:

The Conflict Management session was very successful but I still find learners just jump up and start fighting, but there was an opportunity to go back, this is what we have discussed, the warning signs - - it's just that it will take time for them to actually apply their knowledge. (Male educator)

In contrast to their detailed discussion of risk behaviours and learning new skills, learners' discussions about the leisure lessons were superficial. Learners reported an increased awareness of new sport and leisure activities but were hesitant to engage in them:

For me, the lesson on free time, in my free time my sport is soccer but I wanted to try another sport, but then I said no, I can't play cricket and I don't understand cricket and rugby, because in my free time I always play soccer. Soccer is my free time. (Boy learner, 14)

To determine the extent to which learners understood the programme content, we considered the learners' ability to comprehend the material through reading, writing and expressing themselves. Language difficulties sometimes made comprehension difficult and caused implementation delays. Educators spent time explaining terms, for example, 'interests' and 'values'. Each lesson introduction took at least one period, forcing educators to teach individual lessons over a number of periods. Some learners complained about having to write too much:

Educators spoke about how difficult it was for learners to write anything or express themselves. It takes them a long time to think about things and do the worksheets, adding to the time pressures. Also, educators need to spend a lot of time getting learners to understand the terminology. J (educator) explained that the level of his learners made things go slower—he mentioned that some are almost illiterate, some don't listen. (Field notes)

Despite the language and writing difficulties, most educators felt strongly that Health Wise should not be made easier as this was seen as lowering standards and was a culturally sensitive topic:

I think that we should be very careful about dropping standards. We should not drop standards, because that is the universal problem in our country at the moment. And I think that is the only way, keeping standards up there

and bringing them (learners) up there as well. A glossary will be important, but we need to make sure that the level stays like that. We don't expect them to know all the words, but that is where they learn, even if it's big words. That is how they learn. (Male educator)

Most learners felt they learned more from role-plays and discussions than the writing tasks. Educators noted this but observed that these activities tended to delay the progression of the teaching:

I think they (learners) enjoyed the discussion part... that's why they complained about the writing part, you still have to put it down on paper in words, and that's very difficult for them to do. Maybe the kind of themes that are in this book, it's more the kind that stimulate discussion. I tried to rush because I wanted to finish by a certain date and the discussion could have gone on and on. At some point you have to say 'well discussion is finished now'. (Female educator)

Affective-motivational characteristics

We needed to determine how appropriate the Health Wise content was for the local community. Drug abuse was identified by all respondents as a major problem in the community:

Yes, in our community drugs are freely available. Our kids don't see anything wrong with doing drugs and that's shocking. (Male principal)

The lessons on sexual behaviour prompted sensitive reactions in some educators. There was a tension between wanting to promote a conservative approach towards adolescent sexual behaviour and the realities of adolescent sexual behaviour in the community. Not only schools have to deal regularly with the challenge of teenage pregnancy but also educators reported increasing levels of HIV infection among youth. Educators felt that the Health Wise lessons helped learners talk more freely about sexual issues:

The debate is on should sex education be taught at school. At our assemblies and everywhere we talk about abstinence and we say don't get involved in those things, but in Life Orientation class, they talk about these things, they say it's reality, it's happening. Learners also hear from other learners' experiences and that plays a major role in the way they learn about different things. (Male principal)

Some educators expressed discomfort about teaching aspects of the sexuality lessons and explained how they had made adaptations:

You did that lesson (condoms) (laughs). I was very nervous! (Female educator)

She used me to do the condom lesson! (Male educator)

They (learners) wanted to know what oral sex and anal sex is. And you need to explain those terms. I expected some feedback from parents but it did not happen. On the sexual variations, I thought it fit to bring in what is acceptable and what not. (Male educator)

Environmental characteristics

The school environment offered many challenges that needed to be considered in adapting Health Wise. Large classes of 45–60 learners resulted in over-crowded classrooms and learners having to share desks and chairs. This made group work difficult:

She (educator) said that she can't do any group work, she can't even get them to work in pairs because then it would be chaos, because the classroom is so small, and there's no way she can get them into groups because then she wouldn't even be able to move around the classroom. (Field notes)

Educators sometimes had difficulty with the leisure lessons. They ascribed this to a lack of community leisure and recreation resources as well as socioeconomic factors that made it difficult for learners to engage in leisure activities:

Learners were not keen on the lesson 'Beating boredom and developing leisure interests'. They find it hard to become interested in new activities, for them there are always financial costs involved, which is a problem. For many the hindrance is money or transport, and leisure activities are practically non-existent. (Female educator)

Theme 2: fidelity versus adaptation

We determined the extent to which Health Wise was implemented with fidelity and how educators deviated from the programme. Educators understood that because they were participating in a research study, they needed to implement Health Wise according to plan. While they were committed to adhering to the programme, this resulted in feelings of stress and tension, which was exacerbated by Health Wise taking longer to implement than planned. Teaching time was lost and continuity affected by sporting events, tests, high absenteeism rates and even the weather as learners stayed home on cold or rainy days:

I felt very stressed in the beginning because I wanted to stick 100% to the programme. It's only after all the discussions that I relaxed a bit and I improvised. Made the lessons a bit shorter, tried not to leave anything out, but I did it my way. And we completed the worksheets, all of them, that's

the one thing I stuck to. (Female educator)

Adhering to the programme meant that some educators felt restricted by not being able to infuse their own ideas or inject their personal 'teaching style' into the lessons:

I think the main problem here was the length of the lessons. And it being a research project, the idea was that we had to follow strictly according to what was in the educator manual. But I think it would be a totally different scenario if you can improvise. If you have the freedom of changing things, then it will not be a problem. I think if we can get to that stage where people can do the lesson, improvise, do it according to their circumstances, then it will be a different scenario. (Male educator)

Clearly, there was a dynamic tension between the desire to adhere to plan and the pressure to make adaptations in accordance with learners' needs and the context. As the study progressed, we realized that we had to find a balance between fidelity and adaptation:

But I cannot proceed if the learners didn't understand the concept. So once we have worked through the concept, although I did not stick strictly to the programme, I was still able to complete it. But it was mostly just a language problem that I had to overcome. And once I'd done that we were able to move on. (Female educator)

Despite the challenges, educators perceived their contribution as valuable and important and felt that they were benefiting from the programme. The training workshop and the educator manual were reported as being very useful. Regular discussion meetings enabled us to monitor and evaluate programme fidelity and provided support for the educators:

The regular support meetings helped especially in times when you feel pressured and you know after the meeting you were not the only one behind... then I would be more relaxed for the next lesson and always accommodated. (Female educator)

We determined the extent to which educators implemented Health Wise with fidelity by examining how they improvised or deviated from the planned programme. We defined 'improvising' as 'spontaneous reactions to the situation' and 'deviating' as 'leaving things out'. Educators mainly tended to improvise rather than deviate from the programme, which we regarded as a positive indication of fidelity:

In Lesson 2, I let learners first list their leisure activities on a piece of paper before writing it into the workbooks. This is because learners don't always seem to understand what is meant by leisure activities. (Female educator)

K and S (educators) gave learners overhead 2.2 as a handout before doing the worksheet to help learners understand the benefits. They felt this should be added to learners' workbooks. (Field notes)

It wasn't part of the lesson but I tried to do some role-play. They (learners) loved it, but because of their level of expressing themselves, there came a time where they couldn't express their feelings. I tried to adapt the lesson, I mean add something else - (Male educator)

Educators deviated from the planned programme for two reasons: time pressure in the second half of the implementation and where they perceived repetition. Most of the repetition was perceived to be in the review and summary lessons, which were omitted from the adapted version of HealthWise.

Adapting HealthWise

Overall, the integration and cultural adaptation of the Health Wise programme was successful. The process evaluation, however, highlighted further pertinent cultural and contextual factors and identified areas for adapting Health Wise in order to promote better programme-consumer fit. These areas centred on time, language and leisure. The original Health Wise programme and the adapted version are presented in Table II. As the general perception of content was positive, the core components were maintained in the adapted programme, although the sequence of lessons was restructured. In order to address the time difficulty, we extended Health- Wise over two years; twelve lessons taught during two terms in the eighth grade and six lessons taught during one term in the ninth grade. Lesson content was streamlined by simplifying or removing activities and worksheets that educators found repetitive, overly detailed or not useful.

We dealt with language problems by removing excess details and ensuring that all wording was local, for example, 'dagga' instead of 'marijuana' and 'supermarkets' instead of 'convenience stores'. We included a glossary of 'New Words' for each lesson.

Leisure lessons were challenging for the educators. From our analysis, we were able to attribute this to (i) sequence of lessons and (ii) perceived and actual barriers to leisure participation. In the adapted programme, the original four leisure lessons were expanded into six lessons. In four consecutive lessons in eighth grade, learners first learn about personal time use, benefits of leisure activities and negative consequences of unhealthy leisure activities. In the second lesson, learners identify community resources and become aware of their responsibility to create different leisure possibilities. Learners then learn about negative consequences of and how to overcome boredom and develop interests. The fourth

lesson deals with leisure constraints and ways to overcome these. In ninth grade, the first leisure lesson deals with what motivates decision making and activity choices and the second lesson teaches learners to plan their leisure interests and manage unplanned free time.

Barriers to leisure participation included the lack of leisure resources in schools and the local community, safety concerns, lack of transport and financial constraints. These barriers, combined with a general lack of awareness of the developmental benefits of leisure for youth, meant that leisure was not regarded as a priority. Clearly, we needed to shift the way that educators and learners thought about leisure, which would be an on-going, long-term task. To facilitate this mind shift and help youth connect to health and leisure community resources, we realized that we had to provide support for the educators and work from a community development approach. Thus, we decided to expand Health Wise to include two youth development specialists whose task was to work alongside the educators and facilitate learners' exploration of and participation in leisure activities.

Table II. Comparison of original and adapted versions of the HealthWise programme

Original programme (2003)	Adapted programme (2004–08)
<i>Grade 8</i>	<i>Grade 8</i>
1. Self awareness	1. Self awareness
2. <i>Exploring free time</i>	2. Managing anxiety
3. My motivation	3. Managing anger
4. Decision making	4. <i>Exploring free time</i>
5. Managing anxiety	5. <i>Free time in my community</i>
6. Managing anger	6. <i>Beating boredom and developing interests</i>
7. <i>Beating boredom and developing interests</i>	7. <i>Overcoming roadblocks</i>
8. Conflict resolution	8. Decision making
9. Review and reflection	9. Managing risk
10. Sexual relationships and community connections	10. Avoiding risky sexual behaviour
11. <i>Free time in my community</i>	11. Myths and realities of drug use
12. <i>Managing daily leisure</i>	12. Avoiding and reducing risk
13. Myths and realities of drug use	<i>Grade 9</i>
14. Myths and realities of sexual behaviour	1. Review
15. Decision making and risk taking	2. <i>Leisure motivation</i>
16. Avoiding and reducing unhealthy risks	3. Community connections
17. Wrap-up	4. <i>Planning and managing leisure</i>
	5. Relationships and sexual behaviour
	6. Conflict resolution

Italics indicate Leisure lessons.

Discussion

The present study supports the notion that school-based programmes based on theories and interventions found to be effective elsewhere can be successfully adapted for use in developing countries. This process was facilitated by a design strategy that encouraged fidelity of implementation while allowing adaptation for the local culture and context. Specific characteristics of effective interventions in developed [12] and developing countries [15, 20, 23] have been identified previously. In the present study, it is useful to identify the characteristics that contributed to the successful adaptation of HealthWise.

The HealthWise programme had a sound theoretical basis [28] and incorporated programme components previously shown to be effective in the United States [29–31]. It was designed as a self-contained life skills programme nested within the Life Orientation curriculum and was taught by trained educators, supporting the notion that curriculum-based, adult-led programmes are effective [15, 23]. As it is easier to establish low-risk behaviours than to change existing behaviours, programmes should be aimed at younger children [20, 23]. HealthWise was designed for young adolescents aged 13–14 years in the first grade of high school. Effective interventions focus on reducing specific risk-taking behaviours by means of experiential, interactive activities, which convey information about risk, social influences and pressures; increase skills and confidence and reinforce personal values and group norms [12]. The present study revealed that the content of HealthWise was relevant for the learners, focussed on sexual and substance use risk behaviours and included activities such as role-plays and a condom demonstration that learners enjoyed. In order to promote educators' confidence and competence to teach the programme, they attended a training workshop, participated in regular support meetings and each received a comprehensive training manual. For a programme to be properly implemented, educators must be properly trained [20, 23]. During the support meetings, we were able to pick up difficulties such as sensitivity around sexual material and negotiate ways to deal with these problems. These sensitivities are not uncommon among educators [27] and programmes should be prepared to cope with this challenge [20].

Programmers need to consider available resources, or the lack thereof, especially in resource-poor areas [20]. A flexible approach and a thorough understanding of the constraints, such as overcrowded classrooms and limited leisure resources, enabled us to adapt Health Wise accordingly. The introduction of two youth development specialists was a very powerful adaptation that holds much promise to increase the fidelity and sustainability of Health- Wise. However, future research will need to determine the effect of their intervention. We also intend to

determine the cost effectiveness of Health Wise. Finally, the outcome evaluation will reveal the impact of Health Wise on knowledge, attitudes, self-efficacy and risk behaviours.

Conclusion

This study showed how local culture and contextual factors were used to inform the adaptation of a programme based on US school-based, risk prevention programmes. The initial attempt to adapt the programme was further modified through an extensive process evaluation. Regarding fidelity, we found that educators were committed to implementing the programme as planned. However, in practice, this was not always possible and resulted in feelings of stress. Involving stakeholders in the process of adaptation ensured ownership and investment in the programme, which was important for sustainability. The adapted Health Wise programme is currently being implemented as a 5-year effectiveness study in nine South African high schools, funded by the US National Institute on Drug Abuse.

It is important to note that the adaptation process cannot be accomplished in one step by programme developers working alone. New school-based programmes need to be field tested and be open to feedback from educators, administrators and learners. Ultimately, researchers need to find a balance between fidelity of implementation and programme adaptation in order to obtain effective programmes that are culturally acceptable to local consumers.

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