Georgia HIV Prevention Project

Operations Research Report:

Evaluation of the Effectiveness of a Healthy Lifestyles Curriculum among Students of Secondary Schools in Tbilisi and Telavi

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Contract GHS-I-04-07-00005-00

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List of Acronyms

AIDS	acquired immunodeficiency syndrome
BPU	Bemoni Public Union
BSS	behavior surveillance survey
DID	difference in differences test
ESPAD	European School Project on Alcohol and Other Drugs
GHPP	Georgia HIV Prevention Project
HIV	human immunodeficiency virus
HLC	Healthy Lifestyles Curriculum
IEC	Information, Education, and Communication
MOES	Ministry of Education and Science
MOLHSA	Ministry of Labor, Health, and Social Affairs
NEP	National Education Plan
NGO	nongovernmental organization
PE	physical education
SC	Save the Children U.S.
STI	sexually transmitted infection
UN	United Nations
UNAIDS	Joint United Nations Programme on HIV/AIDS
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNFPA	United Nations Population Fund
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development

I. Executive Summary

Over the last decade, there have been a number of initiatives carried out to support healthy lifestyles education among youth. These initiatives, mostly supported by international organizations, have assessed the needs for healthy lifestyles education as well as teachers, parents, and students trained in healthy lifestyles topics. However, these initiatives were uncoordinated, small scale, and unsustainable. The influence of these early attempts to overcome a culturally conservative environment and a change-resistant educational system laid the foundation for more recent successes to institutionalize the inclusion of healthy lifestyles education in the formal school curriculum.

The USAID-funded Georgia HIV Prevention Project (GHPP) is working on the design and implementation of interventions among youth, namely expanding outreach and education through the Healthy Lifestyles Curriculum (HLC) as well as other activities to educate youth about HIV. These activities are done in partnership with the Ministry of Education and Science (MOES) of Georgia. The broad package of interventions supported by GHPP includes the design and pilot testing of the consolidated HLC. In July 2010, GHPP collaborated closely with UNFPA, UNICEF, and MOES to convene a consultation meeting of international organizations and local experts to develop recommendations for MOES on how to update/consolidate existing healthy lifestyles curricula and include healthy lifestyles topics into the National Education Plan (NEP). As a result of this meeting, GHPP sought to demonstrate to MOES the effectiveness of school-based implementation of the consolidated HLC on students' knowledge through an operations research study.

The primary objective of this operations research study is to document the implementation and effectiveness of the HLC pilot intervention in improving knowledge of healthy lifestyles topics among secondary school students. The study had two components — to detect the difference in students' knowledge level from baseline to follow up and to develop recommendations on how to refine the intervention.

The effectiveness of the HLC was evaluated in a quasi-experimental research design, where 14 secondary schools in Tbilisi (capital city) and 7 secondary schools in Telavi (Kakheti region), piloted the intervention and 7 schools in Tbilisi and 3 schools in Telavi served as control groups. This evaluation used a quantitative survey, which was self-administered by youth before and after the delivery of the 5 HLC lessons in biology and physical education (PE) classes. A difference in differences test was used to calculate the difference in the level of knowledge of healthy lifestyles topics from baseline to follow-up for the pilot schools and the corresponding difference for the control schools and to test the statistical difference between these two groups.

This evaluation showed that students at the pilot schools answered on average 6.5 more questions correctly on the endline survey than did students at the control schools, a relative and statistically significant difference of 11 percent. These results remained true when controlling for gender and grade.

Based on the results, the pilot HLC had a positive effect on students' learning and teachers' ability to deliver information that can protect young people's health and wellbeing. Based on the

thorough and collaborative process to consolidate the many healthy lifestyles curricula in Georgia and then test the use of this consolidated curriculum within the formal school system with success, it is recommended that

- MOES adopt this tested consolidated version for use in the formal school setting by including it in the upcoming biology text book revision process; and
- Technical assistance be provided to MOES to roll out trainings of biology teachers at national scale to fully institutionalize the delivery of the HLC.

This report also contains a set of recommendations of how to improve the content as well as the delivery of the HLC to students in schools.

II.   Introduction

Global Context

Worldwide, adolescent boys and girls have hopes and dreams of living lives that are satisfying, happy, and healthy. Their excitement for life and pursuit of identity is embodied in their longing for independence and desire to take on new responsibilities. The skills and behaviors they develop during this transition to adulthood can determine if they will become productive and responsible adults. However, many secondary school curricula around the world lack relevant health information or skill-building experiences that will lay the foundation for this transition to productive adulthood. Without the decision-making skills that affect their health, adolescents are susceptible to pressures of initiating alcohol and drug use and early sexual debut. The consequences are well known: without access to comprehensive health education coupled with health (including reproductive health) services, adolescents are vulnerable to early sexual debut, unintended pregnancies, and HIV infection. Thus, acquiring beneficial knowledge, developing positive attitudes, and establishing healthy practices and behaviors at an early age set the stage for longer-term health.

Global Evidence on Tobacco Use

It is widely recognized that smoking behavior is usually established during adolescence. Most adult smokers report that they had their first cigarette or became addicted to nicotine during adolescence, and there is evidence of a positive relationship between adolescent cigarette use and the subsequent use of alcohol and marijuana.[1] International evidence shows that anti-smoking campaigns can reach vast numbers of youth and prompt negative thoughts about smoking, increase knowledge of the health effects of smoking, help smokers quit, and maintain this behavior change.[2] Furthermore, the school setting can provide an important venue for efforts to reduce smoking uptake by young people. Existing international evidence of the cost-effectiveness of school-based interventions to prevent the uptake of smoking among children and young people indicates that school-based smoking prevention programs may be an efficient use of resources within the health care and education jurisdictions considered.[3]

> The UN Convention on the Rights of the Child states: Children have the right to get information that is important to their health and well-being. (Article 17)

Global Evidence on Alcohol Use

There is widespread agreement that the health and well-being of many young people today are being threatened seriously by the use of alcohol. International evidence points to an increase in hazardous and harmful drinking patterns, such as drinking to intoxication and binge drinking,

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[1] World Health Organization/Europe, *Inequalities in Young People's Health: Health Behavior in School-Aged Children Survey,* 2005/2006 Report

[2] Woodward A, editor. Insights form Australia's National Tobacco Campaign. Tobacco Control 2003; 12 (suppl 2)

[3] *School-based interventions to prevent the uptake of smoking among children and young people: cost-effectiveness review.* West Midlands Health Technology Assessment Collaboration, 2009. retrieved from http://www.nice.org.uk/nicemedia/live/12827/47624/47624.pdf

among adolescents and young adults.[4] Most research on youth alcohol consumption has found associations with truancy, falling behind in schoolwork, unplanned and unprotected sexual activity, arguments with friends, destructive behavior, and getting into trouble with the police, as well as a higher risk of alcohol abuse and dependence and cannabis use later in life.[5] Early onset and early initiation into substance use have been highlighted as specifically important (and potentially preventable) precursors of later problems with alcohol. Again, the school setting is considered to be a relevant venue for educational interventions and therefore alcohol education is recommended as an integral part of the school curriculum.[6]

Global Evidence on Providing Sexual Health Education

The United Nations Educational, Scientific and Cultural Organization (UNESCO) commissioned a study (2009) that examined 18 sexual health curricula from around the world and reviewed 87 studies of sexuality education interventions designed to reduce sexually transmitted infections (STIs), HIV, and/or unintended pregnancies.[7] The review established that sexual health education programs do not increase sexual activity. In fact, the research confirmed that most programs reduce misinformation and increase correct knowledge; many of them clarify values and reinforce positive attitudes, and some increase skills for decision making and communication. Specifically, behavioral changes attributed to some programs include a delayed initiation of sexual intercourse, reduced frequency of sex, reduced number of sexual partners, and increased use of condoms and contraception.

Georgian Context

Georgia has been struggling to rebuild its health and education systems after gaining independence from the Soviet Union in 1991. In traditional Georgian culture, alcohol use is ingrained in local customs and informal celebrations. Many children are exposed to frequent alcohol consumption and accompanying tobacco use by adults, without the intergenerational dialogue that devalues the use of these substances.[8] Moreover, discussion of reproductive health issues is looked down upon, often considered unnecessary and inappropriate by most parents and teachers. While sexual debut in Georgia is relatively late in adolescence, use of family planning methods is quite low, leading to one of the highest induced abortion rates in the region at 1.6 per woman.[9] Furthermore, considering increasing HIV infections in the country,[10] the need to focus on improving young people's access to healthy lifestyles education is paramount.

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[4] *Global status report on alcohol and health*. World Health Organization 2011. retrieved from http://www.who.int/substance_abuse/publications/global_alcohol_report/msbgsruprofiles.pdf
[5] World Health Organization/Europe, *Inequalities in Young People's Health: Health Behavior in School-Aged Children Survey,* 2005/2006 Report
[6] PH7 School-based interventions on alcohol: guidance . National Institute for Health and Clinical Excellence. 2007. retrieved from http://guidance.nice.org.uk/PH7/Guidance/doc/English
[7] Report of the United Nations Special Rapporteur on the right to education. July 23, 2010. Document A/65/162. Sixty-fifth session of the General Assembly.
[8] Youth-Friendly Pharmacies: Using Partnership Defined Quality for Youth to Measure Increased Availability and Accessibility of Quality Reproductive Health Services for Youth in the Republic of Georgia. Healthy Women in Georgia, JSI Research and Training Institute, Inc. 2007.
[9] Reproductive Health Survey Georgia 2010; Centers for Disease Control, USA, and Ministry of Labour, Health and Social Affairs of Georgia (preliminary unpublished data).

National Evidence of Tobacco, Alcohol, and Drug Use

Various organizations have carried out smaller scale studies in Georgia over the last decade illuminating the health behaviors of adolescents. One study, "Risk Behaviors among Adolescents in Georgia," was conducted by the National Curriculum and Assessment Center within MOES in 2007.[11] The research covered almost a thousand 9th and 11th grade respondents from public schools of Tbilisi, Kutaisi, and Batumi. It revealed that approximately 10.9% of adolescents were regular smokers of tobacco. Males, older adolescents, and those living in urban locations were more likely to smoke cigarettes. Adolescents who smoke reported they had a positive attitude toward smoking and were not afraid of parental punishment. The study also reported that approximately 9.6% to 20.3% of adolescents drink alcohol regularly. Males were more inclined to binge drinking than females. Adolescents who live in Tbilisi were more likely to get intoxicated than adolescents who live in Batumi and Kutaisi. Adolescents who like to drink identified themselves as drinkers, did not feel that drinking is disgusting, and felt they had social approval from family members of their binge drinking. In terms of drug use, approximately 12.5% of adolescents surveyed had ever tried or smoked marijuana while a smaller percentage of 2.1% had tried other types of drugs, including heroin (0.6%), morphine (0.6%), cannabis milk (0.6%), and ecstasy (0.3%). The results indicated that males were more likely to smoke marijuana than females.

These results have been supported by a more recent 2009 study, which rigorously followed the criteria of the European School Project on Alcohol and Other Drugs (ESPAD). The study found that during the previous 30 days, 16% of 10th grade students (23% of the boys and 10% of the girls) had smoked cigarettes; about 41% of students (49% of the boys and 34% of the girls) had indulged in heavy episodic drinking (consuming five alcoholic drinks or more on one occasion); and more than 3% of all questioned students (6.5% of the boys and 0.8% of the girls) had used marijuana or hashish.[12]

According to the behavior surveillance survey (BSS) conducted by GHPP among youth (15–17 year olds; secondary school pupils of 9th to 12th grades) in Tbilisi in 2011,[13] 56.3% of male pupils and 27.9% of female pupils have smoked tobacco; and 18.3% of male pupils and 3% of female pupils smoke on a daily basis. Approximately 90% of pupils have drunk some kind of alcohol some time in their life, regardless of gender or age group, 53.6% of male pupils and 42.4% of female pupils had been drunk at least once in their life. Sedatives were identified as the most often tried (tried by 15% of male pupils and 18.9% of female pupils) and the easiest legal drugs to obtain (approximately 50% of school pupils perceive sedatives as "very easy" or "fairly easy" to get). As for drugs, up to 20% of school pupils (both male and female) reported having used one or more illicit drugs. The next most often tried drugs were marijuana (tried by 11.6% of male pupils and 0.6% of female pupils) and ecstasy (tried by 7.4% of male pupils and 1.3% of female pupils). As for sexual relations, 53.8% of male pupils and 1.1 % of female pupils had ever had sexual

[10] AIDS and Clinical Immunology Research Center. Data retrieved from
http://www.aidscenter.ge/epidsituation_eng.html
[11] *Risk Behaviors among Adolescents in Georgia*. Shorena Sadzaglishvili (National Curriculum and Assessment Center) ; Ilia Chavchavadze State University; 2008
[12] The Alcohol and Other Drug Use in Georgian Students – the pilot study rigorously following criteria of ESPAD; Ministry of Labour, Health and Social Affairs of Georgia; 2009
[13] Knowledge, Attitudes and Practices of HIV/AIDS among School and University Students in Tbilisi – 2011. Georgia HIV Prevention Project (preliminary unpublished data).

intercourse. Noticeably, slightly more than 1 of every 5 male pupils (21.8%) reported having sex with a sex worker in the previous 12 months, while none of the female pupils reported having had sex with a sex worker. The study revealed that more than 90% of school pupils (both male and female) had heard of AIDS, and 67.7% of male pupils and 66% of female pupils had heard of HIV infection, whereas only 7.7% of male pupils and 5.2% of female pupils had comprehensive correct knowledge of HIV transmission.[14]

National Evidence on Reproductive Health

UNFPA conducted the most recent reproductive health study among adolescents in 2009.[15] The study was conducted among 600 respondents, 14 and 16 years of age. Key results show that more than half of respondents believe that education about both sex and reproductive health issues should be provided at school. Over 90% of adolescents reported having marriage intentions (with boys intending to marry between the ages of 20 and 25 and girls between 18 and 24). Pregnancy prevention strategies were not as widely known but still a majority of respondents cited abstinence (72%), condoms (73%), daily hormonal pills (66%), and intrauterine devices (55%) as ways to prevent pregnancy. Moreover, almost all respondents (98%) knew about abortion. The study respondents said one-third of their male classmates had had sexual relations at the age 14–15 and almost one-third at the age 16–17. A small share (8.4%) had had sexual relations before 14 years of age, also a small share at the age of 18–19 years. A somewhat smaller share of respondents' female classmates also had had sexual relations, but at an older age (16–19 years). The age of the majority of partners of both the boys and the girls was 20 years and older.

Thus, existing national evidence of tobacco, alcohol, and drug use as well as of reproductive health indicates a critical need among Georgian adolescents for accurate, current, and relevant information and skill building to help them make informed decisions on healthy lifestyle choices.

III.   Background

History of Healthy Lifestyles Education in Georgia

Traditionally Georgia's educational curriculum was not designed to provide adolescents with relevant health information and life skills that could support a healthy transition to adulthood by averting risky behaviors.

> Healthy lifestyles education in the Georgian context includes strategies to improve students' knowledge, attitudes, and practices of tobacco, alcohol, and illicit drug use and sexual health information specifically on STI/HIV prevention and unplanned pregnancy.

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[14] Comprehensive correct knowledge means identification of ways to prevent sexual transmission of HIV and rejecting major misconceptions about HIV transmission.
[15] *"Adolescents Reproductive Health Survey in George"* prepared within the framework of the EU/UNFPA co-funded project "Reproductive Health Initiative for Youth in the South Caucasus," 2009

Over the last decade, there have been a number of initiatives carried out to support healthy lifestyles education among youth. These initiatives, mostly supported by international organizations, have assessed the needs for healthy lifestyles education as well as the need for teachers and others trained in healthy lifestyles topics and the development and dissemination of information, education, communication (IEC) materials. However, these initiatives were uncoordinated, small scale, and unsustainable. Most previous projects designed their own curricula, adapted from internationally recognized sources, and implemented these curricula through extra-curricular or elective subjects, coordinating only with local education authorities. Thus, student's access to this information was confined to only those who self-selected to partake in the activity, was not uniform at a national level and was dependent on the funding cycles of donor and nongovernmental organizations (NGO) projects. For example, the highly successful USAID-funded Healthy Women in Georgia project conducted a multi-faceted approach to improving young people's access to sexual and reproductive health information. Centered on extracurricular healthy lifestyles sessions where secondary students remained after school to explore health-related issues, the program also included peer education, the creation of a youth-friendly pharmacy network, a hotline, and community-based, youth-led activities (e.g., World AIDS Day events, competitions, etc).

While the program was successful in affecting young people's knowledge and attitudes, there was no plan to expand the program beyond the two districts in the Imereti region, and the afterschool program was not continued once the project ended.[16]

Current Status of Healthy Lifestyles Education in Georgia

The influence of the these early attempts to overcome a culturally conservative environment and a change-resistant educational system laid the foundation for more recent successes to institutionalize the inclusion of healthy lifestyles education in the formal school curriculum.

In 2009, within the framework of the Reproductive Health Initiative for Youth in the South Caucuses project, the UNFPA developed a national concept paper for holistic development and healthy upbringing.[17] This paper included policy

> **The USAID-funded GHPP**, from 2010 to 2014, catalyzes HIV prevention among high-risk groups in order to avert the spread of HIV to the general population. One of the main objectives of the GHPP is to implement prevention activities with youth, identifying, adapting, and implementing a range of proven HIV prevention interventions. These interventions include mass media (i.e., a youth-focused Web site and SMS campaign), youth-driven, community-based activities through local partners and working with influential parents and priests. Most important is the project's goal to institutionalize Healthy Lifestyles Education in secondary schools in collaboration with MOES in order to scale up youth education in HIV prevention and the social determinants that can lead to increased risk of HIV.
>
> Complementary objectives of GHPP include HIV prevention in primary high-risk groups at the community level, national level behavior change communications to reduce HIV stigma, and national policy dialogue to improve HIV prevention effectiveness.

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[16] Healthy Women in Georgia Project: Assessing Change in the Knowledge, Attitudes and Practices of Youth in Two Districts of Imereti, Georgia, Regarding Healthy Lifestyles and Reproductive Health; Mid-point Report (2006)

[17] UNFPA and EU (2009), *National Concept Paper for the Holistic Development and Healthy Upbringing; Reproductive Health Initiative for Youth in the South Caucuses project.*

recommendations for formal education in healthy lifestyles issues, disaggregated by age and educational level, as well as informal education topics for parents, NGOs, school medical personnel, psychologists, and peer educators.

The USAID-funded GHPP is currently working on implementation of interventions among youth, namely expanding outreach and education through the HLC as well as other activities to educate youth about HIV, which is done in partnership with MOES of Georgia. One key intervention, as part of a broad package of interventions supported by GHPP, has been the design and implementation of the HLC pilot.

In July 2010, GHPP collaborated closely with the UNFPA, UNICEF, and MOES to convene a consultation meeting of international organizations and local experts to develop recommendations for MOES on how to include healthy lifestyles education topics into the NEP, which governs teaching and learning processes in all schools in Georgia. Informed by the UNFPA National Concept Paper, the meeting, which was attended by 29 participants, resulted in the recommendation to develop one unified curriculum for each secondary school grade, which would then be incorporated into the NEP. Subsequently, the National Curriculum and Assessment Center included healthy lifestyles topics for the first time in the draft NEP (2011 – 2015). This plan was officially endorsed by MOES in March 2011.

Recommendations from the consultation included the need to develop and pilot a consolidated HLC in secondary schools by training public school teachers in use of the curriculum and evaluating student knowledge and attitudes after HLC sessions. In partnership with Bemoni Public Union (BPU), a 9th and 10th grade HLC was developed with accompanying teacher guides and student handbooks and then implemented in selected secondary schools in Tbilisi (capital) and Telavi (Kakheti region) during biology and PE classes. GHPP then conducted an evaluation of the HLC pilot to measure the effectiveness of its implementation and provide technical recommendations to MOES on scaling-up and institutionalizing use of the HLC.

IV. Research Objectives

The primary objective of this operations research study is to document the implementation and effectiveness of the HLC pilot intervention in improving knowledge of healthy lifestyles topics among students of secondary schools in Tbilisi and Telavi.

The study has two components — the main purpose of the first was to detect the difference in students' knowledge level from baseline to follow up; the main purpose of the second component was to refine the intervention in the course of its implementation. It is also hoped that this research will lead to a better understanding of how such an educational intervention can best be designed, implemented, and refined in Georgia, as well as in other countries in the region in need of institutionalization of healthy lifestyles education in secondary schools.

This evaluation report provides a detailed overview of the evaluation methodology and results of the HLC pilot test and provides recommendations to MOES to improve the quality of HLC implementation and scale-up.

V. Description of HLC Intervention and Development of HLC Evaluation

Development of HLC and Complementary Materials

At the July 2010 consultation meeting, recommendations were provided on how to streamline existing healthy lifestyles curricula currently in use across Georgia. From these recommendations, BPU began to adapt the HLC used under the Healthy Women in Georgia project for use in the formal secondary school curriculum. In order to facilitate the use of this curriculum in public schools, an agreement was reached with the Teachers Professional Development Center at MOES for GHPP to pilot the HLC curriculum in 21 public secondary schools. On December 17, 2010, a Memorandum of Understanding was signed with MOES for implementation to begin in Tbilisi and Telavi during the 2010-2011 academic year.

To enhance the use of the adapted HLC, BPU also developed complementary materials. This included a teachers HLC manual and activity book to provide teachers with the resources and background information they needed to effectively deliver the HLC and address key issues and messages related to tobacco use, alcohol consumption, drug use and dependence, early marriage and pregnancy, and STI/HIV. During the HLC implementation, teachers were provided with presentation materials (i.e., PowerPoint presentations) to facilitate the delivery of the HLC in the classroom. Additionally, BPU developed a 45-page, color illustrated, healthy lifestyles booklet for students to reinforce the information they were learning through the HLC. This booklet was designed for individual use and provided to each student to take home and keep.

HLC intervention

A timeline of the full pilot implementation process, including all workshops and trainings, is presented in *Figure 1*.

Figure 1: Summary of HLC pilot intervention timeline
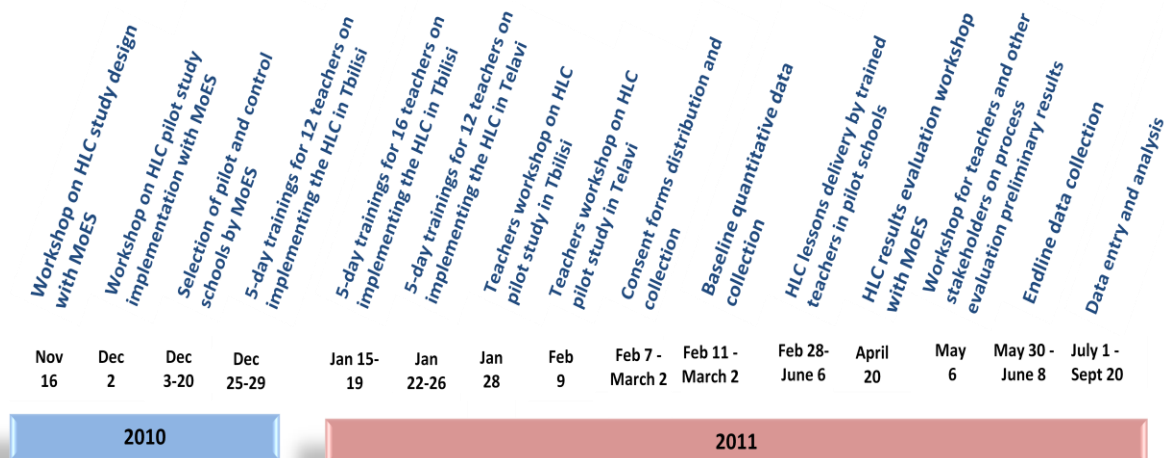
Prior to the HLC lessons delivery, BPU trained 40 teachers in the use of HLC (20 teachers of biology and 20 of physical fitness) from 21 selected schools in Tbilisi and Telavi. All trained

teachers were provided with HLC teaching materials, and students of pilot schools were provided with booklets developed by BPU. Biology teachers delivered five unique 45-minute lessons for grades 9 and 10; the PE teachers also delivered five unique 15-minute lessons for each grade level at the start of the PE class. The teachers planned these lessons within their teaching schedules and all lessons were completed within a 12-week period. Unique lesson numbers (in italics in *Table 1*) were used in the process evaluation stage to ensure all lessons were assessed.

Table 1: HLC lesson topics per grade and type of teacher

	9th Grade		10th Grade	
	Biology Teachers (# of lessons conducted)	**PE Teachers (# of lessons conducted)**	**Biology Teachers (# of lessons conducted)**	**PE Teachers (# of lessons conducted)**
Lesson 1	Drug Use Unique Lesson # 1 (*21 lessons conducted*)	Unhealthy Habits and Addiction Unique Lesson #6 (*17 lessons conducted*)	Addiction Unique Lesson # 11 (*21 lessons conducted*)	Dangers of Marijuana Use Unique Lesson #16 (*15 lessons conducted*)
Lesson 2	Tobacco Use Unique Lesson #2 (*21 lessons conducted*)	Tobacco Use Unique Lesson #7 (*15 lessons conducted*)	Health Conse-quences of Drug and Alcohol Use Unique Lesson # 12 (*21 lessons conducted*)	Dangers of Non-medical Use of Prescription Drugs Unique Lesson #17 (*14 lessons conducted*)
Lesson 3	Alcohol Use Unique Lessons #3 (*21 lessons conducted*)	Alcohol Consumption Unique Lesson #8 (*15 lessons conducted*)	Dangers of Marijuana Unique Lesson #13 (*21 lessons conducted*)	Myths and Realities about Drugs Unique Lesson #18 (*14 lessons conducted*)
Lesson 4	HIV/AIDS Unique Lesson #4 (*21 lessons conducted*)	HIV transmission Unique Lesson #9 (*15 lessons conducted*)	HIV/AIDS related stigma Unique Lesson #14 (*21 lessons conducted*)	Risks of HIV Transmission Unique Lesson # 19 (*14 lessons conducted*)
Lesson 5	Early Marriage and Pregnancy Unique Lesson #5 (*21 lessons conducted*)	Understanding Gender and Sex Unique Lesson #10 (*15 lessons conducted*)	Sexually Transmitted Infections Unique Lesson # 15 (*21 lessons conducted*)	Decision Making and Assertion Unique Lesson #20 (*14 lessons conducted*)

Lessons on tobacco use, alcohol consumption, drug use, and HIV/AIDS were conducted for both grades by both biology and PE teachers. There were some topics discussed during only biology or PE classes. Issues related to early age pregnancy were covered with 9th grade students in biology lessons and STIs were discussed with 10th grade students. PE teachers delivered lessons on gender and sex for 9th grade students and assertion for 10th graders.

It should be mentioned that PE teachers could not carry out all planned lessons in some schools. In four pilot schools (two in Tbilisi and two in Telavi) PE lessons were not conducted at all for various reasons (e.g., in one school, the teacher trained by the project moved to another school that did not participate in the pilot; in another school, the PE teacher was an active athlete who participated in international competitions and was not present to participate in the pilot). In one pilot school in Tbilisi, PE lessons were carried out only for 10th grade students. In another school, the PE teacher conducted only the first lessons for both grades.

VI. HLC Evaluation Methodology

Methods

The effectiveness of the HLC was evaluated in a quasi-experimental research design, where 14 secondary schools in Tbilisi (capital city) and 7 secondary schools in Telavi (Kakheti region), received the intervention and 7 schools in Tbilisi and 3 schools in Telavi served as control groups. Experimental and control schools were not randomly selected, rather they were selected by MOES for purpose of the study (purposeful sampling is a non-random method of sampling where the researcher selects information-rich cases for in-depth study with pre-selected criteria). In the intervention and control schools all students who participated in the lessons were eligible for the baseline and endline quantitative survey.

This evaluation used a quantitative survey, which was self-administered by youth before and after the delivery of the 5 HLC lessons in biology and PE classes, to measure changes in students' knowledge and attitudes after attending the 5 lessons on the healthy lifestyles topics. Internationally used standard survey instruments were used to design the quantitative survey questionnaire (*Annex 1*).

A process evaluation was also conducted during the implementation phase to better understand the factors that facilitated or impeded quality delivery of the HLC in order to provide recommendations on improving school-based delivery of healthy lifestyles information. Three types of tools were used:

> A process evaluation documents and analyzes the early development and actual implementation of the strategy or program, assessing whether strategies were implemented as planned and whether expected output was actually produced. Detailed information about the program as it was actually implemented is invaluable for determining what worked and what did not.

- Student assessment tool, completed by the student after selected lessons, was used to better understand the key messages learned by students and which part of the lessons they enjoyed best, as well as how they perceived the quality of their teacher's performance during the lesson (*Annex 2*).

- Teacher self-assessment tool, completed by the teacher after delivering selected lessons, was used for teachers to assess their perceived skills, capacity to teach the lessons, and how comfortable they feel with the topics (*Annex 3*).

- Teacher performance assessment tool, completed by BPU observers, was used to assess teachers' skills as well as students' reactions to the lesson (*Annex 4*).

Figure 2 below presents the summary of evaluation methodology used in this study to document the implementation and effectiveness of the HLC pilot intervention in improving knowledge of healthy lifestyles topics among students of secondary schools in Tbilisi and Telavi.

Figure 2: Summary of evaluation methodology

Summary of Evaluation Methodology		
Baseline	**Process Evaluation**	**Endline**
Quantitative Survey	Implementation of Healthy Lifestyles Course in 9th and 10th Grade Biology and PE Classes 1) External assessment of teachers performance 2) Teachers' self-assessment	Quantitative Survey
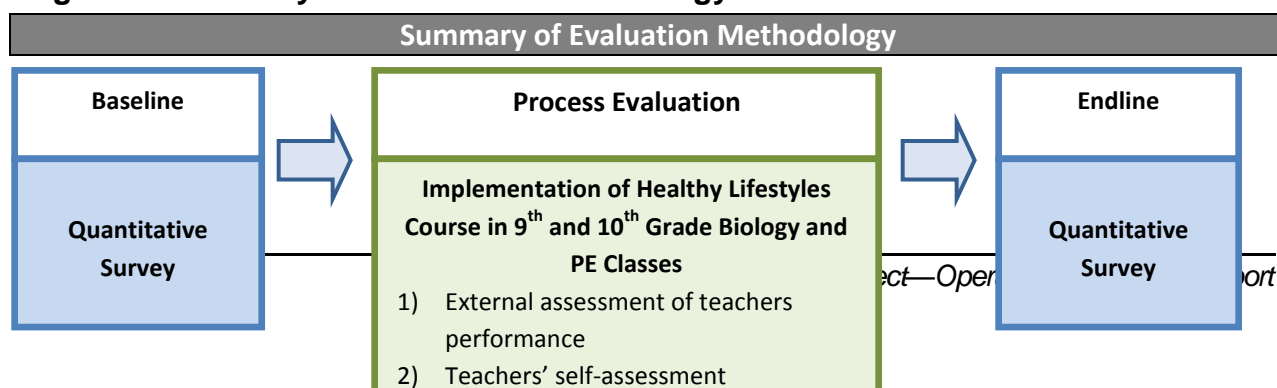
Sample Selection Procedures

Quantitative Survey

To test the difference in student knowledge levels between the baseline and endline groups with statistical significance with 80% power, a minimum sample size of 388 students in each of the baseline and endline groups was determined to be necessary. Sample size calculations were based on an 80% probability that we would detect a difference of 10 percentage points in the proportion of students who correctly answered a question (e.g., 5% of students correctly answered the baseline and 15% of students correctly answered the follow-up question). This sample size was calculated assuming a 95% significance level (i.e., the probability that we detect a difference in the two groups when there is in fact no difference is only 5%).

Considering the GHPP scope and budget, the project planned to train approximately 40 teachers of physical fitness and biology from 20 selected pilot schools (14 schools purposefully selected by MOES in Tbilisi and 6 in Telavi; 2 teachers from each of the 20 selected schools). The trained teachers were supposed to pilot HLC lessons in 2 randomly selected pilot classes (one 9th grade class and one 10th grade class), with about 20 students per class. In each class, 10 students (5 boys and 5 girls) had to be selected randomly to take part in the survey. Thus, in total 400 students would participate in the baseline and follow-up survey in the pilot schools (20 schools X 2 classes X 10 young people per class = 400 young people).

Considering the budgetary limitations of the project, it was planned to randomly select 10 control schools (7 in Tbilisi and 3 in Telavi), i.e., 200 students would participate in the baseline and follow-up survey in the control schools (10 schools X 2 classes X 10 young people per class = 200 young people).

Process Evaluation

For the process evaluation, BPU and GHPP staff sought to assess each individual lesson (i.e., unique lesson) in the healthy lifestyles course at least once (see Table 1 for unique lessons). To accomplish this, a calendar was created with the dates for which each teacher in all pilot schools would be delivering each lesson. The unique lessons for assessment were purposely selected based on the schedule of lessons and availability of the assessment team so a broad representation of schools and teachers were assessed.

Participant Recruitment Procedures

Prior to collecting the quantitative survey data and process evaluation data, all students from the intervention and control classes were asked to obtain at least one parent's written consent. Students were also asked to sign an informed consent form. All students who provided parental

and their own consent completed the survey. Moreover, the sample only included those students who were present in class during the surveyor's visit; there was no repeated visit made to recruit those who were absent from classes for various reasons.

Ethical Issues

The operations research methodology for the Healthy Lifestyles Course Evaluation was approved by Research Triangle Institute's (RTI) Institutional Review Board (IRB) (i.e., human research ethical review committee). As per the approved methodology, all information collected among students was anonymous. Questionnaires, monitoring visits notes, and any other information collected during the evaluation was stored in a secure location at the GHPP office in Tbilisi. A database was set-up to collect and store questionnaire data on a password-protected desktop computer at the GHPP Tbilisi office. All data related to the pilot will be destroyed one year after the pilot is completed.

The major change from the approved methodology was changing the sampling design from a random sample of students per class to conducting a census of all students who were present in selected classes of the pilot and control schools. This was at the request of MOES and local school administrations and was approved by RTI IRB.

Data Entry and Statistical Analysis

Quantitative Survey

Data were entered into Microsoft Office Access 2007 and then transferred into SPSS software (version 17.0). Primary analysis was descriptive (i.e., deriving proportions and mean values from both baseline and follow-up data). This was followed by more comprehensive analysis consisting of difference in differences (DID) tests to determine the independent effect of the pilot intervention on student knowledge as measured on the questionnaire overall, and within each of the five topics covered by the questionnaire: tobacco use, alcohol use, drug use, early marriage and pregnancy, and STIs and HIV/AIDS. The DID tests were conducted using the Reg Procedure of SAS software (version 9.2).

Process Evaluation

Process evaluation data, mostly descriptive, were analyzed by looking at the percentages of responses per Likert scale score and grouping open-ended questions by theme in order to deduct conclusions and recommendations for the improvement of the HLC.

VII. Results

Quantitative Survey Results

During the HLC pilot implementation, GHPP staff decided to include all students (i.e., a census of the whole class) who submitted written consent forms in the survey. This change was strongly supported by school principals and teachers. Hence, all students submitting signed consent forms, including their parent's signature, were selected to take part in the survey.

Accordingly, 635 students completed the survey questionnaires in the pilot schools at baseline; the corresponding figure in the control schools was 195. In total, 830 students participated in the baseline survey. During the follow-up data collection process, 689 students completed the survey questionnaires in the pilot schools and 242 in the control schools. In total 931 students participated in the follow-up survey (*Table 2*).

Table 2: Sample size of students

Type of survey	Baseline		Follow-up	
Type of school	Pilot	Control	Pilot	Control
Number of students	635	195	689	242
Total	**830**		**931**	

Detailed results (frequencies) of quantitative survey data can be seen in tables in *Annex 5*.

Demographic Characteristics

The gender distribution of students and distribution across 9th and 10th grades were almost the same for the baseline and endline surveys. Among all respondents who participated in the baseline survey, 45.4% were males and 54.6% were females, while for the endline survey 46.1% were males and 53.9% were female (*Table 3*). There were no statistically significant differences in the sex and grade distribution of the respondents.

Table 3: Sex and grade distribution of survey respondents

Characteristics	Baseline		Endline	
	Pilot (N =635)	Control (N =195)	Pilot (689)	Control (242)
Sex				
Male	46.1% (293)	43.1% (84)	46.7% (322)	44.2% (107)
Female	53.9% (342)	56.9% (111)	53.3% (367)	55.8% (135)
Grade				
9th	52.1% (331)	44.6% (87)	49.8% (343)	50.4% (122)
10th	47.9% (304)	55.4% (108)	50.2% (346)	49.6% (120)

Overall Change

DID tests were used to determine the independent effect of the pilot intervention on student knowledge. For each questionnaire, we calculated the total number of correct answers out of 101 possible correct answers.

Figure 3 below gives the average number of correct answers given by students on the baseline and endline surveys, in the pilot and control schools.

Figure 3: Average Number of Correct Answers
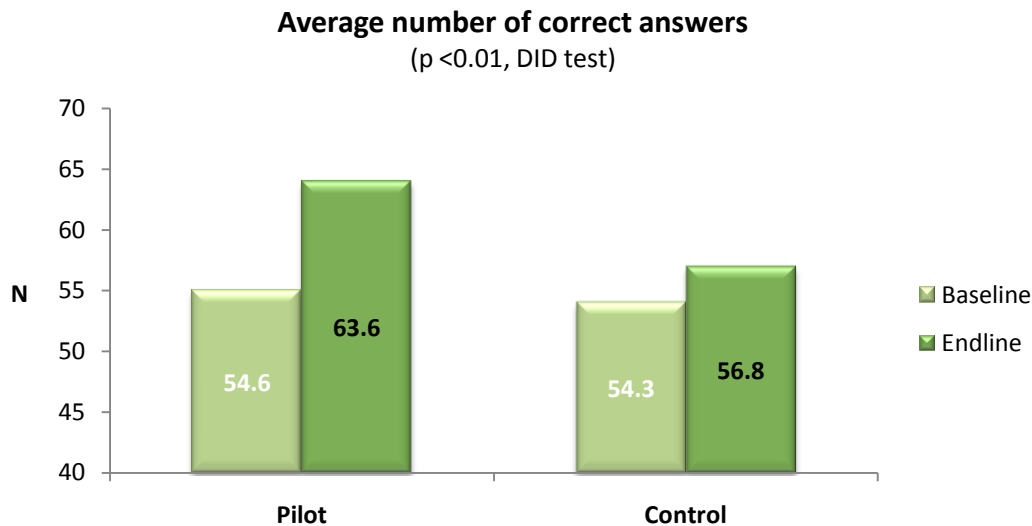
The DID estimate was calculated using the following regression model:

Model 1: $Y = \beta_0 + \beta_1 T + \beta_2 P + \beta_3 (T \times P) + \varepsilon$ [18]

where Y is the number of correct answers, T is a 0-1 indicator for time (baseline=0, endline=1), P is a 0-1 indicator for the school type (control=0, pilot=1), $T \, x \, P$ is the interaction term between time and school type, and ε is the error term. The coefficient β_3 represents the difference between the pilot and control schools in the differences of the average number of correct answers to the baseline and endline surveys. In this case the estimate is $(63.6 - 54.6) - (56.8 - 54.3) = 6.5$. This estimate is significantly different from 0 at the 0.01 level of significance. ***Therefore, we can conclude that students who attended the pilot schools answered on average 6.5 more questions correctly on the endline survey than we would expect based on the performance of students at the control schools, a relative difference of 11 percent.***

Possible effects of student gender and grade were controlled for by adjusting the model as follows:

Model 2: $Y = \beta_0 + \beta_1 T + \beta_2 P + \beta_3 (T \times P) + \beta_4 S + \beta_5 G + \varepsilon$

where S is a 0-1 indicator for whether the student is male and G is a 0-1 indicator for whether the student is in the 10th grade. Taking into account gender and grade, the DID estimate was statistically significant at the 0.01 level of significance, with a value of 6. In other words, it turns out that controlling for gender and grade does not mitigate the treatment effect. A male student is expected to give approximately 3 fewer correct answers than a female student, and a student in the 10th grade is expected to answer approximately 2 more questions correctly than a student in the 9th grade.

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[18] Because there was no linkage between the baseline and endline questionnaire for each student, the covariance between the time and school type variables could not be calculated, and was assumed to be zero. This resulted in a more conservative estimate of the variance of the DID estimate.

Analysis by Topic

To determine if the improvement in student performance was isolated to a particular topic, the above analysis was repeated by replacing the dependent variable, Y, with the number of correct answers given within each of the five topics in the questionnaire: tobacco use, alcohol use, drug use, early marriage and pregnancy, and STI/HIV. ***Table 4*** below presents the average number of correct answers given within each topic, by baseline and endline, and by pilot and control schools. The total number of possible correct answers is given in parentheses next to the name of the corresponding topic.

Table 4: Average number of correct answers by questionnaire topic

Questionnaire Topic	Baseline		Endline		Difference in Differences
	Pilot	Control	Pilot	Control	
Tobacco Use (11 possible correct answers)	7.7	8.0	8.8	8.1	0.9
Alcohol Use (18 possible correct answers)	9.7	9.8	10.9	9.9	1.1
Drug Use (18 possible correct answers)	10.2	10.0	11.8	10.3	1.3
Early Marriage and Pregnancy (18 possible correct answers)	10.5	10.5	12.6	11.5	1.1
STI/HIV (36 possible correct answers)	16.5	15.9	19.4	17.0	1.9

Using the same DID approach described above, the estimate for the STI/HIV section of the questionnaire was approximately 2, while the estimates for tobacco use, alcohol use, drug use, and early marriage and pregnancy sections were approximately 1. All results are statistically significant, implying that students at the pilot schools gave two more correct answers to the STI/HIV section and one more correct answer to each of the tobacco use, alcohol use, drug use, and early marriage and pregnancy sections of the endline survey than expected based on the performance of the students at the control schools. This suggests that the increase in student knowledge due to the HLC was not concentrated in one particular topic, but spread evenly throughout the questionnaire.

Controlling for gender and grade did not change the magnitude and significance of the treatment (DID) for all topics. Furthermore, for most topics, the effects of gender and grade were themselves statistically significant, with female students and students in the 10th grade generally answering more questions correctly. However, this grade effect was not seen in the tobacco use section. Similarly, the gender effect was not statistically significant for the STI/HIV topic.

Process Evaluation Results

Overall 148 lessons were conducted by PE teachers (107 in Tbilisi and 41 in Telavi) and 210 lessons were conducted by biology teachers (140 in Tbilisi and 70 in Telavi; see Table 1). In total, 27 lessons were assessed from 19 out of 21 schools (***Table 5***). For each of the lessons

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chosen, all three assessment tools were completed (i.e., teacher performance assessment tool, student assessment tool, and teacher self-assessment tool).

Table 5: Number of lessons assessed during process evaluation

	All Lessons	PE lessons	Biology lessons
Tbilisi	21[19]	10	11
Telavi	6	4[20]	2[21]
Total	27	14	13

Detailed results (frequencies) of analysis of process evaluation data can be seen in tables in *Annex 6*.

Student Assessment

The student assessment was used to better understand the key messages learned by students and which part of the lessons they enjoyed best, as well as how they perceived the quality of their teachers' performance during the lesson.

Summary:

- Students clearly are learning new and correct information from these classes.
- While the majority of students did not recommend changes to the lessons, students clearly enjoy the interactive components of the classes, especially the activities, and recognize this is the best teaching tool.
- The tobacco lesson could use improved teaching methods and strategies to make students feel more comfortable and ask questions. The negative rating on this lesson could be due to the fact that this was the first lesson taught by teachers and as the HLC continued, teachers gained confidence and comfort with the lessons and teaching.
- Student engagement was lowest during the gender and sex session.

Student Perception of Lesson Quality and Satisfaction with Teaching Style

Students assessed the quality of the lessons that were delivered by teachers, and more than 90% ranked the STIs and early marriage/pregnancy lesson by biology teachers to be "very good" (*Figure 4*). For PE teachers, the only lesson that received a high quality evaluation was the HIV lesson (*Figure 5*). Student assessments indicated that both biology and PE teachers could improve the quality of their tobacco lessons.

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[19] All 20 unique lessons were assessed in Tbilisi, plus one lesson conducted by a biology teacher on "Dangers of Marijuana Use" using a PowerPoint presentation.
[20] The first 3 lessons (drug, tobacco, and alcohol use) for 9th grade students and one lesson on drug and alcohol consumption for 10th grade students were assessed.
[21] 2 lessons: tobacco use and alcohol consumption evaluated for 10th grade students

Figure 4: Quality of lessons (Biology lessons)

Proportions of students answers

Legend: Bad, Partly good, Good, Very good

Values shown: Tobacco (20): 60.0; Alcohol (66): 77.3; Drug use (116): 52.6; HIV (62): 58.1; STIs (21): 90.5; Assertion; Early age pregnancy (21): 90.5; Gender and sex
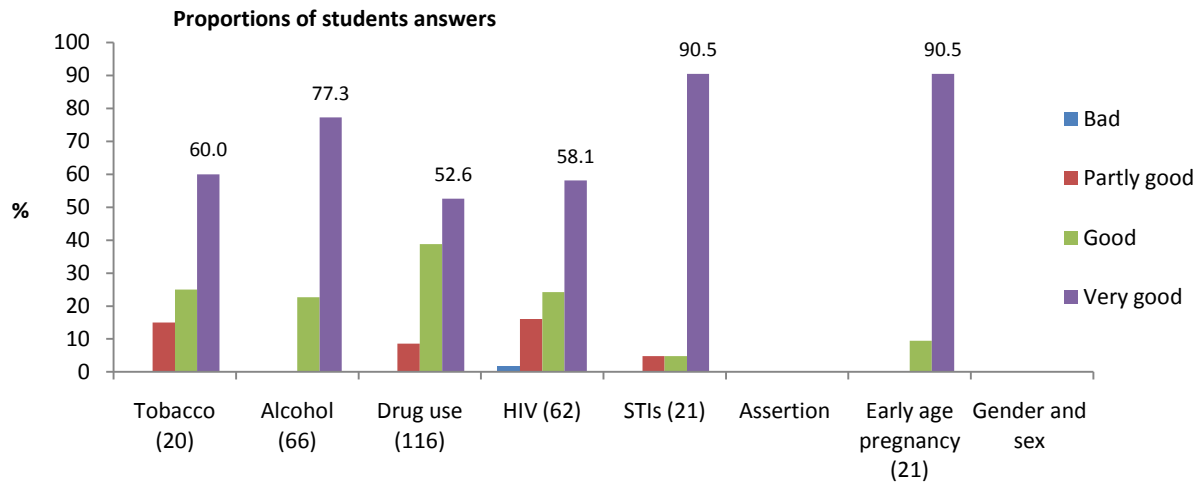
Figure 5: Quality of lessons (PE lessons)

Proportions of students answers

Legend: Bad, Partly good, Good, Very good

Values shown: Tobacco (39): 53.8; Alcohol (16): 37.5; Drug use (125): 38.4; HIV (27): 85.2; STIs; Assertion (20): 40.0; Early age pregnancy; Gender and sex (32): 28.1
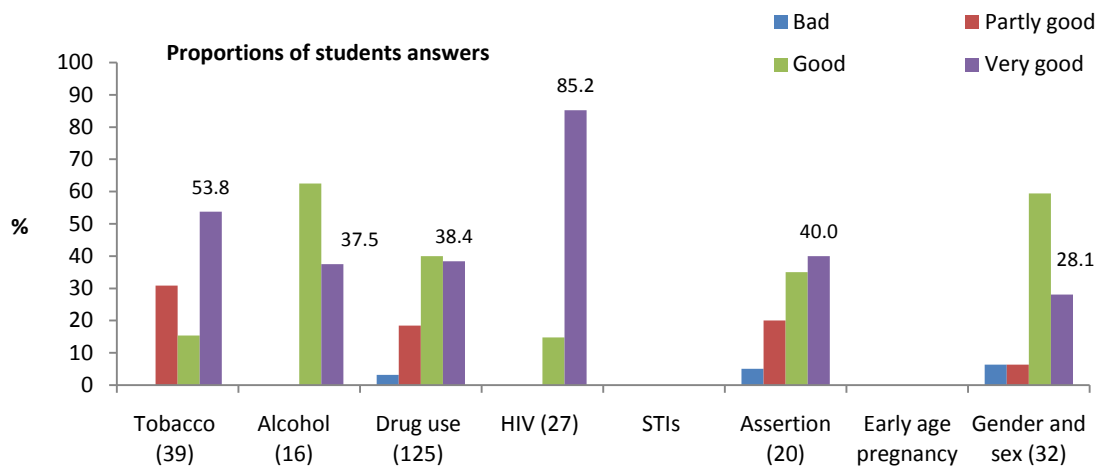
The majority of students were satisfied with 4 of 6 topics taught by the biology teachers (alcohol, HIV, STI, and early pregnancy; see *Figure 6*), whereas PE teachers received a very high rating of satisfaction only with the HIV class (*Figure 7*).

Figure 6: Satisfaction with the lesson (Biology lessons)

Proportions of students answers

Legend: Dissatisfied, Partly satisfied, Satisfied, Very satisfied

Categories: Tobacco (20), Alcohol (66), Drug use (116), HIV (62), STIs (21), Assertion, Early age pregnancy (21), Gender and sex

Values shown: 45.0, 69.7, 48.3, 58.1, 85.7, 76.2
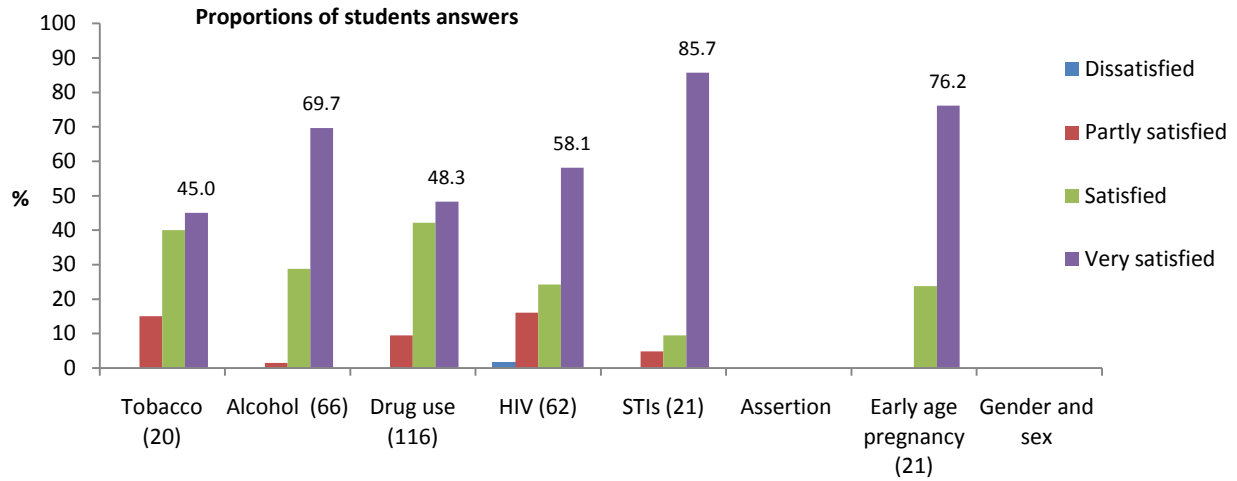
Figure 7: Satisfaction with the lesson (PE lessons)

Proportions of students answers

Legend: Dissatisfied, Partly satisfied, Satisfied, Very satisfied

Categories: Tobacco (38), Alcohol (16), Drug use (124), HIV (27), STIs, Assertion (20), Early age pregnancy, Gender and sex (32)

Values shown: 44.7, 31.3, 38.7, 88.9, 45.0, 12.5
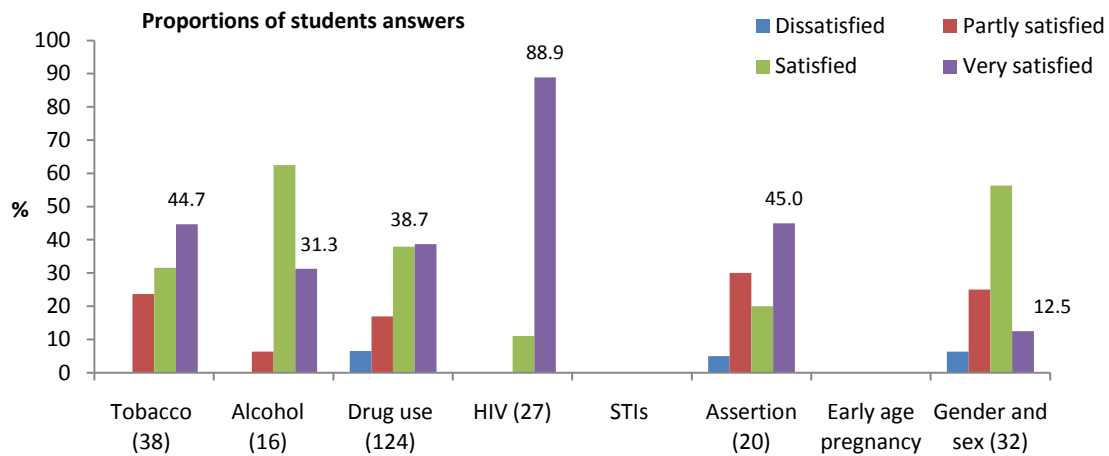
Student Comfort with Asking Questions

When asked how comfortable students felt with the themes of the lessons, overall, students felt more comfortable asking questions during the biology lessons compared with the PE lessons. Furthermore, students felt the most comfortable asking questions during the drug and alcohol use lessons taught by the biology teachers (*Figure 8*) and during the HIV lesson taught by the PE teacher (*Figure 9*).

Figure 8: Students' comfort with asking questions (Biology lessons)
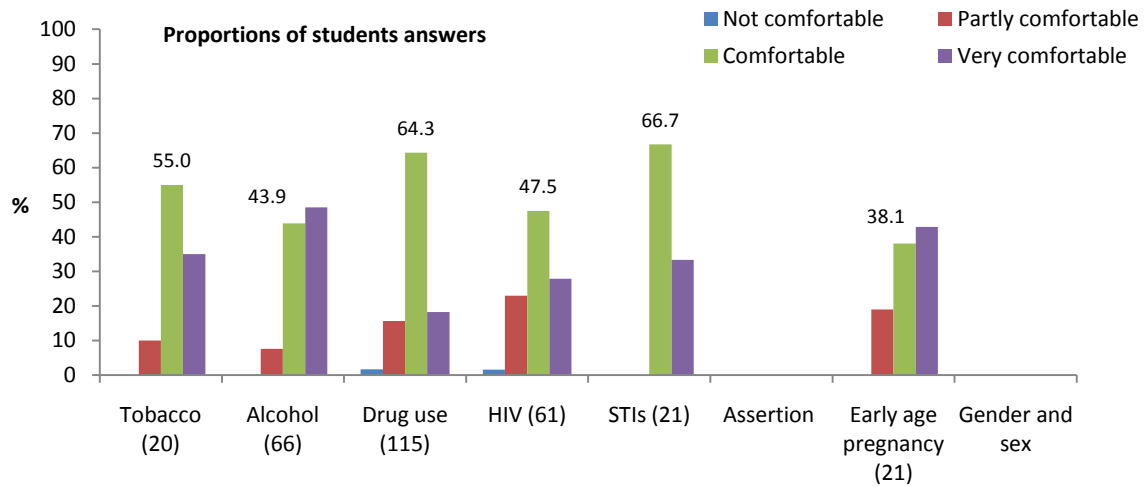
Figure 9: Students' comfort with asking questions (PE lessons)
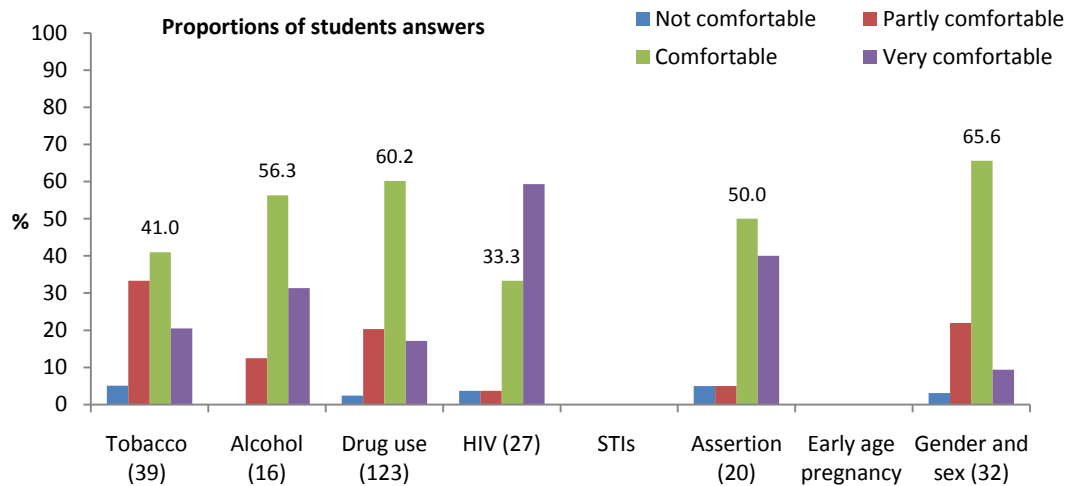
Student Engagement and Participation

Overall, students felt quite engaged in the lessons, with the highest rating going to the STIs lesson delivered by biology teachers (***Figure 10***), and with the lowest rating going to the PE teacher who delivered the gender and sex lesson (***Figure 11***).

Figure 10: How fun was the lesson activity? (Biology lessons)

Proportions of students answers

Legend: ■ Boring ■ Appropriate ■ Entertaining

Data labels shown: Tobacco (20): 65.0; Alcohol (66): 72.7; Drug use (116): 40.5; HIV (60): 45.0; STIs (21): 81.0; Assertion; Early age pregnancy (20): 47.6; Gender and sex
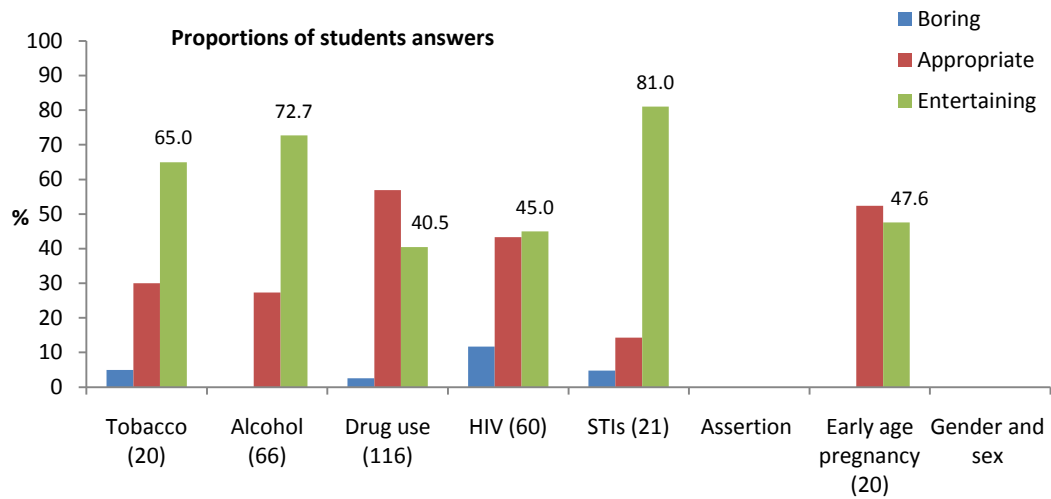
Figure 11: How fun was the lesson activity? (PE lessons)

Proportions of students answers

Legend: ■ Boring ■ Appropriate ■ Entertaining

Data labels shown: Tobacco (39): 51.3; Alcohol (15): 66.7; Drug use (124): 46.8; HIV (27): 55.6; STIs; Assertion (20): 65.0; Early age pregnancy; Gender and sex (32): 25.0
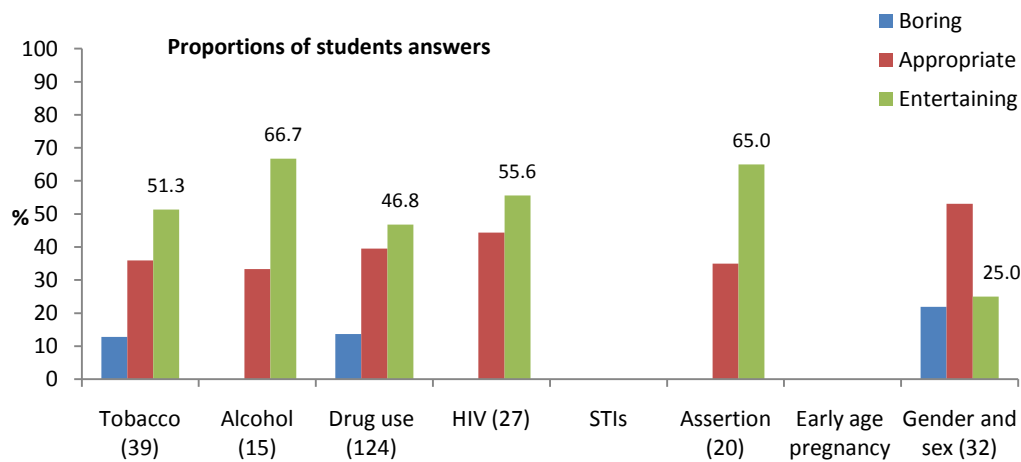
Most importantly, students indicated a high level of interest in healthy lifestyles topics that are relevant to the lives of adolescents during both biology (*Figure 12*) and PE lessons (*Figure 13*).

Figure 12: Student interest in gaining more information (Biology lessons)
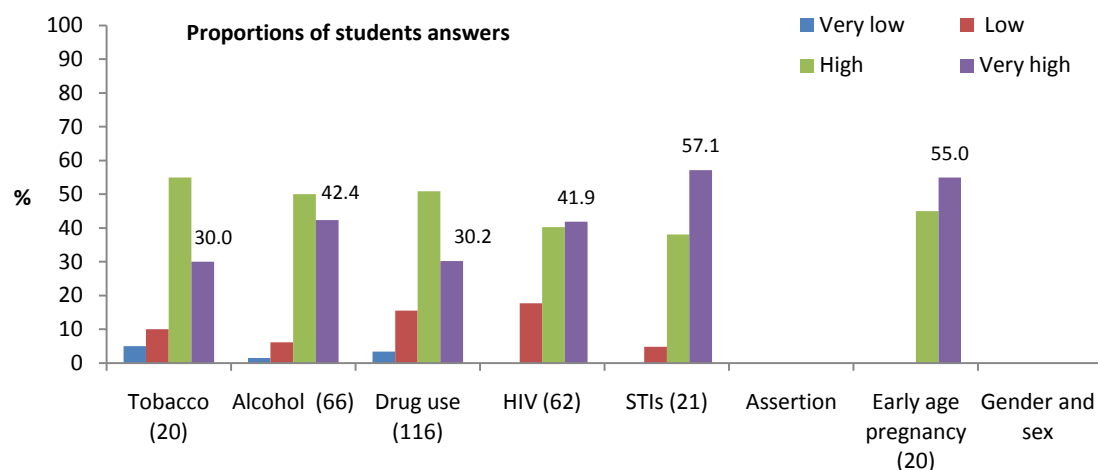
Figure 13: Student interest in gaining more information (PE lessons)
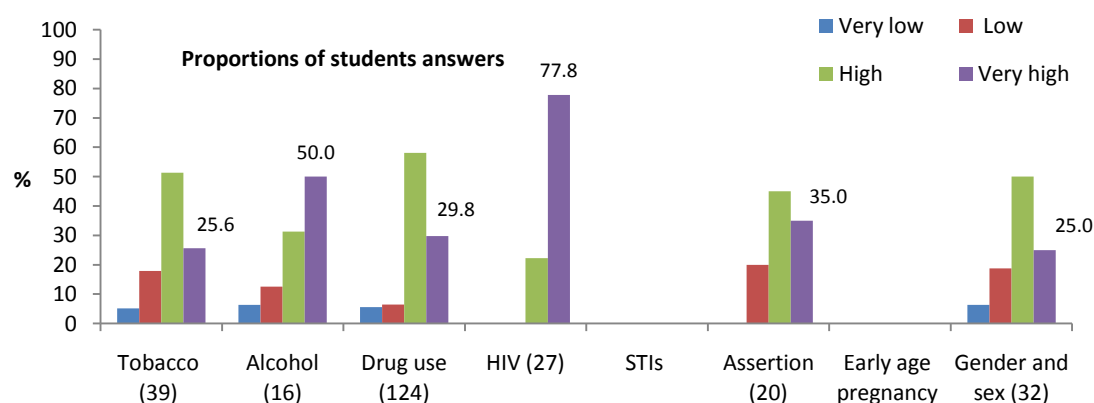
Key Messages Obtained and Students' Advice on How to Improve the HLC

Open-ended questions were included to assess if students were receiving the correct key messages from each lesson and to gain their insights into what was the best part of the lesson and what should be changed. Overall, students seemed to be learning more correct information from the biology classes. But messages of fear (e.g., alcohol, tobacco, and drugs can kill you) seem to stick out as key messages for students. Such fear-based messages have not been proven to change behavior. Of note was a high response rate of key messages learned from the Assertion (life skills) session. Students would like the lessons to be more interactive and allow more time for questions/answers and discussions. The interactive activities, videos, questions and answers, clarification of myths and facts were clearly the most enjoyable parts of the lessons for students. Selected responses from open-ended questions are presented in *Table 6* below.

Table 6: Selected responses from open-ended questions

Question	Biology Classes	PE Classes
Name two new ideas you learned today	*Positive comments* • Tobacco can affect cardiovascular and breathing system • Cigarettes are addicting • Peer pressure can lead young people to smoke • Early pregnancy can negatively affect one's economic opportunities • Marijuana's negative impact on brain cells • Learned about compassion for people with HIV/AIDs • Learned correct transmission routes for HIV and that friends with HIV are not dangerous • How to protect from STIs *Message to be strengthened* • Tobacco and alcohol are deadly drugs • Infected people can create more problems for those who are infected and for their immediate families and public in general (stigma) • Students learned that STIs can be transmitted by sharing personal hygiene items (as opposed to stressing sexual transmission)	*Positive Comments* • Diseases caused by heavy smoking • That alcohol is a drug and can cause dependence and addition • To analyze cultural traditions as a factor protecting youth from development of dependence on alcohol • Difference between HIV and AIDS • Gender equality and inequalities between men and women • Marijuana is addictive • Abusing prescription medications can also be addictive and harmful • Responsible for their own health • How to resist peer pressure • Not be submissive • Stand up for their own beliefs and opinions *Message to be strengthened* • Some students did not learn new information on tobacco or alcohol • That alcohol can kill
What would you change about the lessons?	• Ensure entire participation of the students • More organized way to conduct discussions	• More interactive with exercises • More in-depth discussion of each of the topics • More visual information on the gender theme • Do not use PE lessons for HLC, just biology lessons
What worked best?	• Exercise on how drug abuse can evolve into dependency • Exercise of a city that has smoking and non-smoking districts and provided characteristics and features for each of the district • Students liked video that was on negative aspects of alcohol • Question and answer session • The materials on HIV/AIDS • The STI work exercise and question and answers	• Facts and myths formats of HIV infection lesson • The discussion on alcohol

Teacher Self-Assessment

The teacher self-assessment was used by teachers to assess their capacity to teach the lessons, and their satisfaction with the job they did on lesson delivery, as well as to gain their suggestions for improving the lesson plans. The results for this section are based on only 27 teachers in total who assessed their own performance for the 20 unique lessons. But there are some insights that can be gained for improved HLC delivery and teacher trainings.

According to *Figure 14* and *Figure 15*, biology and PE teachers rated their capacity of conducting the lessons much lower than students' perception of the delivery of the lessons. None of the biology or PE teachers thought they did a "very good job" in delivering the lessons, and a majority of teachers thought their performance was only "partly good" (a 2 on a 4-point Likert scale). There were similarly low ratings on their satisfaction with how they conducted the lessons.

Figure 14: Teachers' self-assessment of their capacity to teach the HLC lessons (Biology lessons)

Proportions of teachers answers

Legend: Bad, Partly good, Good, Very good

Categories: Tobacco (1), Alcohol (3), Drug use (4), HIV (2), STIs (1), Assertion, Early age pregnancy (1), Gender and sex

Data labels shown: 0.0, 33.3, 75.0, 0.0
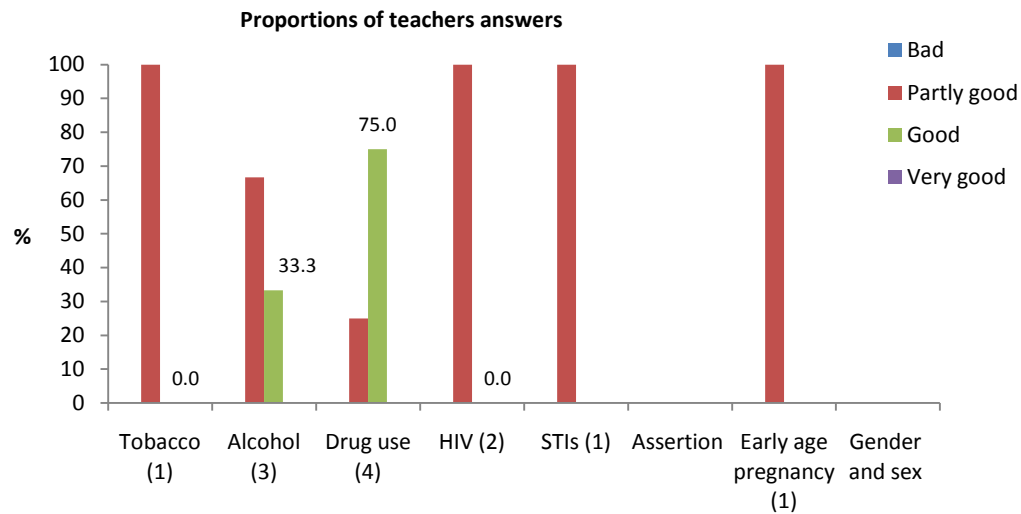
Figure 15: Teachers' self-assessment of their capacity to teach the HLC lessons (PE lessons)

Proportions of teachers answers

Legend: Bad, Partly good, Good, Very good

Categories: Tobacco (2), Alcohol (2), Drug use (6), HIV (2), STIs, Assertion (1), Early age pregnancy, Gender and sex (1)

Data labels shown: 50.0, 50.0, 66.7, 50.0, 100.0, 100.0
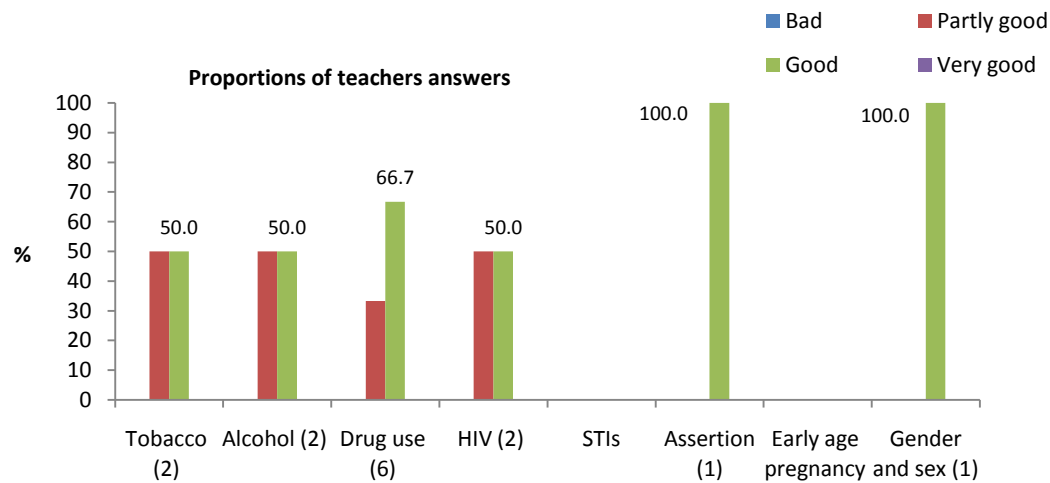
Teachers' satisfaction with how they delivered the lessons was lower among biology teachers (*Figure 16)* than among PE teachers (*Figure 17*), which was opposite students' satisfaction with lessons: higher for biology lessons compared to PE lessons.

Figure 16: Teachers' satisfaction with their lesson delivery (Biology lessons)
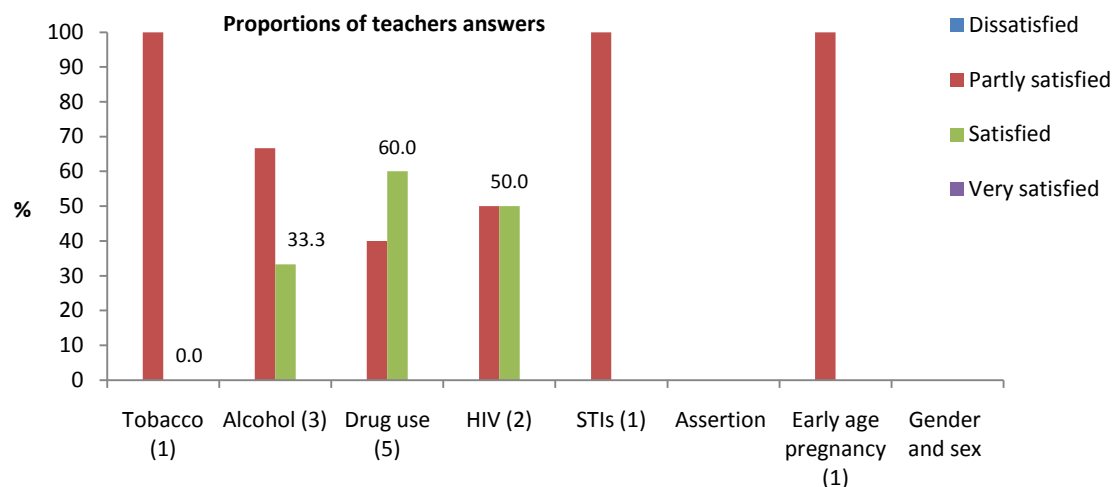
Figure 17: Teachers' satisfaction with their lesson delivery (PE lessons)
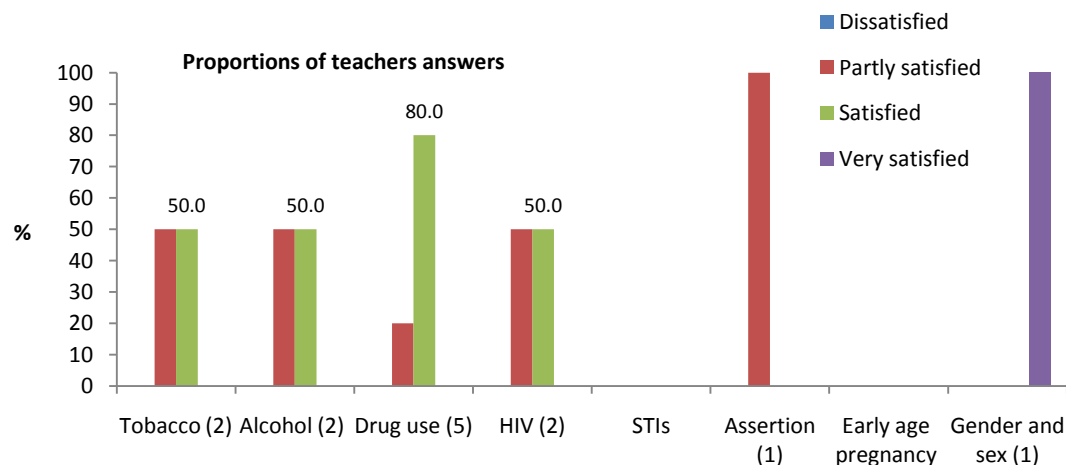
Teachers rated the HLC teachers guide and gave suggestions on each lesson on how to enhance the HLC. Overall, biology teachers were less positive about the lessons plans as compared with sport teachers. For biology teachers, the least favorite lesson plans were for STIs and tobacco (Figure 18), whereas for PE teachers the least favorite lesson was tobacco (Figure 19). Teachers also commented that the alcohol session could be improved and really enjoyed the "myths and realities" section of the HIV lessons. Overall, teachers felt there was not enough time in the lessons to cover all the information, recognized that students enjoyed the discussion section the most and are still adapting to the teaching style of the integrative exercises.

Figure 18: Teachers' opinions of the HLC lesson plans and teachers guide (Biology lessons)
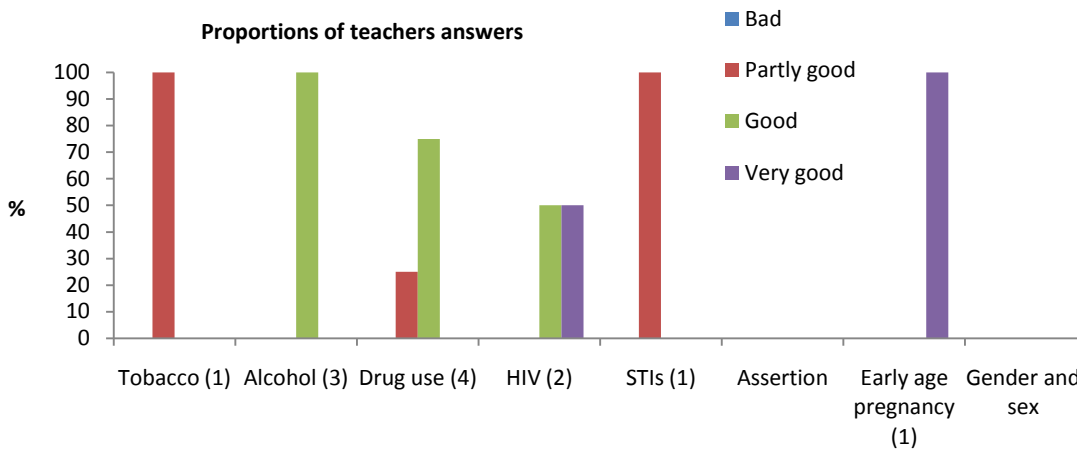
Figure 19: Teachers' opinions of the HLC lesson plans and teachers guide (PE lessons)
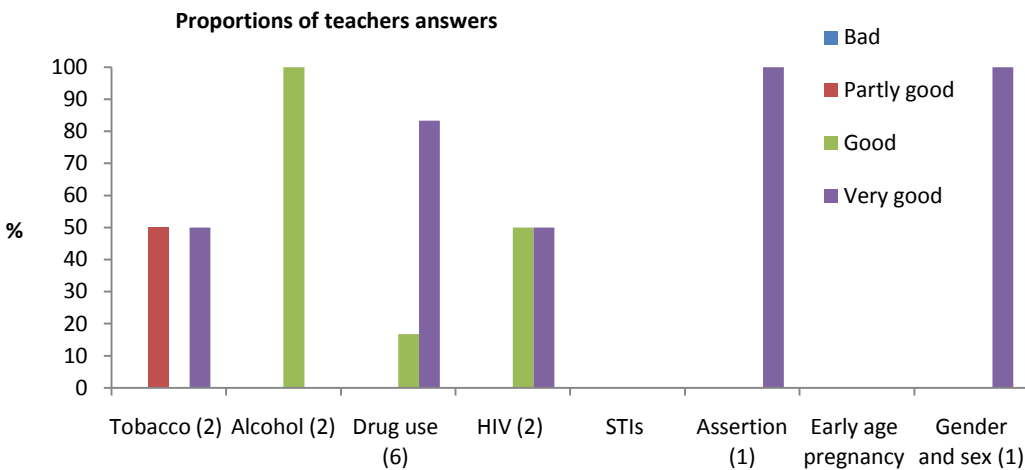
Observation of Teacher Performance

Every unique lesson observed at least once by BPU was used to assess teachers' skills as well as students' reactions to the lesson.

Student Engagement and Participation

Biology teachers were rated as being slightly better at conducting group discussions than PE teachers. Students were most interested in the activity and discussion component of the lessons as compared to the theoretical components. In some schools, PE teachers delivered their sessions in the gym, which was an unfavorable environment in terms of their ability to engage students in discussions because of the suboptimal acoustics. This situation made it very difficult to facilitate a discussion and share student ideas and while providing feedback and maintaining an orderly class. In cases where PE teachers were able to deliver their lessons in a classroom, the PE

teachers were better able to conduct discussions in accordance with lesson plans. During biology lessons, one teacher who possessed more interactive teaching skills had a higher degree of student interaction and an overall successful lesson. Nonetheless, some teachers neglected to answer student questions and acknowledge different opinions. Even in such cases where teachers were less comfortable with interactive engagement, students were still ready and open to engage in discussions and ask questions. Overall, the interest and involvement in discussions by all students was quite high, despite the fact that teachers were directing their questions primarily to more active and interested students' questions. Still, students with "bad behavior" were also expressing interest in the activities and expressing their opinions. During biology lessons, boys' and girls' rate of involvement was equal; during the PE classes, boys' participation rate was higher at 3.5 compared to girls' average rating of 2.7 point (on a 4-point Likert scale).

Quality of teachers' facilitation skills

Despite the fact that teachers were encouraged to use an interactive teaching format for the lessons, few of them used interactive approach modes (especially due to the fact that they did not feel quite confident in this skill). PE teachers were experiencing greater discomfort—the format for conducting classes and the theme were unusual for them. Some of the PE teachers expressed to the observers that they did not feel comfortable discussing themes such as STIs and safe sex. On a 4-point Likert scale, with 4 indicating the highest comfort rate and 1 the lowest, biology teachers seemed to be more comfortable than PE teachers, with an average comfort ranking of 3.4 compared to 2.6. During the lessons on gender and assertion, the PE teachers had difficulties applying training skills or conducting discussions. At the late stage of HLC implementation, teachers were provided with presentation materials (i.e., PowerPoint presentations) to facilitate the delivery of the HLC in the classroom, but these ultimately were not utilized to their full extent as only 4 teachers were able to use the presentations due to lack of time.

How would you evaluate the general reaction of students on the lessons that were delivered to them? Most of the teachers were ready and prepared for conducting lessons, but only a few teachers were very well prepared, with visual materials, exercises for students, and cards for educational games. Five teachers (2 biology and 3 PE) had difficulties answering students' questions and resorted to getting help from the observer. It was obvious that the teachers for both lessons did not feel comfortable with the PowerPoint presentation format and computer. However, based on student reactions, it was clear that PowerPoint slides contributed to their involvement and increased interest in the lesson.

VIII. Recommendations

Recommendations for MOES

Integration of HLC in the formal secondary school setting

- The HLC resulted in an 11% significant increase in the number of correct answers by students who received the information compared to those who did not. Clearly, the HLC has a positive effect on students' learning and teachers' ability to deliver information that can protect young people's health and wellbeing. Based on the thorough and collaborative process to consolidate the many HLCs in Georgia and then testing the use of this consolidated curriculum within the formal school system with success, it is recommended that MOES adopt this successful version for use in the formal school setting by including it in the upcoming biology textbook revision process.

- If the HLC is adopted for inclusion in the national biology curriculum, it is recommended that technical assistance be provided to MOES for the first few years to ensure that teachers are trained systematically in the specialized skills needed to provide sensitive information to students in a fun and interactive way that improves their knowledge but also their life skills.

- The PE teachers were not as successful in delivering HLC. However, it was recognized that reinforcement of information in a second class is key to behavior change and information retention. While the physical environment of the gymnasium may not be conducive to the teaching of HLC, many students still felt that some of the PE teachers were successful in delivering the HLC lesson. Two tangible options would be:
  1. To eliminate HLC from the PE classes altogether, or
  2. To redesign the HLC curriculum for the PE teachers so their lessons last a full 45 minutes and focus on one interactive activity integrated into a PE format. There are many internationally recognized and tested HIV curricula which use PE as the platform for teaching about healthy lifestyles that could be adapted for the Georgian context.

Recommendations for HLC developers

Small but powerful changes can be made to the HLC based on the process evaluation evidence

- Move away from "fear tactics" stressing that drugs and alcohol are deadly. These tactics have proven not to work in terms of behavior change.

- Integrate more "Myths and Realities" sections to guide discussion for each session. The students really enjoyed this format for guiding the discussions.

- Currently, there is only one life-skills building lesson (unique lesson #20: PE class, 10th grade, lesson 5 on assertion). Students seemed to gain a considerable amount of new information in this lesson. International evidence also highlights the importance of combining information delivery with actual life skills that will help young people utilize the information and make healthier decisions. Life-skills building helps students translate information into behavior change. Consider adding a 6th lesson onto the HLC focusing on a skill-building session.

- Enhance the teachers' resource materials so they have at least two interactive activities to choose from for each HLC lesson. Provide the factual information in the textbooks but develop a resource packet of activities that all teachers can use to teach the information.
- Specific content that should be reviewed before final inclusion in the formal school textbooks to ensure the key messages are correct: review STI lesson (biology, 10th grade) to ensure the focus is on sexual transmission and unprotected sex, not only on sharing of personal hygiene materials; review gender and sex activity information to make it more engaging and fun; have alternatives for when flip charts and markers are not available in the classroom.

Recommendations for Improved Teacher Training

- Overall, very few teachers applied interactive methodologies during HLC lessons, due to the fact that they did not feel quite confident in their skills, but students unanimously stated this was their favorite part of the lessons. Ensure that the teacher training has a strong focus on the interactive activities and student engagement rather than just factual information on healthy lifestyles. Teachers should actively participate in the activities expected of the students during the HLC as a way to become more comfortable with the interactive format and adapt this participatory learning style.

Annex 1: Survey Questionnaire

School Number	

A. Demographic information

a.1 **Sex** (circle)

Male	1
Female	2

a.2 **age**

a.3 **What grade are you in? (circle)**

9th grade	1
10th grade	2

B. Tobacco

b.1 **In your opinion, will it be difficult to quit smoking after you start it?** (Please, circle <u>only one correct</u> answer)

1. Definitely won't be difficult
2. Probably won't be difficult
3. Probably will be difficult
4. Definitely will be difficult

b.2 **In your opinion, is smoking tobacco harmful for your health?** (Please, circle only one correct answer)

1. Definitely won't be harmful
2. Probably won't be harmful
3. Probably will be harmful
4. Definitely will be harmful

b.3 **In your opinion what is passive smoking?**

1. Smoke less than 5 cigarettes a day
2. Smoking at celebrations

3. Smoke only when nervous
4. Breathing other people's smoke
5. Other (please indicate) _____
6. Don't know

b.4   Specify your opinion (for each of the statement circle appropriate answer)

	Statements	True	False	Don't know
1.	It is safe to smoke tobacco during 1-2 years if you quit it afterwards	1	2	88
2.	Passive smoking is harmful for your health	1	2	88
3.	Smoking is harmful during pregnancy	1	2	88
4.	Smoking is not harmful for fetus	1	2	88
5.	Smoking kills every other smoker and significantly shortens life for the rest of smokers	1	2	88
6.	Women who smoke have increased chances to be infertile and rarely become pregnant compared to non-smokers	1	2	88
7.	It is better to smoke quickly and completely	1	2	88
8.	Tobacco is a dangerous drug	1	2	88

C.   Alcohol

c.1   In your opinion, is excessive and regular alcohol consumption is harmful to human health? (Please circle only one correct answer)

1. Definitely is not harmful
2. Probably is not harmful
3. Probably is harmful
4. Definitely is harmful

c.2   In your opinion, is type of consumed alcohol (wine, beer, vodka) has substantial significance for the development of cirrhosis (a severe decease)? (Please circle only one correct answer)

1. Definitely has not essential meaning
2. Probably has not essential meaning
3. Probably has essential meaning
4. Definitely has essential meaning

c.3   What are factors that alchohol has more affect on individuals compared to others? (Please circle all correct answers)

1. Person's biological characteristics
2. Emotional conduction
3. Alcohol consumption speed

4. Concomitant diseases
5. Having a meal
6. Other (please indicate) _____
7. It has same effect on all individuals
8. Don't know

c.4 **Specify your opinion** (for each of the **statement** circle appropriate answer)

	Statements	True	False	Don't know
1.	Alcohol can be addictive	1	2	88
2.	Early alcohol use greater risk for abuse	1	2	88
3.	Teens become alcohol-dependent easier than adults	1	2	88
4.	Peers don't influence on teenagers' decision to use alcohol or drugs	1	2	88
5.	Majority of youth had tasted alcohol for the first time together with their peers	1	2	88
6.	It is possible to make drunk person sober with a cup of coffee/cold shower	1	2	88
7.	Alcohol increases sexual drive	1	2	88
8.	Wine is a part of Georgian culture, therefore, it is allowed for children to drink wine	1	2	88

D **Drug use**

d.1 **In your opinion, how harmful is for individual's health to use household chemicals e.g. sniffing glue?** (Please circle only one correct answer)

1. Definitely is not harmful
2. Probably is not harmful
3. Probably is harmful
4. Definitely is harmful

d.2 **What do you think, how harmful is to smoke marijuana for your health?**
(Please circle only one correct answer)

1. Definitely is not harmful
2. Probably is not harmful
3. Probably is harmful
4. Definitely is harmful

d.3 **What threats does contain drug injection?** (Please circle all correct answers)

1. High risk of Hep B, C/HIV transmission
2. Liver damage
3. Cardiovascular diseases
4. Brain damage

5. Death from an overdose
6. Other (please indicate) _____
7. Does not contain threat
8. Don't know

d.4 **Specify your opinion** (for each of the __statement__ circle appropriate answer)

	Statements	True	False	Don't know
1.	All drugs cause psychic dependence	1	2	88
2.	Marijuana is not a drug	1	2	88
3.	Marijuana doesn't cause dependence	1	2	88
4.	Withdrawal syndrome is the only sign of addiction	1	2	88
5.	Withdrawal syndrome relief means to have person cured from drug addiction	1	2	88
6.	All drugs are psychoactive substances	1	2	88
7.	All drugs cause physical dependence	1	2	88
8.	Many of IDUs started with Marijuana	1	2	88

E   Early marriage and pregnancy

e.1 **In your opinion, should teens begin sexual life from early ages?** (Please circle only one correct answer)

1. Definitely should not begin
2. Probably should not begin
3. Probably should begin
4. Definitely should begin

e.2 **In your opinion, is pregnancy at an early age more risky?** (Please circle only one correct answer)

1. Definitely is not risky
2. Probably is not risky
3. Probably is risky
4. Definitely is risky

e.3 **What complications can abortion have?** (Please circle all correct answers)

1. Infections
2. Infertility
3. Bleeding
4. Fever
5. Uterine perforation
6. Other (Please indicate) _____
7. No negative affects

8. Don't know

e.4 **Specify your opinion** (for each of the **statement** circle appropriate answer)

	Statements	True	False	Don't know
1.	The beginning of sexual relations - a responsible step for health of both partners	1	2	88
2.	Multiple contacts with women demonstrate masculinity	1	2	88
3.	First menstruation means that a girl is sexually ready to become mother	1	2	88
4.	Having sex means adulthood	1	2	88
5.	A girl can get pregnant even if she has had only one sexual contact	1	2	88
6.	Using condom prevents from pregnancy	1	2	88
7.	Safe sex means use of a condom	1	2	88
8.	Contraception pills don't protect from STIs	1	2	88

F. **STIs and HIV/AIDS**

f.1 **In your opinion, is it possible to get STI only from one sexual intercourse?**
(Please circle only one correct answer)

1. Definitely is not possible
2. Probably is not possible
3. Probably is possible
4. Definitely is possible

f.2 **In your opinion, are all STIs curable?** (Please circle only one correct answer)

1. Definitely are not curable
2. Probably are not curable
3. Probably are curable
4. Definitely are curable

f.3 **In your opinion, is it possible to be re-infected with STIs even if have had effective treatment?** (Please circle only one correct answer)

1. Definitely is not possible
2. Probably is not possible
3. Probably is possible
4. Definitely is possible

f.4 **Which infections are transmitted by sexual contact?** (Please circle all correct answers)

1. HIV/AIDS
2. Gonorrhea
3. Syphilis
4. Hepatitis A
5. Avian Flue
6. Hepatitis C
7. Other (please indicate)

_____

8. Don't know

f.5 **Specify your opinion** (for each of the statement circle appropriate answer)

	Statements	True	False	Don't know
1.	HIV transmission: one may protect oneself from HIV by having one uninfected and reliable partner	1	2	88
2.	HIV transmission: one can reduce HIV risk if properly uses condoms during every sexual contact	1	2	88
3.	HIV transmission: healthy - looking person can have HIV	1	2	88
4.	HIV transmission: One can get HIV as a result of a mosquito bite	1	2	88
5.	HIV transmission: one can get HIV by sharing food with HIV infected person	1	2	88
6.	HIV transmission: HIV cannot be transmitted by kissing	1	2	88
7.	HIV transmission: HIV cannot be transmitted by hand shaking	1	2	88
8.	HIV transmission: HIV can be transmitted by sleeping with HIV infected person in one room	1	2	88

f.6 **How risky are behaviors below for HIV transmission** (for each of the **statement** circle appropriate answer)

	Behavior	No risk	Low risk	High risks	Don't know
1.	Abstinence form sexual contacts	1	2	3	88
2.	Practicing Safe sex	1	2	3	88
3.	Using of public toilets	1	2	3	88
4.	Safe sex with multiple partners	1	2	3	88
5.	Hugging with HIV-positive person	1	2	3	88
6.	Use someone else's razor	1	2	3	88
7.	Needle/syringe sharing	1	2	3	88
8.	Unprotected sex	1	2	3	88

	Behavior	No risk	Low risk	High risks	Don't know
9.	Breastfeeding (by HIV positive mother)	1	2	3	88
10.	Transfusion of HIV infected blood	1	2	3	88
11.	Helping a bleeding person	1	2	3	88
12.	Sharing of household dishes	1	2	3	88
13.	Piercing	1	2	3	88
14.	Tattoo making	1	2	3	88
15.	Birth of child from HIV-positive mother	1	2	3	88
16.	Surgery	1	2	3	88
17.	Blood brotherhood	1	2	3	88

G. Participation in the study

g.1   Did you fill out questionnaire in previous survey?

1. Yes
2. No

g.2   Class attendance in accordance to the subjects (please mark appropriate box):

	I	II	III	IV	V
Biology					
PE					

Annex 2:   Student Assessment Tool

An instrument for monitoring an evaluation of Healthy Lifestyles Curriculum materials and quality of teaching by teachers

Date:	City: □ Tbilisi □ Telavi
School identification number	Grade: □ 9th □ 10th
Student's sex: □ Male □ Female	Student age:
Subject □ Biology □ PE	Teacher's sex: □ Male □ Female

Theme that was discussed during today's class:

□ Topic 1: Tobacco   □ Topic 5: STIs

□ Topic 2: Alcohol   □ Topic 6: Assertion

□ Topic 3: Drugs   □ Topic 7: Early pregnancy

□ Topic 4: HIV   □ Topic 8: Gender and Sex

At the end of lesson:

1. **How would you evaluate the quality of delivered lesson by teacher?**

1	2	3	4
Bad	Partially good	Good	Very good

2. **To what extent are you satisfied with the lesson that was delivered by teacher?**

1	2	3	4
Dissatisfied	Partially Satisfied	Satisfied	Quite Satisfied

3. **How would you evaluate information that you received during today's class?**

1	2	3	4
Bad	Partially good	Good	Very good

4. **Your attitude towards the information that you received during today's class?**

1	2	3	4
Bad	Partially good	Good	Very good

5. **How comfortable were you with today's theme?**

1	2	3	4
Not comfortable	Partially comfortable	Comfortable	Very comfortable

6. **How was the students' involvement in the teaching and learning process:**

1	2	3	4
Bad	Partially good	Good	Very good

7. **Your desire to learn more about the current theme for class is:**

1	2	3	4
Very low	Low	High	Very high

8. **How comfortable did you feel to ask questions on the today's theme?**

1	2	3	4
Not comfortable	Partially comfortable	Comfortable	Very comfortable

9. **How comfortable did the teacher feel during discussion of the today's lesson's theme?**

1	2	3	4
Not comfortable	Partially comfortable	Comfortable	Very comfortable

Improvement of Health Lifestyle curriculum

Name two things that you were able to learn today

10. Activities during the class were:

☐ g Appropriate   ☐ Amusing   ☐

Which part of today's lesson needs to be changed?

Which part of today's lesson was most successful?

Annex 3: Teacher Self-Assessment Tool

Monitoring Instrument for self-evaluation of skills for teaching Healthy Lifestyles Curriculum themes

Lesson:

Date:	City: □ Tbilisi □ Telavi
School identification number:	Grade: □ 9th □ 10th
Number of students: Girls - Boys -	
Subject □ Biology □ PE	Teacher's sex: □ Male □ Female

Theme that was discussed during today's class:

□ Topic 1: Tobacco	□ Topic 5: STIs
□ Topic 2: Alcohol	□ Topic 6: Assertion
□ Topic 3: Drugs	□ Topic 7: Early pregnancy
□ Topic 4: HIV	□ Topic 8: Gender and Sex

At the end of the lesson:

1. **How would you evaluate your capacities for conducting this lesson**

1	2	3	4
Bad	Partially good	Good	Very good

2. **To what extent was it easy for you to conduct today's lesson?**

1	2	3	4
Hard	Partially Hard	Easy	Very easy

3. **How satisfied are you with the lesson that you conducted today?**

1	2	3	4
Dissatisfied	Partially satisfied	Satisfied	Very satisfied

4. **How would you evaluate standard lesson guide (for Biology and PE teachers) in according to which you prepared your lesson plan for today?**

1	2	3	4
Bad	Partially good	Good	Very good

5. **How well do you know the topic of today's lesson plan?**

1	2	3	4
Partially know	Well know	Very well now	Have poor knowledge

6. **How comfortable did you feel during today's discussion?**

1	2	3	4
Not comfortable	Partially comfortable	Comfortable	Very Comfortable

7. **How well did students understand today's topics?**

1	2	3	4
Bad	Partially well	Well	Very well

How was involvement rate?

	1	2	3	4
Girls	Bad	Partially good	Good	Very good

Boys	1	2	3	4
	Bad	Partially good	Good	Very good

Improvement of Healthy Lifestyle Curriculum

In overall, how did today's lesson go?

Lesson activities were:

☐ Very easy for students

☐ Appropriate

☐ Very hard for students

Which part of today's lesson needs to be changed?

Which part of today's lesson was successful?

Which part of today's lesson required more time that it was allocated?

Annex 4: Teacher Performance Assessment Tool

Observer feedback form

HLC pilot monitoring instrument for evaluating teacher performance quality

Observer:

Date:	City: □ Tbilisi □ Telavi
School identification number:	Grade: □ 9th □ 10th
Number of students: Girls - Boys -	
Subject: □ Biology □ PE	Teacher's sex: □ Male □ Female
Theme that was discussed during today's class:	
□ Topic 1: Tobacco □ Topic 2: Alcohol □ Topic 3: Drugs □ Topic 4: HIV	□ Topic 5: STIs □ Topic 6: Assertion □ Topic 7: Early pregnancy □ Topic 8: Gender and Sex

Lesson theme:

Students' reaction on lesson activities

1. **Which part of the lesson evoked students' emotional reaction?**

Theory Part

1	2	3	4
Very Low	Low	High	Very High

Discussion

1	2	3	4
Very Low	Low	High	Very High

Activities

1	2	3	4
Very Low	Low	High	Very High

Comments:

_____

_____

_____

2. **Where there discussions provoked by activities between girls, boys and teachers?**

There were no discussions, just didactical teaching from teachers to students without any questions or discussions from students	⟵⟶	High indicator of activities, low indicator of didactical teaching, high indicator of group discussions and questions from students

1	2	3	4	5
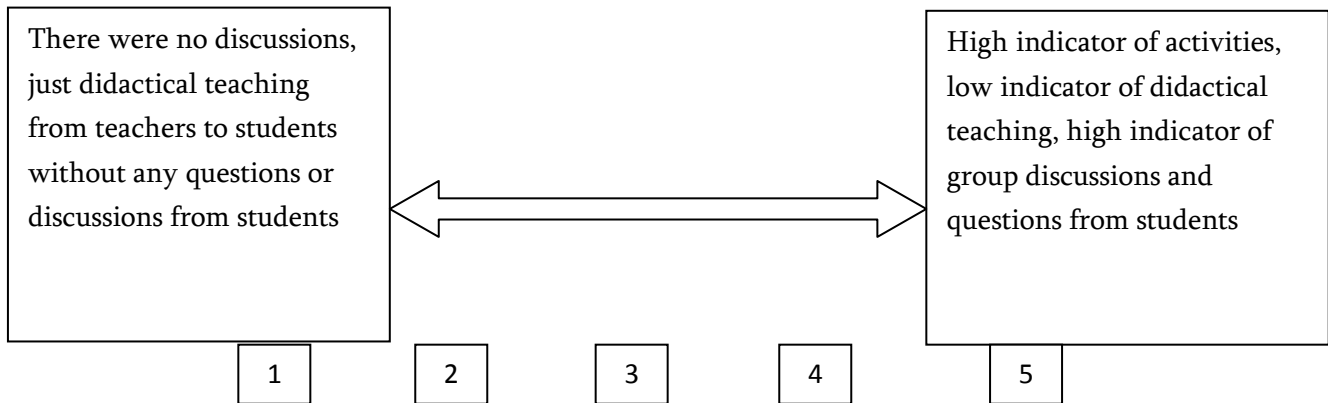
Comments:

_____

_____

_____

_____

3. How would you rank students perception level of information?

1	2	3	4
Bad	Partially good	Good	Very good

Comments:

_____

_____

_____

_____

4. How was the involvement level:

Girls	1	2	3	4
	Bad	Partially good	Good	Very good

Boys	1	2	3	4
	Bad	Partially good	Good	Very Good

5. In your opinion, has children received information on that desirable behavior, that they might follow in their lives after this lesson? What behaviors will be discussed?

Teacher's skills

6. How skillful was teacher to facilitate group discussions between students and him/herself and students?

There was not facilitation al all, only didactical teaching and lecturing.	⟺	Teacher was easily using group discussion techniques and discussions and brainstorming for achieving students' maximum involvement

1	2	3	4	5
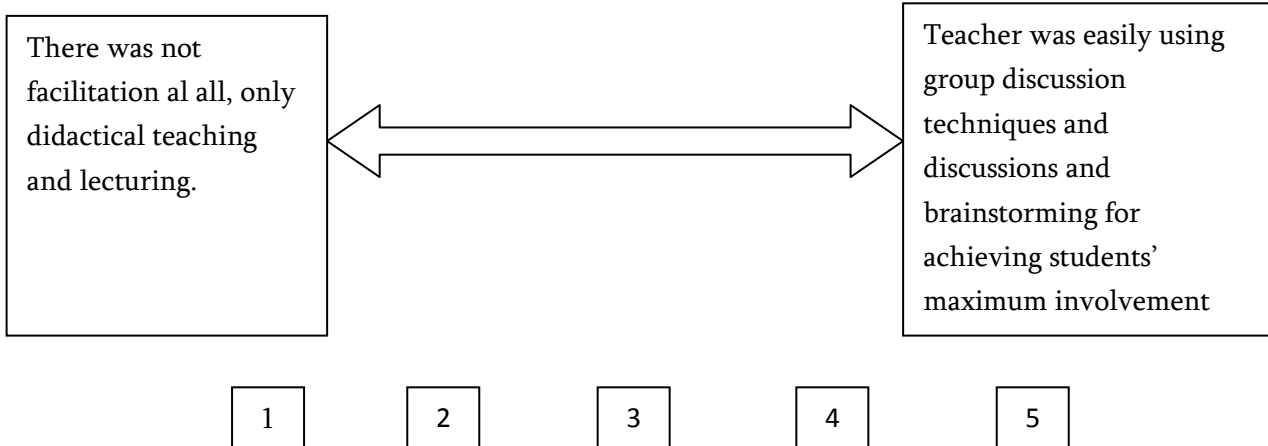
7. **Which of the skills of teachers was most effective?**

8. **Which of the skills of a teacher was least effective?**

9. **How comfortable was teacher in conducting today's lesson?**

1	2	3	4
Not comfortable	Partially comfortable	Comfortable	Very Comfortable

10. **Was teacher using personal examples of valued believes in decision making process on what messages to use for students?**

11. **How clearly was healthy lifestyle messages were delivered to students by teacher?**

1	2	3	4	5
Absolutely not clear				Absolutely clear

12. **What were major messages that you were able to hear from teacher?**

13. **How was teacher interacting with students? How was teacher's interpersonal style?**

1	2	3	4	5
Very limited				Very Effective

Final observations

14. **To summarize, how should you rank teacher's work in general?**

1	2	3	4
Bad	Partially good	Good	Very Good

15. **As a summary for the teaching and learning activities, how would you evaluate students' general reaction to the lesson?**

1	2	3	4
Bad	Partially good	Good	Very Good

Teacher feedback:

At the end of the lesson, please sit with teachers and during 15 minutes share your point of view on the last two questions of this form.

16. **Please write the positive aspects that made impression on you about the teachers. Share these aspects and impression with the teacher and let the teacher know your impression on the teacher's today's work. (try to be positive and encouraging)**

17. **Please write one or two recommendations, that would held teacher to improve facilitation skills. Please share these recommendations with the teacher. (try to be positive and encouraging)**

Annex 5: Data Tables – Descriptive Statistics (Baseline and Follow-Up Surveys)

Table 7: Demographic Characteristics

Characteristics	Baseline data			Follow-up data		
	Pilot	Control	Total	Pilot	Control	Total
	(N =635)	(N =195)	(N =830)	(689)	(242)	(931)
Sex						
Male	46.1% (293)	43.1% (84)	45.4% (377)	46.7% (322)	44.2% (107)	46.1% (429)
Female	53.9% (342)	56.9% (111)	54.6% (453)	53.3% (367)	55.8% (135)	53.9% (502)
Age						
Mean	14.90	14.97	14.91	15.21	15.28	15.23
Grade						
9th	52.1% (331)	44.6% (87)	50.4% (418)	49.8% (343)	50.4% (122)	49.9% (465)
10th	47.9% (304)	55.4% (108)	49.6% (412)	50.2% (346)	49.6% (120)	50.1% (466)

Table 8: Tobacco use

Tobacco use	Baseline data			Follow-up data		
	Pilot	Control	Total	Pilot	Control	Total
	(N =635)	(N =195)	(N =830)	(689)	(242)	(931)
Quit smoking	(635)	(194)	(829)	(687)	(242)	(929)
Definitely won't be difficult	7.1% (45)	7.2% (14)	7.1% (59)	5.7% (39)	7.0% (17)	6.0% (56)
Probably won't be difficult	7.7% (49)	14.4% (28)	9.3% (77)	6.4% (44)	10.7% (26)	7.5% (70)
Probably will be difficult	35.4% (225)	38.7% (75)	36.2% (300)	22.9% (157)	33.5% (81)	25.6% (238)
Definitely will be difficult	49.8% (316)	39.7% (77)	47.4% (393)	65.1% (447)	48.8% (118)	60.8% (565)

Tobacco use	Baseline data			Follow-up data		
	Pilot	**Control**	**Total**	**Pilot**	**Control**	**Total**
	(N =635)	**(N =195)**	**(N =830)**	**(689)**	**(242)**	**(931)**
Harm from smoking	(635)	(195)	(830)	(687)	(242)	(929)
Definitely won't be harmful	2.8% (18)	0.5% (1)	2.3% (19)	1.7% (12)	0.8% (2)	1.5% (14)
Probably won't be harmful	0.6% (4)	1% (2)	0.7% (6)	0.7% (5)	1.2% (3)	0.9% (8)
Probably will be harmful	3.9% (25)	5.1% (10)	4.2% (35)	3.5% (24)	4.1% (10)	3.7% (34)
Definitely will be harmful	92.6% (588)	93.3% (182)	92.8% (770)	94.0% (646)	93.8% (227)	94.0% (873)
Passive smoking	(635)	(195)	(830)	(687)	(241)	(928)
Less than 5 cigarettes (Yes)	8.3% (53)	9.2% (18)	8.6% (71)	9.2% (63)	7.1% (17)	8.6% (80)
Smoking at celebrations (Yes)	8.0% (51)	7.7% (15)	8.0% (66)	5.4% (37)	7.5% (18)	5.9% (55)
Smoking when nervous (Yes)	14.5% (92)	14.4% (28)	14.5% (120)	10.5% (72)	7.9% (19)	9.8% (91)
Breathing other people's smoke (Yes)	46.0% (292)	44.6% (87)	45.7% (379)	72.6% (499)	61.4% (148)	69.7% (647)
Other	7.6% (48)	8.7% (17)	7.8% (65)	4.9% (34)	6.2% (15)	5.3% (49)
Don't know	17.0% (108)	15.9% (31)	16.7% (139)	5.5% (38)	11.6% (28)	7.1% (66)
It is safe to smoke tobacco during 1-2 years if you quit it afterwards	(633)	(190)	(823)	(678)	(241)	(919)
True	20.9% (132)	17.4% (33)	20.0% (165)	19.5% (132)	21.6% (52)	20.0% (184)
False	57.2% (362)	59.5% (113)	57.7% (475)	69.8% (473)	57.7% (139)	66.6% (612)
Don't know	22.0% (139)	23.2% (44)	22.2% (183)	10.8% (73)	20.7% (50)	13.4% (123)
Passive smoking is harmful	(632)	(194)	(826)	(684)	(241)	(925)
True	92.6% (585)	96.9% (188)	93.6% (773)	96.1% (657)	96.7% (233)	96.2% (890)
False	3.8% (24)	2.6% (5)	3.5% (29)	2.5% (17)	2.5% (6)	2.5% (23)
Don't know	3.6%	0.5% (1)	2.9% (24)	1.5% (10)	0.8% (2)	1.3% (12)
Smoking is harmful during pregnancy	(633)	(195)	(828)	(682)	(242)	(924)
True	96.2% (609)	97.9% (191)	96.6% (800)	97.1% (662)	97.5% (236)	97.2% (898)
False	1.9% (12)	1.5% (3)	1.8% (15)	1.2% (8)	0.8% (2)	1.1% (10)
Don't know	1.9% (12)	0.5% (1)	1.6% (13)	1.8% (12)	1.7% (4)	1.7% (16)

Tobacco use	Baseline data			Follow-up data		
	Pilot	**Control**	**Total**	**Pilot**	**Control**	**Total**
	(N =635)	**(N =195)**	**(N =830)**	**(689)**	**(242)**	**(931)**
Smoking is not harmful for fetus	(630)	(195)	(825)	(684)	(242)	(926)
True	7.9% (50)	4.6% (9)	7.2% (59)	6.6% (45)	7.9% (19)	6.9% (64)
False	85.6% (539)	93.3% (182)	87.4% (721)	89.6% (613)	87.2% (211)	89.0% (824)
Don't know	6.5% (41)	2.1% (4)	5.5% (45)	3.8% (26)	5.0% (12)	4.1% (38)
Smoking kills every other smoker and significantly shortens life for the rest of smokers	(631)	(195)	(826)	(682)	(241)	(923)
True	73.1% (461)	80.0% (156)	74.7% (617)	78.4% (535)	78.8% (190)	78.5% (725)
False	10.9% (69)	4.1% (8)	9.3% (77)	10.9% (74)	5.4% (13)	9.4% (87)
Don't know	16.0% (101)	15.9% (31)	16.0% (132)	10.7% (73)	15.8% (38)	12.0% (111)
Women who smoke have increased chances to be infertile and rarely become pregnant compared to non-smokers	(628)	(194)	(822)	(676)	(242)	(918)
True	62.9% (395)	66.0% (128)	63.6% (523)	80.0% (541)	70.7% (171)	77.6% (712)
False	10.5% (66)	6.2% (12)	9.5% (78)	5.9% (40)	6.6% (16)	6.1% (56)
Don't know	26.6% (167)	27.8% (54)	26.9% (221)	14.1% (95)	22.7% (55)	16.3% (150)
Better to smoke quickly and completely	(631)	(193)	(824)	(685)	(242)	(927)
True	6.2% (39)	4.1% (8)	5.7% (47)	7.3% (50)	6.2% (15)	7.0% (65)
False	42.9% (271)	45.1% (87)	43.4% (358)	60.1% (412)	43.4% (105)	55.8% (517)
Don't know	50.9% (321)	50.8% (98)	50.8% (419)	32.6% (223)	50.4% (122)	37.2% (345)
Tobacco - dangerous drug	(632)	(195)	(827)	(683)	(241)	(924)
True	75.6% (478)	84.1% (164)	77.6% (642)	82.3% (562)	75.9% (183)	80.6% (745)
False	15.3% (97)	7.7% (15)	13.5% (112)	12.0% (82)	11.2% (27)	11.8% (109)
Don't know	9.0% (57)	8.2% (16)	8.8% (73)	5.7% (39)	12.9% (31)	7.6% (70)

Table 9: Alcohol use

Alcohol use	Baseline data			Follow-up data		
	Pilot	**Control**	**Total**	**Pilot**	**Control**	**Total**
	(N =635)	**(N =195)**	**(N =830)**	**(689)**	**(242)**	**(931)**
Excessive and regular alcohol consumption is harmful to human health	(633)	(195)	(828)	(685)	(242)	(927)
Definitely not harmful	3.2% (20)	1.0% (2)	2.7% (22)	2.2% (15)	3.3% (8)	2.5% (23)
Probably not harmful	2.8% (18)	0.5% (1)	2.3% (19)	1.8% (12)	1.7% (4)	1.7% (16)
Probably harmful	10.1% (64)	12.8% (25)	10.7% (89)	8.8% (60)	9.9% (24)	9.1% (84)
Definitely harmful	83.9% (531)	85.6% (167)	84.3% (698)	87.3% (598)	85.1% (206)	86.7% (804)
Type of consumed alcohol has substantial significance for the development of cirrhosis	(624)	(193)	(817)	(680)	(240)	(920)
Definitely has not essential meaning	9.0% (56)	9.8% (19)	9.2% (75)	8.7% (59)	6.7% (16)	8.2% (75)
Probably has not essential meaning	9.6% (60)	11.9% (23)	10.2% (83)	7.5% (51)	8.3% (20)	7.7% (71)
Probably has essential meaning	33.7% (210)	33.2% (64)	33.5% (274)	27.2% (185)	35.8% (86)	29.5% (271)
Definitely has essential meaning	47.8% (298)	45.1% (87)	47.1% (385)	56.6% (385)	49.2% (118)	54.7% (503)
Different effects of alcohol	(635)	(195)	(830)	(688)	(242)	(930)
Person's biological characteristics	49.9% (317)	44.1% (86)	48.6% (403)	57.4% (395)	50.8% (123)	55.7% (518)
Emotional condition	22.8% (145)	23.6% (46)	23.0% (191)	28.5% (196)	24.4% (59)	27.4% (255)
Speed of alcohol consumption	28.3% (180)	28.7% (56)	28.4% (236)	40.1% (276)	30.6% (74)	37.6% (350)
Concomitant diseases	26.9% (171)	27.2% (53)	27.0% (224)	32.1% (221)	26.0% (63)	30.5% (284)
Having a meal	20.2% (128)	18.5% (36)	19.8% (164)	29.2% (201)	19.0% (46)	26.6% (247)
Other	0.3% (2)	0% (0)	0.2% (2)	2.5% (17)	2.5% (6)	2.5% (23)
The same effect on all individuals	3.0% (19)	2.6% (5)	2.9% (24)	3.2% (22)	2.5% (6)	3.0% (28)
Don't know	21.1% (134)	19.0% (37)	20.6% (171)	10.5% (72)	16.5% (40)	12.0% (112)
All items correct	1.9% (12)	1.5% (3)	1.8% (15)	6.1% (42)	2.5% (6)	5.2% (48)
Alcohol can be addictive	(632)	(195)	(827)	(684)	(242)	(926)
True	92.7% (586)	94.9% (185)	93.2% (771)	95.0% (650)	93.4% (226)	94.6% (876)

Alcohol use	Baseline data			Follow-up data		
	Pilot	**Control**	**Total**	**Pilot**	**Control**	**Total**
	(N =635)	**(N =195)**	**(N =830)**	**(689)**	**(242)**	**(931)**
False	4.1% (26)	2.1% (4)	3.6% (30)	2.6% (18)	2.9% (7)	2.7% (25)
Don't know	3.2% (20)	3.1% (6)	3.1% (26)	2.3% (16)	3.7% (9)	2.7% (25)
Early alcohol use greater risk for abuse	(632)	(195)	(827)	(683)	(241)	(924)
True	81.0% (512)	87.2% (170)	82.5% (682)	86.1% (588)	82.6% (199)	85.2% (787)
False	6.5% (41)	5.6% (11)	6.3% (52)	5.7% (39)	6.6% (16)	6.0% (55)
Don't know	12.5% (79)	7.2% (14)	11.2% (93)	8.2% (56)	10.8% (26)	8.9% (82)
Teens become alcohol-dependent easier than adults	(629)	(194)	(823)	(683)	(242)	(925)
True	51.0% (321)	47.4% (92)	50.2% (413)	67.1% (458)	59.1% (143)	65.0% (601)
False	14.6% (92)	10.8% (21)	13.7% (113)	13.5% (92)	11.2% (27)	12.9% (119)
Don't know	34.3% (216)	41.8% (81)	36.1% (297)	19.5% (133)	29.8% (72)	22.2% (205)
Peers don't affect on teenagers' decision to use alcohol or drugs	(629)	(194)	(823)	(674)	(241)	(915)
True	17.8% (112)	16.0% (31)	17.4% (143)	17.8% (1202)	19.9% (48)	18.4% (168)
False	59.9% (377)	61.3% (119)	60.3% (496)	71.8% (484)	58.1% (140)	68.2% (624)
Don't know	22.3% (140)	22.7% (44)	22.4% (184)	10.4% (70)	22.0% (53)	13.4% (123)
Majority of teens had tasted alcohol for the first time together with their peers	(629)	(195)	(824)	(672)	(242)	(914)
True	70.3% (442)	72.3% (141)	70.8% (583)	78.0% (524)	73.1% (177)	76.7% (701)
False	16.7% (105)	12.8% (25)	15.8% (130)	12.6% (85)	10.7% (26)	12.1% (111)
Don't know	13.0% (82)	14.9% (29)	13.5% (111)	9.4% (63)	16.1% (39)	11.2% (102)
A cup of coffee/cold shower for sobering up	(632)	(194)	(826)	(674)	(241)	(915)
True	38.9% (246)	36.1% (70)	38.3% (316)	35.0% (236)	35.3% (85)	35.1% (321)
False	31.0% (196)	32.0% (62)	31.2% (258)	45.5% (307)	36.1% (87)	43.1% (394)
Don't know	30.1% (190)	32.0% (62)	30.5% (252)	19.4% (131)	28.6% (69)	21.9% (200)

Alcohol use	Baseline data			Follow-up data		
	Pilot	**Control**	**Total**	**Pilot**	**Control**	**Total**
	(N =635)	**(N =195)**	**(N =830)**	**(689)**	**(242)**	**(931)**
Alcohol increases sexual drive	(627)	(193)	(820)	(680)	(242)	(922)
True	38.9% (244)	41.5% (80)	39.5% (324)	53.8% (366)	52.5% (127)	53.5% (493)
False	14.8% (93)	12.4% (24)	14.3% (117)	22.1% (150)	13.2% (32)	19.7% (182)
Don't know	46.3% (290)	46.1% (89)	46.2% (379)	24.1% (164)	34.3% (83)	26.8% (247)
Wine is a part of Georgian culture, therefore, children are allowed to drink wine	(628)	(194)	(822)	(676)	(242)	(918)
True	31.7% (199)	27.3% (53)	30.7% (252)	25.0% (169)	27.3% (66)	25.6% (235)
False	56.2% (353)	58.2% (113)	56.7% (466)	66.9% (452)	54.1% (131)	63.5% (583)
Don't know	12.1% (76)	14.4% (28)	12.7% (104)	8.1% (55)	18.6% (45)	10.9% (100)

Table 10: Drug use

Drug use	Baseline data			Follow-up data		
	Pilot	**Control**	**Total**	**Pilot**	**Control**	**Total**
	(N =635)	**(N =195)**	**(N =830)**	**(689)**	**(242)**	**(931)**
Harm from using household chemicals, e.g. sniffing glue	(630)	(195)	(825)	(682)	(242)	(924)
Definitely not harmful	2.7% (17)	2.1% (4)	2.5% (21)	2.6% (18)	1.7% (4)	2.4% (22)
Probably not harmful	6.7% (42)	2.6% (5)	5.7% (47)	4.1% (28)	3.7% (9)	4.0% (37)
Probably harmful	24.4% (154)	22.6% (44)	24.0% (196)	15.8% (108)	13.6% (33)	15.3% (141)
Definitely harmful	66.2% (417)	72.8% (142)	67.8% (559)	77.4% (528)	81.0% (196)	78.4% (724)
Harm from smoking marijuana	(629)	(194)	(823)	(686)	(242)	(928)
Definitely not harmful	5.7% (36)	5.7% (11)	5.7% (47)	3.8% (26)	6.2% (15)	4.4% (41)
Probably not harmful	4.0% (25)	4.6% (9)	4.1% (34)	2.6% (18)	4.5% (11)	3.1% (29)
Probably harmful	19.9% (125)	10.3% (20)	17.6% (145)	10.1% (69)	16.9% (41)	11.9% (110)
Definitely harmful	70.4% (443)	79.4% (154)	72.5% (597)	83.5% (573)	72.3% (175)	80.6% (748)
Risks of drug injection	(629)	(195)	(824)	(685)	(242)	(927)
High risk of Hep B, C/HIV transmission	50.4% (317)	46.2% (90)	49.4% (407)	70.4% (482)	54.1% (131)	66.1% (613)
Liver damage	22.9% (144)	20.5% (40)	22.3% (184)	25.0% (171)	21.9% (53)	24.2% (224)
Cardio - vascular diseases	34.8% (219)	28.7% (56)	33.4% (275)	43.4% (297)	30.6% (74)	40.0% (371)
Brain damage	34.2% (215)	36.4% (71)	34.7% (286)	34.7% (238)	30.2% (73)	33.5% (311)
Death from an overdose	46.9% (295)	42.1% (82)	45.8% (377)	51.2% (351)	43.0% (104)	49.1% (455)
Other	0.0% (0)	0.0% (0)	0.0% (0)	1.9% (13)	0.8% (2)	1.6% (15)
No threat	1.0% (6)	0.0% (0)	0.7% (6)	0.1% (1)	0.0% (0)	0.1% (1)
Don't know	19.7% (124)	26.7% (52)	21.4% (176)	11.1% (76)	24.0% (58)	14.5% (134)
All items correct	9.7% (61)	10.8% (21)	10.0% (82)	13.6% (93)	9.5% (23)	12.5% (116)
All drugs cause psychic dependence	(633)	(195)	(828)	(685)	(239)	(924)
True	81.2% (514)	79.0% (154)	80.7% (668)	85.8% (588)	87.4% (209)	86.3% (797)
False	3.9% (25)	5.1% (10)	4.2% (35)	7.3% (50)	3.8% (9)	6.4% (59)

Drug use	Baseline data			Follow-up data		
	Pilot	Control	Total	Pilot	Control	Total
	(N =635)	(N =195)	(N =830)	(689)	(242)	(931)
Don't know	14.8% (94)	15.9% (31)	15.1% (125)	6.9% (47)	8.8% (21)	7.4% (68)
Marijuana is not a drug	(633)	(193)	(826)	(684)	(240)	(924)
True	20.4% (129)	22.3% (43)	20.8% (172)	17.3% (118)	20.4% (49)	18.1% (167)
False	65.9% (417)	66.3% (128)	66.0% (545)	78.1% (534)	65.8% (158)	74.9% (692)
Don't know	13.7% (87)	11.4% (22)	13.2% (109)	4.7% (32)	13.8% (33)	7.0% (65)
Marijuana doesn't cause dependence	(628)	(191)	(819)	(681)	(236)	(917)
True	20.4% (128)	18.3% (35)	19.9% (163)	20.1% (137)	16.5% (39)	19.2% (176)
False	53.3% (335)	59.2% (113)	54.7% (448)	69.8% (475)	60.6% (143)	67.4% (618)
Don't know	26.3% (165)	22.5% (43)	25.4% (208)	10.1% (69)	22.9% (54)	13.4% (123)
Withdrawal syndrome is the only sign of addiction	(628)	(191)	(819)	(681)	(238)	(919)
True	47.1% (296)	50.3% (96)	47.9% (392)	50.7% (345)	54.6% (130)	51.7% (475)
False	24.4% (153)	17.8% (34)	22.8% (187)	34.4% (234)	18.5% (44)	30.3% (278)
Don't know	28.5% (179)	31.9% (61)	29.3% (240)	15.0% (102)	26.9% (64)	18.1% (166)
Withdrawal syndrome relief means to have person cured from drug addiction	(631)	(194)	(825)	(678)	(241)	(919)
True	33.4% (211)	40.7% (79)	35.2% (290)	35.1% (238)	41.9% (101)	36.9% (339)
False	31.9% (201)	25.8% (50)	30.4% (251)	46.0% (312)	26.6% (64)	40.9% (376)
Don't know	34.7% (219)	33.5% (65)	34.4% (284)	18.9% (128)	31.5% (76)	22.2% (204)
All drugs are psychoactive substances	(630)	(193)	(823)	(680)	(240)	(920)
True	66.3% (418)	60.6% (117)	65.0% (535)	76.2% (518)	65.0% (156)	73.3% (674)
False	7.1% (45)	3.6% (7)	6.3% (52)	7.9% (54)	4.6% (11)	7.1% (65)
Don't know	26.5% (167)	35.8% (69)	28.7% (236)	15.9% (108)	30.4% (73)	19.7% (181)
All drugs cause physical dependence	(633)	(194)	(827)	(678)	(240)	(918)
True	67.1% (425)	62.9% (122)	66.1% (547)	77.4% (525)	67.5% (162)	74.8% (687)

Drug use	Baseline data			Follow-up data		
	Pilot	**Control**	**Total**	**Pilot**	**Control**	**Total**
	(N =635)	**(N =195)**	**(N =830)**	**(689)**	**(242)**	**(931)**
False	6.8% (43)	8.2% (16)	7.1% (59)	11.4% (77)	7.9% (19)	10.5% (96)
Don't know	26.1% (165)	28.9% (56)	26.7% (221)	11.2% (76)	24.6% (59)	14.7% (135)
Many of IDUs started with Marijuana	(632)	(194)	(826)	(681)	(237)	(918)
True	32.0% (202)	36.6% (71)	33.1% (273)	48.8% (332)	35.0% (83)	45.2% (415)
False	17.6% (111)	11.3% (22)	16.1% (133)	20.9% (142)	13.9% (33)	19.1% (175)
Don't know	50.5% (319)	52.1% (101)	50.8% (420)	30.4% (207)	51.1% (121)	35.7% (328)

Table 11: Early marriage and pregnancy by type of schools

Early marriage and pregnancy	Baseline data			Follow-up data		
	Pilot	**Control**	**Total**	**Pilot**	**Control**	**Total**
	(N =635)	**(N =195)**	**(N =830)**	**(689)**	**(242)**	**(931)**
Teens should begin sexual relations from early ages	(628)	(194)	(822)	(685)	(242)	(927)
Definitely should not begin	51.6% (324)	53.1% (103)	51.9% (427)	59.1% (405)	51.7% (125)	57.2% (530)
Probably should not begin	25.3% (159)	24.2% (47)	25.1% (206)	16.4% (112)	19.8% (48)	17.3% (160)
Probably should begin	9.6% (60)	8.8% (17)	9.4% (77)	8.6% (59)	8.7% (21)	8.6% (80)
Definitely should begin	13.5% (85)	13.9% (27)	13.6% (112)	15.9% (109)	19.8% (48)	16.9% (157)
Pregnancy at an early age is more risky	(630)	(194)	(824)	(685)	(241)	(926)
Definitely not risky	7.0% (44)	5.7% (11)	6.7% (55)	7.0% (48)	6.2% (15)	6.8% (63)
Probably not risky	5.4% (34)	5.7% (11)	5.5% (45)	3.1% (21)	7.9% (19)	4.3% (40)
Probably risky	28.9% (182)	26.8% (52)	28.4% (234)	16.5% (113)	25.7% (62)	18.9% (175)
Definitely risky	58.7% (370)	61.9% (120)	59.5% (490)	73.4% (503)	60.2% (145)	70.0% (648)
Complications of abortion	(634)	(195)	(829)	(685)	(241)	(926)
Infections	37.2% (236)	42.6% (83)	38.5% (319)	57.5% (394)	50.2% (121)	55.6% (515)
Infertility	59.9% (380)	67.2% (131)	61.6% (511)	79.9% (547)	68.9% (166)	77.0% (713)
Bleeding	36.9% (234)	32.3% (63)	35.8% (297)	56.9% (390)	49.0% (118)	54.9% (508)
Fever	10.9% (69)	10.3% (20)	10.7% (89)	22.2% (152)	12.4% (30)	19.7% (182)
Uterine perforation	39.7% (252)	39.0% (76)	39.6% (328)	52.8% (362)	45.6% (110)	51.0% (472)
Other	0.9% (6)	2.1% (4)	1.2% (10)	1.2% (8)	0.4% (1)	1.0% (9)
No negative effect	0.3% (2)	0.0% (0)	0.2% (2)	0.7% (5)	0.0% (0)	0.5% (5)
Don't know	24.8% (157)	21.5% (42)	24.0% (199)	9.2% (63)	15.8% (38)	10.9% (101)
All items correct	17.0% (108)	19.0% (37)	17.5% (145)	33.7% (231)	25.7% (62)	31.6% (293)
The beginning of sexual relations- a responsible step for health of both partners	(629)	(193)	(822)	(682)	(241)	(923)
True	80.4% (506)	85.0% (164)	81.5% (670)	86.7% (591)	86.7% (209)	86.7% (800)

Early marriage and pregnancy	Baseline data			Follow-up data		
	Pilot	**Control**	**Total**	**Pilot**	**Control**	**Total**
	(N =635)	**(N =195)**	**(N =830)**	**(689)**	**(242)**	**(931)**
False	3.7% (23)	3.1% (6)	3.5% (29)	3.7% (25)	3.7% (9)	3.7% (34)
Don't know	15.9% (100)	11.9% (23)	15.0% (123)	9.7% (66)	9.5% (23)	9.6% (89)
Multiple contacts with women demonstrate masculinity	(628)	(193)	(821)	(683)	(241)	(924)
True	36.1% (227)	32.1% (62)	35.2% (289)	32.1% (219)	36.1% (87)	33.1% (306)
False	32.8% (206)	34.2% (66)	33.1% (272)	53.7% (367)	36.1% (87)	49.1% (454)
Don't know	31.1% (195)	33.7% (65)	31.7% (260)	14.2% (97)	27.8% (67)	17.7% (164)
First menstruation means that a girl is sexually ready to become mother	(627)	(193)	(820)	(676)	(239)	(915)
True	41.6% (261)	39.4% (76)	41.1% (337)	44.4% (300)	39.3% (94)	43.1% (394)
False	34.9% (219)	37.3% (72)	35.5% (291)	42.5% (287)	36.8% (88)	41.0% (375)
Don't know	23.4% (147)	23.3% (45)	23.4% (192)	13.2% (89)	23.8% (57)	16.0% (146)
Having sex means adulthood	(628)	(193)	(821)	(681)	(241)	(922)
True	17.0% (107)	14.5% (28)	16.4% (135)	14.2% (97)	12.9% (31)	13.9% (128)
False	68.9% (433)	68.9% (133)	68.9% (566)	78.0% (531)	75.5% (182)	77.3% (713)
Don't know	14.0% (88)	16.6% (32)	14.6% (120)	7.8% (53)	11.6% (28)	8.8% (81)
A girl can get pregnant even if she has had only one sexual contact	(630)	(193)	(823)	(682)	(241)	(923)
True	62.1% (391)	58.0% (112)	61.1% (503)	74.2% (506)	65.1% (157)	71.8% (663)
False	12.7% (80)	14.0% (27)	13.0% (107)	12.6% (86)	8.3% (20)	11.5% (106)
Don't know	25.2% (159)	28.0% (54)	25.9% (213)	13.2% (90)	26.6% (64)	16.7% (154)
Using condom prevents from pregnancy	(625)	(187)	(812)	(675)	(237)	(912)
True	46.9% (293)	41.7% (78)	45.7% (371)	75.1% (507)	62.4% (148)	71.8% (655)
False	3.7% (23)	3.7% (7)	3.7% (30)	8.9% (60)	4.6% (11)	7.8% (71)
Don't know	49.4% (309)	54.5% (102)	50.6% (411)	16.0% (108)	32.9% (78)	20.4% (186)

Early marriage and pregnancy	Baseline data			Follow-up data		
	Pilot	Control	Total	Pilot	Control	Total
	(N =635)	(N =195)	(N =830)	(689)	(242)	(931)
Safe sex means use of a condom	(627)	(190)	(817)	(681)	(239)	(920)
True	44.8% (281)	36.3% (69)	42.8% (350)	67.3% (458)	52.3% (125)	63.4% (583)
False	12.1% (76)	8.4% (16)	11.3% (92)	16.2% (110)	13.4% (32)	15.4% (142)
Don't know	43.1% (270)	55.3% (105)	45.9% (375)	16.6% (113)	34.3% (82)	21.2% (195)
Contraception pills don't protect from STIs	(632)	(194)	(826)	(678)	(239)	(917)
True	41.6% (261)	33.3% (64)	39.6% (325)	51.6% (350)	42.3% (101)	49.2% (451)
False	15.4% (97)	18.2% (35)	16.1% (132)	21.5% (146)	16.3% (39)	20.2% (185)
Don't know	43.0% (270)	48.4% (93)	44.3% (363)	26.8% (182)	41.4% (99)	30.6% (281)

Table 12: Early marriage and pregnancy by sex

Early marriage and pregnancy	Baseline data			Follow-up data		
	Male	Female	Total	Male	Female	Total
	(N =377)	(N =453)	(N =830)	(N =429)	(N =502)	(N =931)
Pregnancy at an early age is more risky	(374)	(450)	(824)	(426)	(500)	(926)
Definitely not risky	8.0% (30)	5.6% (25)	6.7% (55)	10.1% (43)	4.0% (20)	6.8% (63)
Probably not risky	7.0% (26)	4.2% (19)	5.5% (45)	4.9% (21)	3.8% (19)	4.3% (40)
Probably risky	29.7% (111)	27.3% (123)	28.4% (234)	21.8% (93)	16.4% (82)	18.9% (175)
Definitely risky	55.3% (207)	62.9% (283)	59.5% (490)	63.1% (269)	75.8% (379)	70.0% (648)
The beginning of sexual relations- a responsible step for health of both partners	(373)	(449)	(822)	(426)	(497)	(923)
True	77.7% (290)	84.6% (380)	81.5% (670)	82.9% (353)	89.9% (447)	86.7% (800)
False	5.1% (19)	2.2% (10)	3.5% (29)	5.6% (24)	2.0% (10)	3.7% (34)
Don't know	17.2% (64)	13.1% (59)	15.0% (123)	11.5% (49)	8.0% (40)	9.6% (89)
Multiple contacts with women demonstrate masculinity	(373)	(448)	(821)	(426)	(498)	(924)

Early marriage and pregnancy	Baseline data			Follow-up data		
	Male	**Female**	**Total**	**Male**	**Female**	**Total**
	(N =377)	**(N =453)**	**(N =830)**	**(N =429)**	**(N =502)**	**(N =931)**
True	52.5% (196)	20.8% (93)	35.2% (289)	47.9% (204)	20.5% (102)	33.1% (306)
False	30.6% (114)	35.3% (158)	33.1% (272)	43.0% (183)	54.4% (271)	49.1% (454)
Don't know	16.9% (63)	44.0% (197)	31.7% (260)	9.2% (39)	25.1% (125)	17.7% (164)
First menstruation means that a girl is sexually ready to become mother	(370)	(450)	(820)	(419)	(496)	(915)
True	39.2% (145)	42.7% (192)	41.1% (337)	39.9% (167)	45.8% (227)	43.1% (394)
False	26.2% (97)	43.1% (194)	35.5% (291)	34.4% (144)	46.6% (231)	41.0% (375)
Don't know	34.6% (128)	14.2% (64)	23.4% (192)	25.8% (108)	7.7% (38)	16.0% (146)
Having sex means adulthood	(371)	(450)	(821)	(424)	(498)	(922)
True	24.0% (89)	10.2% (46)	16.4% (135)	21.9% (93)	7.0% (35)	13.9% (128)
False	65.2% (242)	72.0% (324)	68.9% (566)	71.9% (305)	81.9% (408)	77.3% (713)
Don't know	10.8% (40)	17.8% (80)	14.6% (120)	6.1% (26)	11.0% (55)	8.8% (81)
A girl can get pregnant even if she has had only one sexual contact	(372)	(451)	(823)	(426)	(497)	(923)
True	62.4% (232)	60.1% (271)	61.1% (503)	71.8% (306)	71.8% (357)	71.8% (663)
False	17.7% (66)	9.1% (41)	13.0% (107)	16.4% (70)	7.2% (36)	11.5% (106)
Don't know	19.9% (74)	30.8% (139)	25.9% (213)	11.7% (50)	20.9% (104)	16.7% (154)
Using condom prevents from pregnancy	(374)	(450)	(824)	(422)	(490)	(912)
True	58.6% (214)	35.1% (157)	45.7% (371)	76.8% (324)	67.6% (331)	71.8% (655)
False	4.4% (16)	3.1% (14)	3.7% (30)	9.7% (41)	6.1% (30)	7.8% (71)
Don't know	37.0% (135)	61.7% (276)	50.6% (411)	13.5% (57)	26.3% (129)	20.4% (186)
Safe sex means use of a condom	(372)	(445)	(817)	(424)	(496)	(920)
True	58.1% (216)	30.1% (134)	42.8% (350)	72.9% (309)	55.2% (274)	63.4% (583)
False	12.4% (46)	10.3% (46)	11.3% (92)	13.4% (57)	17.1% (85)	15.4% (142)
Don't know	29.6% (110)	59.6% (265)	45.9% (375)	13.7% (48)	27.6% (137)	21.2% (195)

Early marriage and pregnancy	Baseline data			Follow-up data		
	Male	Female	Total	Male	Female	Total
	(N =377)	(N =453)	(N =830)	(N =429)	(N =502)	(N =931)
Contraception pills don't protect from STIs	(374)	(450)	(824)	(422)	(495)	(917)
True	37.0% (137)	41.8% (188)	39.6% (325)	48.3% (204)	49.9% (247)	49.2% (451)
False	21.9% (81)	11.3% (51)	16.1% (132)	22.3% (94)	18.4% (91)	20.2% (185)
Don't know	41.1% (152)	46.9% (211)	44.3% (363)	29.4% (124)	31.7% (157)	30.6% (281)

Table 13: STIs and HIV/AIDS

STIs and HIV/AIDS	Baseline data			Follow-up data		
	Pilot	Control	Total	Pilot	Control	Total
	(N =635)	(N =195)	(N =830)	(689)	(242)	(931)
It is possible to get STI only from one sexual intercourse	(623)	(193)	(816)	(679)	(239)	(918)
Definitely not possible	3.5% (22)	2.1% (4)	3.2% (26)	3.7% (25)	2.9% (7)	3.5% (32)
Probably not possible	8.0% (50)	4.7% (9)	7.2% (59)	5.2% (35)	6.7% (16)	5.6% (51)
Probably possible	42.7% (266)	53.4% (103)	45.2% (369)	33.3% (226)	46.4% (111)	36.7% (337)
Definitely possible	45.7% (285)	39.9% (77)	44.4% (362)	57.9% (393)	43.9% (105)	54.2% (498)
All STIs are curable	(624)	(193)	(817)	(682)	(242)	(924)
Definitely not curable	39.1% (244)	32.1% (62)	37.5% (306)	50.9% (347)	33.9% (82)	46.4% (429)
Probably not curable	44.9% (280)	50.3% (97)	46.1% (377)	34.0% (232)	47.9% (116)	37.7% (348)
Probably curable	11.4% (71)	11.9% (23)	11.5% (94)	9.4% (64)	13.6% (33)	10.5% (97)
Definitely curable	4.6% (29)	5.7% (11)	4.9% (40)	5.7% (39)	4.5% (11)	5.4% (50)
It is possible to be re-infected with STIs even if have had effective treatment	(619)	(193)	(812)	(677)	(240)	(917)
Definitely not possible	5.3% (33)	1.6% (3)	4.4% (36)	6.9% (47)	5.0% (12)	6.4% (59)
Probably not possible	14.5% (90)	13.0% (25)	14.2% (115)	8.9% (60)	10.8% (26)	9.4% (86)
Probably possible	55.3% (342)	65.3% (126)	57.6% (468)	39.4% (267)	57.9% (139)	44.3% (406)

STIs and HIV/AIDS	Baseline data			Follow-up data		
	Pilot	**Control**	**Total**	**Pilot**	**Control**	**Total**
	(N =635)	**(N =195)**	**(N =830)**	**(689)**	**(242)**	**(931)**
Definitely possible	24.9% (154)	20.2% (39)	23.8% (193)	44.8% (303)	26.3% (63)	39.9% (366)
STIs	(635)	(195)	(830)	(679)	(242)	(921)
STIs (HIV/AIDS)	81.4% (517)	87.2% (170)	82.8% (687)	91.9% (624)	85.5% (207)	90.2% (831)
STIs (Gonorrhea)	11.2% (71)	9.7% (19)	10.8% (90)	26.5% (180)	14.9% (36)	23.5% (216)
STIs (Syphilis)	16.7% (106)	13.3% (26)	15.9% (132)	34.3% (233)	17.4% (42)	29.9% (275)
STIs (Hep A)	19.1% (121)	14.4% (28)	18.0% (149)	32.1% (218)	20.7% (50)	29.1% (268)
STIs (Avian flu)	6.3% (40)	5.1% (10)	6.0% (50)	7.5% (51)	5.0% (12)	6.8% (63)
STIs (Hep C)	19.5% (124)	14.9% (29)	18.4% (153)	37.3% (253)	17.4% (42)	32.0% (295)
Other	0.8% (5)	0.0% (0)	0.6% (5)	1.3% (9)	0.0% (0)	1.0% (9)
Don't know	14.5% (92)	10.3% (20)	13.5% (112)	5.7% (39)	11.2% (27)	7.2% (66)
All items correct	3.3% (21)	2.6% (5)	3.1% (26)	14.4% (98)	4.5% (11)	11.8% (109)
HIV transmission: one may protect oneself from HIV by having one uninfected and reliable partner	(631)	(190)	(821)	(677)	(242)	(919)
True	45.2% (285)	37.4% (71)	43.4% (356)	57.6% (390)	49.2% (119)	55.4% (509)
False	10.1% (64)	15.8% (30)	11.4% (94)	18.6% (126)	13.2% (32)	17.2% (158)
Don't know	44.7% (282)	46.8% (89)	45.2% (371)	23.8% (161)	37.6% (91)	27.4% (252)
HIV transmission: one can reduce HIV risk if properly uses condoms during every sexual contact	(627)	(190)	(817)	(680)	(242)	(922)
True	40.4% (253)	30.5% (58)	38.1% (311)	58.4% (397)	46.7% (113)	55.3% (510)
False	15.5% (97)	12.1% (23)	14.7% (120)	21.8% (148)	17.4% (42)	20.6% (190)
Don't know	44.2% (277)	57.4% (109)	47.2% (386)	19.9% (135)	36.0% (87)	24.1% (222)
HIV transmission: healthy - looking person can have HIV	(628)	(192)	(820)	(673)	(237)	(910)
True	54.3% (341)	62.5% (120)	56.2% (461)	68.5% (461)	65.4% (155)	67.7% (616)

STIs and HIV/AIDS	Baseline data			Follow-up data		
	Pilot	Control	Total	Pilot	Control	Total
	(N =635)	(N =195)	(N =830)	(689)	(242)	(931)
False	17.0% (107)	12.0% (23)	15.9% (130)	19.0% (128)	12.7% (30)	17.4% (158)
Don't know	28.7% (180)	25.5% (49)	27.9% (229)	12.5% (84)	21.9% (52)	14.9% (136)
HIV transmission: One can get HIV as a result of a mosquito bite	(629)	(192)	(821)	(680)	(241)	(921)
True	32.0% (201)	37.0% (71)	33.1% (272)	33.7% (229)	43.2% (104)	36.2% (333)
False	26.4% (166)	16.1% (31)	24.0% (197)	44.0% (299)	17.8% (43)	37.1% (342)
Don't know	41.7% (262)	46.9% (90)	42.9% (352)	22.4% (152)	39.0% (94)	26.7% (246)
HIV transmission: one can get HIV by sharing food with HIV infected person	(629)	(191)	(820)	(678)	(242)	(920)
True	26.4% (166)	26.7% (51)	26.5% (217)	26.4% (179)	37.2% (90)	29.2% (269)
False	36.4% (229)	31.4% (60)	35.2% (289)	53.1% (360)	29.8% (72)	47.0% (432)
Don't know	37.2% (234)	41.9% (80)	38.3% (314)	20.5% (139)	33.1% (80)	23.8% (219)
HIV transmission: HIV cannot be transmitted by kissing	(630)	(193)	(823)	(679)	(238)	(917)
True	57.8% (364)	51.8% (100)	56.4% (464)	70.0% (475)	53.8% (128)	65.8% (603)
False	21.1% (133)	20.7% (40)	21.0% (173)	20.8% (141)	28.6% (68)	22.8% (209)
Don't know	21.1% (133)	27.5% (53)	22.6% (186)	9.3% (63)	17.6% (42)	11.5% (105)
HIV transmission: HIV cannot be transmitted by hand shaking	(633)	(192)	(825)	(678)	(242)	(920)
True	74.2% (470)	71.4% (137)	73.6% (607)	81.9% (555)	73.6% (178)	79.7% (733)
False	13.1% (83)	14.1% (27)	13.3% (110)	11.2% (76)	12.0% (29)	11.4% (105)
Don't know	12.6% (80)	14.6% (28)	13.1% (108)	6.9% (47)	14.5% (35)	8.9% (82)
HIV transmission: HIV can be transmitted by sleeping with HIV infected person in one room	(631)	(192)	(823)	(676)	(241)	(917)
True	17.4% (110)	20.3% (39)	18.1% (149)	14.2% (96)	20.3% (49)	15.8% (145)
False	53.1% (335)	47.9% (92)	51.9% (427)	69.7% (471)	52.3% (126)	65.1% (597)

STIs and HIV/AIDS	Baseline data			Follow-up data		
	Pilot	**Control**	**Total**	**Pilot**	**Control**	**Total**
	(N =635)	**(N =195)**	**(N =830)**	**(689)**	**(242)**	**(931)**
Don't know	29.5% (186)	31.8% (61)	30.0% (247)	16.1% (109)	27.4% (66)	19.1% (175)
Abstinence	(626)	(190)	(816)	(676)	(239)	(915)
No risk	40.9% (256)	35.3% (67)	39.6% (323)	54.0% (365)	41.4% (99)	50.7% (464)
Low risk	26.4% (165)	27.9% (53)	26.7% (218)	29.1% (197)	30.1% (72)	29.4% (269)
High risk	10.1% (63)	9.5% (18)	9.9% (81)	6.4% (43)	13.4% (32)	8.2% (75)
Don't know	22.7% (142)	27.4% (52)	23.8% (194)	10.5% (71)	15.1% (36)	11.7% (107)
Safe sex	(626)	(191)	(817)	(677)	(241)	(918)
No risk	28.1% (176)	30.9% (59)	28.8% (235)	32.6% (221)	33.6% (81)	32.9% (302)
Low risk	42.3% (265)	36.6% (70)	41.0% (335)	51.1% (346)	43.6% (105)	49.1% (451)
High risk	8.0% (50)	8.9% (17)	8.2% (67)	9.0% (61)	7.9% (19)	8.7% (80)
Don't know	21.6% (135)	23.6% (45)	22.0% (180)	7.2% (49)	14.9% (36)	9.3% (85)
Using of public toilets	(623)	(191)	(814)	(670)	(239)	(909)
No risk	28.1% (175)	20.9% (40)	26.4% (215)	33.0% (221)	26.4% (63)	31.2% (284)
Low risk	27.6% (172)	27.2% (52)	27.5% (224)	32.5% (218)	25.1% (60)	30.6% (278)
High risk	20.7% (129)	28.8% (55)	22.6% (184)	23.1% (155)	30.5% (73)	25.1% (228)
Don't know	23.6% (147)	23.0% (44)	23.5% (191)	11.3% (76)	18.0% (43)	13.1% (119)
Safe sex with multiple partners	(625)	(189)	(814)	(676)	(240)	(916)
No risk	12.8% (80)	13.2% (25)	12.9% (105)	14.5% (98)	16.7% (40)	15.1% (138)
Low risk	24.2% (151)	19.0% (36)	23.0% (187)	31.7% (214)	23.3% (56)	29.5% (270)
High risk	41.4% (259)	49.2% (93)	43.2% (352)	45.7% (309)	42.9% (103)	45.0% (412)
Don't know	21.6% (135)	18.5% (35)	20.9% (170)	8.1% (55)	17.1% (41)	10.5% (96)
Hug	(629)	(188)	(817)	(671)	(240)	(911)
No risk	52.0% (327)	51.1% (96)	51.8% (423)	63.8% (428)	50.8% (122)	60.4% (550)
Low risk	22.4% (141)	23.9% (45)	22.8% (186)	18.5% (124)	25.4% (61)	20.3% (185)

STIs and HIV/AIDS	Baseline data			Follow-up data		
	Pilot	Control	Total	Pilot	Control	Total
	(N =635)	(N =195)	(N =830)	(689)	(242)	(931)
High risk	9.9% (62)	9.0% (17)	9.7% (79)	7.3% (49)	9.6% (23)	7.9% (72)
Don't know	15.7% (99)	16.0% (30)	15.8% (129)	10.4% (70)	14.2% (34)	11.4% (104)
Use someone else's razor	(631)	(192)	(823)	(671)	(242)	(913)
No risk	9.6% (60)	9.5% (18)	9.5% (78)	9.4% (63)	8.7% (21)	9.2% (84)
Low risk	26.0% (163)	25.9% (49)	25.9% (212)	26.5% (178)	18.6% (45)	24.4% (223)
High risk	44.4% (279)	49.7% (94)	45.7% (373)	53.7% (360)	56.2% (136)	54.3% (496)
Don't know	20.1% (126)	14.8% (28)	18.8% (154)	10.4% (70)	16.5% (40)	12.0% (110)
Needle/syringe sharing	(624)	(189)	(813)	(677)	(241)	(918)
No risk	4.0% (25)	1.1% (2)	3.3% (27)	5.0% (34)	6.2% (15)	5.3% (49)
Low risk	4.2% (26)	4.8% (9)	4.3% (35)	3.1% (21)	2.5% (6)	2.9% (27)
High risk	84.0% (524)	86.2% (163)	84.5% (687)	85.5% (579)	85.1% (205)	85.4% (784)
Don't know	7.9% (49)	7.9% (15)	7.9% (64)	6.4% (43)	6.2% (15)	6.3% (58)
Unprotected sex	(630)	(190)	(820)	(677)	(242)	(919)
No risk	5.4% (34)	3.7% (7)	5.0% (41)	5.5% (37)	7.4% (18)	6.0% (55)
Low risk	5.9% (37)	5.3% (10)	5.7% (47)	6.2% (42)	3.7% (9)	5.5% (51)
High risk	74.8% (471)	77.9% (148)	75.5% (619)	80.4% (544)	81.8% (198)	80.7% (742)
Don't know	14.0% (88)	13.2% (25)	13.8% (113)	8.0% (54)	7.0% (17)	7.7% (71)
Breastfeeding	(633)	(192)	(825)	(673)	(242)	(915)
No risk	9.3% (59)	4.2% (8)	8.1% (67)	10.4% (70)	10.7% (26)	10.5% (96)
Low risk	10.3% (65)	9.4% (18)	10.1% (83)	15.3% (103)	8.7% (21)	13.6% (124)
High risk	51.2% (324)	60.4% (116)	53.3% (440)	58.8% (396)	52.9% (128)	57.3% (524)
Don't know	29.2% (185)	26.0% (50)	28.5% (235)	15.5% (104)	27.7% (67)	18.7% (171)
Blood transfusion	(632)	(191)	(823)	(668)	(242)	(910)
No risk	2.5% (16)	2.1% (4)	2.4% (20)	3.7% (25)	2.5% (6)	3.4% (31)

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STIs and HIV/AIDS	Baseline data			Follow-up data		
	Pilot	**Control**	**Total**	**Pilot**	**Control**	**Total**
	(N =635)	**(N =195)**	**(N =830)**	**(689)**	**(242)**	**(931)**
Low risk	6.8% (43)	4.7% (9)	6.3% (52)	7.3% (49)	6.2% (15)	7.0% (64)
High risk	79.3% (501)	82.2% (157)	80.0% (658)	82.8% (553)	81.8% (198)	82.5% (751)
Don't know	11.4% (72)	11.0% (21)	11.3% (93)	6.1% (41)	9.5% (23)	7.0% (64)
Helping a bleeding person	(629)	(187)	(816)	(669)	(240)	(909)
No risk	16.4% (103)	13.9% (26)	15.8% (129)	16.7% (112)	8.8% (21)	14.6% (133)
Low risk	25.4% (160)	20.3% (38)	24.3% (198)	32.9% (220)	28.3% (68)	31.7% (288)
High risk	27.5% (173)	30.5% (57)	28.2% (230)	33.8% (226)	34.6% (83)	34.0% (309)
Don't know	30.7% (193)	35.3% (66)	31.7% (259)	16.6% (111)	28.3% (68)	19.7% (179)
Sharing of household dishes	(628)	(188)	(816)	(671)	(242)	(913)
No risk	27.4% (172)	19.1% (36)	25.5% (208)	38.6% (259)	20.7% (50)	33.8% (309)
Low risk	23.4% (147)	29.8% (56)	24.9% (203)	32.5% (218)	29.3% (71)	31.7% (289)
High risk	22.3% (140)	23.4% (44)	22.5% (184)	16.5% (111)	29.3% (71)	19.9% (182)
Don't know	26.9% (169)	27.7% (52)	27.1% (221)	12.4% (83)	20.7% (50)	14.6% (133)
Piercing	(630)	(189)	(819)	(670)	(242)	(912)
No risk	15.9% (100)	12.7% (24)	15.1% (124)	12.2% (82)	9.9% (24)	11.6% (106)
Low risk	24.1% (152)	33.9% (64)	26.4% (216)	31.3% (210)	33.1% (80)	31.8% (290)
High risk	24.9% (157)	24.3% (46)	24.8% (203)	42.4% (284)	32.6% (79)	39.8% (363)
Don't know	35.1% (221)	29.1% (55)	33.7% (276)	14.0% (94)	24.4% (59)	16.8% (153)
Tattoo	(630)	(189)	(819)	(671)	(242)	(913)
No risk	18.9% (119)	16.9% (32)	18.4% (151)	11.9% (80)	17.4% (42)	13.4% (122)
Low risk	29.4% (185)	36.5% (69)	31.0% (254)	33.5% (225)	31.8% (77)	33.1% (302)
High risk	28.9% (182)	32.3% (61)	29.7% (243)	46.1% (309)	36.4% (88)	43.5% (397)
Don't know	22.9% (144)	14.3% (27)	20.9% (171)	8.5% (57)	14.5% (35)	10.1% (92)
Birth of child from HIV-positive mother	(629)	(192)	(821)	(673)	(241)	(914)

STIs and HIV/AIDS	Baseline data			Follow-up data		
	Pilot	**Control**	**Total**	**Pilot**	**Control**	**Total**
	(N =635)	**(N =195)**	**(N =830)**	**(689)**	**(242)**	**(931)**
No risk	3.8% (24)	1.0% (2)	3.2% (26)	4.2% (28)	3.3% (8)	3.9% (36)
Low risk	13.7% (86)	14.6% (28)	13.9% (114)	16.6% (112)	11.6% (28)	15.3% (140)
High risk	62.5% (393)	58.3% (112)	61.5% (505)	67.0% (451)	63.5% (153)	66.1% (604)
Don't know	20.0% (126)	26.0% (50)	21.4% (176)	12.2% (82)	21.6% (52)	14.7% (134)
Surgery	(624)	(191)	(815)	(670)	(240)	(910)
No risk	10.3% (64)	12.0% (23)	10.7% (87)	12.7% (85)	12.5% (30)	12.6% (115)
Low risk	28.5% (178)	27.2% (52)	28.2% (230)	30.7% (206)	23.8% (57)	28.9% (263)
High risk	26.1% (163)	26.7% (51)	26.3% (214)	40.3% (270)	35.4% (85)	39.0% (355)
Don't know	35.1% (219)	34.0% (65)	34.8% (284)	16.3% (109)	28.3% (68)	19.5% (177)
Blood brotherhood	(631)	(190)	(821)	(672)	(241)	(913)
No risk	8.9% (56)	11.1% (21)	9.4% (77)	8.8% (59)	10.8% (26)	9.3% (85)
Low risk	17.0% (107)	20.0% (38)	17.7% (145)	18.3% (123)	16.2% (39)	17.7% (162)
High risk	45.6% (288)	37.9% (72)	43.8% (360)	56.4% (379)	49.4% (119)	54.5% (498)
Don't know	28.5% (180)	31.1% (59)	29.1% (239)	16.5% (111)	23.7% (57)	18.4% (168)

Annex 6: Data Tables – Descriptive Statistics (Assessment of HLC Lessons)

Table 14: Students' assessment of HLC lessons

Question	Topic (N)	Biology %(n)				PE %(n)				Total %(n)			
		1	2	3	4	1	2	3	4	1	2	3	4
Quality of lesson (1.Bad; 2.Partly good; 3.Good; 4.Very good)	Tobacco (59)		15.0 (3)	25.0(5)	60.0(12)		30.8(12)	15.4(6)	53.8(21)		25.4(15)	18.6(11)	55.9(33)
	Alcohol (82)			22.7(15)	77.3(51)			62.5(10)	37.5(6)			30.5(25)	69.5(57)
	Drug use (241)	0.0 (0)	8.6(10)	38.8(45)	52.6(61)	3.2(4)	18.4(23)	40.0(50)	38.4(48)	1.7(4)	13.7(33)	39.4(95)	45.2(109)
	HIV (89)	1.6 (1)	16.1(10)	24.2(15)	58.1(36)	0.0(0)	0.0(0)	14.8(4)	85.2(23)	1.1(1)	11.2(10)	21.3(19)	66.3(59)
	STIs (21)		4.8(1)	4.8(1)	90.5(19)						4.8(1)	4.8(1)	90.5(19)
	Assertion (20)					5.0(1)	20.0(4)	35.0(7)	40.0(8)	5.0(1)	20.0(4)	35.0(7)	40.0(8)
	Early age pregnancy (21)			9.5(2)	90.5(19)							9.5(2)	90.5(19)
	Gender and sex (32)					6.3(2)	6.3(2)	59.4(19)	28.1(9)	6.3(2)	6.3(2)	59.4(19)	28.1(9)
Satisfaction with the lesson (1. Dissatisfied; 2. Partly satisfied; 3. Satisfied; 4. Very satisfied)	Tobacco (58)		15.0(3)	40.0(8)	45.0(9)		23.7(9)	31.6(12)	44.7(17)		20.7(12)	34.5(20)	44.8(26)
	Alcohol (82)		1.5(1)	28.8(19)	69.7(46)		6.3(1)	62.5(10)	31.3(5)		2.4(2)	35.4(29)	62.2(51)
	Drug use (240)	0.0 (0)	9.5(11)	42.2(49)	48.3(56)	6.5(8)	16.9(21)	37.9(47)	38.7(48)	3.3(8)	13.3(32)	40.0(36)	43.3(104)
	HIV (89)	1.6 (1)	16.1(10)	24.2(15)	58.1(36)	0.0(0)	0.0(0)	11.1(3)	88.9(24)	1.1(1)	11.2(10)	20.2(18)	67.4(60)
	STIs (21)		4.8(1)	9.5(2)	85.7(18)						4.8(1)	9.5(2)	85.7(18)
	Assertion (20)					5.0(1)	30.0(6)	20.0(4)	45.0(9)	5.0(1)	30.0(6)	20.0(4)	45.0(9)
	Early age pregnancy (21)			23.8(5)	76.2(16)							23.8(5)	76.2(16)
	Gender and sex (32)					6.3(2)	25.0(8)	56.3(18)	12.5(4)	6.30(2)	25.0(8)	56.3(18)	12.5(4)

Question	Topic (N)	Biology %(n)				PE %(n)				Total %(n)			
		1	2	3	4	1	2	3	4	1	2	3	4
Assessment of information received (1.Bad; 2.Partly good; 3.Good; 4.Very good)	Tobacco (58)		20.0(4)	35.0(7)	45.0(9)		23.7(9)	34.2(13)	42.1(16)		22.4(13)	34.5(20)	43.1(25)
	Alcohol (82)	0.0 (0)	1.5(1)	36.4(24)	62.1(41)	6.3(1)	18.8(3)	43.8(7)	31.3(5)	1.2(1)	4.9(4)	37.8(31)	56.1(46)
	Drug use (240)	0.0 (0)	12.9(15)	44.8(52)	42.2(49)	5.6(7)	15.3(19)	50.0(62)	29.0(36)	2.9(7)	14.2(34)	47.5(114)	35.4(85)
	HIV (89)	1.6 (1)	14.5(9)	37.1(23)	46.8(29)	0.0(0)	0.0(0)	22.2(6)	77.8(21)	1.1(1)	10.1(9)	32.6(29)	56.2(50)
	STIs (21)		4.8(1)	33.3(7)	61.9(13)						4.8(1)	33.3(7)	61.9(13)
	Assertion (20)					5.0(1)	25.0(5)	40.0(8)	30.0(6)	5.00(1)	25.0(5)	40.0(8)	30.0(6)
	Early age pregnancy (21)		4.8(1)	14.3(3)	81.0(17)						4.8(1)	14.3(3)	81.0(17)
	Gender and sex (32)						31.3(10)	43.8(14)	25.0(8)		31.3(10)	43.8(14)	25.0(8)
Attitude towards information received (1.Bad; 2.Partly good; 3.Good; 4.Very good)	Tobacco (59)	15.0(3)	25.0(5)	20.0(4)	40.0(8)	5.1(2)	23.1(9)	35.9(14)	35.9(14)	8.5(5)	23.7(14)	30.5(18)	37.3(22)
	Alcohol (81)		7.7(5)	40.0(26)	52.3(34)		18.8(3)	43.8(7)	37.5(6)		9.9(8)	40.7(33)	49.4(40)
	Drug use (240)	8.6(10)	15.5(18)	43.1(50)	32.8(38)	7.3(9)	17.7(22)	44.4(55)	30.6(38)	7.9(19)	16.7(40)	43.8(105)	31.7(76)
	HIV (87)	5.0(3)	25.0(15)	26.7(16)	43.3(26)	0.0(0)	3.7(1)	18.5(5)	77.8(21)	3.4(3)	18.4(16)	24.1(21)	54.0(47)
	STIs (21)		4.8(1)	38.1(8)	57.1(12)						4.8(1)	38.1(8)	57.1(12)
	Assertion (20)						40.0(8)	40.0(8)	20.0(4)		40.0(8)	40.0(8)	20.0(4)
	Early age pregnancy (21)			28.6(6)	71.4(15)							28.6(6)	71.4(15)
	Gender and sex (32)						25.0(8)	53.1(17)	21.9(7)		25.0(8)	53.1(17)	21.9(7)
Comfortable theme (1. Not comfortable; 2. Partly comfortable; 3. Comfortable 4. Very comfortable)	Tobacco (59)	0.0(0)	20.0(4)	45.0(9)	35.0(7)	2.6(1)	38.5(15)	38.5(15)	20.5(8)	1.7(1)	32.2(19)	40.7(24)	25.4(15)
	Alcohol (82)		4.5(3)	57.6(38)	37.9(25)		18.8(3)	43.8(7)	37.5(6)		7.3(6)	54.9(45)	37.8(31)
	Drug use (238)	4.3(5)	20.9(24)	47.0(54)	27.8(32)	5.7(7)	17.9(22)	49.6(61)	26.8(33)	5.0(12)	19.3(46)	48.3(115)	27.3(65)
	HIV (89)	3.2(2)	25.8(16)	40.3(25)	30.6(60)	0.0(0)	7.4(2)	40.7(11)	51.9(14)	2.2(2)	20.2(18)	40.4(36)	37.1(33)
	STIs (21)		4.8(1)	57.1(12)	38.1(8)						4.8(1)	57.1(12)	38.1(8)
	Assertion (20)					5.0(1)	25.0(5)	40.0(8)	30.0(6)	5.00(1)	25.0(5)	40.0(8)	30.0(6)
	Early age pregnancy (21)		9.5(2)	38.1(8)	52.4(11)						9.5(2)	38.1(8)	52.4(11)
	Gender and sex (32)						40.6(13)	50.0(16)	9.4(3)		40.6(13)	50.0(16)	9.4(3)

Question	Topic (N)	Biology %(n)				PE %(n)				Total %(n)			
		1	2	3	4	1	2	3	4	1	2	3	4
Engagement in lessons (1.Bad; 2.Partly good; 3.Good; 4.Very good)	Tobacco (59)		10.0(2)	55.0(11)	35.0(7)		20.5(8)	51.3(20)	28.2(11)		16.9(10)	52.5(31)	30.5(18)
	Alcohol (82)		15.2(10)	31.8(21)	53.0(35)		12.5(2)	43.8(7)	43.8(7)		14.6(12)	34.1(28)	51.2(42)
	Drug use (241)	2.6(3)	25.0(29)	44.0(51)	28.4(33)	7.2(9)	17.6(22)	48.8(61)	26.4(33)	5.0(12)	21.2(51)	46.5(112)	27.4(66)
	HIV (89)	1.6(1)	24.2(15)	40.3(25)	33.9(21)	0.0(0)	3.7(1)	22.2(6)	74.1(20)	1.1(1)	18.0(16)	34.8(31)	46.1(41)
	STIs (21)	4.8(1)	9.5(2)	23.8(5)	61.9(13)					4.8(1)	9.5(2)	23.8(5)	61.9(13)
	Assertion (20)						25.0(5)	40.0(8)	35.0(7)		25.0(5)	40.0(8)	35.0(7)
	Early age pregnancy (21)		4.8(1)	47.6(10)	47.6(10)						4.8(1)	47.6(10)	47.6(10)
	Gender and sex (32)					12.5(4)	53.1(17)	28.1(9)	6.3(2)	12.5(4)	53.1(17)	28.1(9)	6.3(2)
Desire to learn more (1.Very low 2. Low; 3.High; 4.Very high)	Tobacco (59)	5.0(1)	10.0(2)	55.0(11)	30.0(6)	5.1(2)	17.9(7)	51.3(20)	25.6(10)	5.1(3)	15.3(9)	52.5(31)	27.1(16)
	Alcohol (82)	1.5(1)	6.1(4)	50.0(33)	42.4(28)	6.3(1)	12.5(2)	31.3(5)	50.0(8)	2.4(2)	7.3(6)	46.3(38)	43.9(36)
	Drug use (240)	3.4(4)	15.5(18)	50.9(59)	30.2(35)	5.6(7)	6.5(8)	58.1(72)	29.8(37)	4.6(11)	10.8(26)	54.6(131)	30.0(72)
	HIV (89)		17.7(11)	40.3(25)	41.9(26)		0.0(0)	22.2(6)	77.8(21)		12.4(11)	34.8(31)	52.8(47)
	STIs (21)		4.8(1)	38.1(8)	57.1(12)						4.8(1)	38.1(8)	57.1(12)
	Assertion (20)						20.0(4)	45.0(9)	35.0(7)		20.0(4)	45.0(9)	35.0(7)
	Early age pregnancy (20)			45.0(9)	55.0(11)							45.0(9)	55.0(11)
	Gender and sex (32)					6.3(2)	18.8(6)	50.0(16)	25.0(8)	6.3(2)	18.8(6)	50.0(16)	25.0(8)
Feel comfortable to ask questions (1. Not comfortable; 2. Partly comfortable; 3. Comfortable 4. Very comfortable)	Tobacco (59)	0.0(0)	10.0(2)	55.0(11)	35.0(7)	5.1(2)	33.3(13)	41.0(16)	20.5(8)	3.4(2)	25.4(15)	45.8(27)	25.4(15)
	Alcohol (82)		7.6(5)	43.9(29)	48.5(32)		12.5(2)	56.3(9)	31.3(5)		8.5(7)	46.3(38)	45.1(37)
	Drug use (238)	1.7(2)	15.7(18)	64.3(74)	18.3(21)	2.4(3)	20.3(25)	60.2(74)	17.1(21)	2.1(5)	18.1(43)	62.2(148)	17.6(42)
	HIV (88)	1.6(1)	23.0(14)	47.5(29)	27.9(17)	3.7(1)	3.7(1)	33.3(9)	59.3(16)	2.3(2)	17.0(15)	43.2(38)	37.5(33)
	STIs (21)			66.7(14)	33.3(7)							66.7(14)	33.3(7)
	Assertion (20)					5.0(1)	5.0(1)	50.0(10)	40.0(8)	5.0(1)	5.0(1)	50.0(10)	40.0(8)
	Early age pregnancy (21)		19.0(4)	38.1(8)	42.9(9)						19.0(4)	38.1(8)	42.9(9)
	Gender and sex (32)					3.1(1)	21.9(7)	65.6(21)	9.4(3)	3.1(1)	21.9(7)	65.6(21)	9.4(3)

Question	Topic (N)	Biology %(n)				PE %(n)				Total %(n)			
		1	2	3	4	1	2	3	4	1	2	3	4
Comfortable for teacher to discuss a theme (1. Not comfortable; 2. Partly comfortable; 3. Comfortable 4. Very comfortable)	Tobacco (59)	0.0(0)	5.0(1)	40.0(8)	55.0(11)	2.6(1)	21.1(8)	42.1(16)	34.2(13)	1.7(1)	15.5(9)	41.4(24)	41.4(24)
	Alcohol (82)		1.5(1)	39.4(26)	59.1(39)		25.0(4)	31.3(5)	43.8(7)		6.1(5)	37.8(31)	56.1(46)
	Drug use (235)	1.7(2)	9.6(11)	58.3(67)	30.4(35)	7.5(9)	9.2(11)	55.0(66)	28.3(34)	4.7(11)	9.4(22)	56.3(133)	29.4(69)
	HIV (88)	1.6(1)	16.4(10)	45.9(28)	36.1(22)	0.0(0)	7.4(2)	29.6(8)	63.0(17)	1.1(1)	13.6(12)	40.9(36)	44.3(39)
	STIs (21)		4.8(1)	28.6(6)	66.7(14)						4.8(1)	28.6(6)	66.7(14)
	Assertion (20)						30.0(6)	35.0(7)	35.0(7)		30.0(6)	35.0(7)	35.0(7)
	Early age pregnancy (21)		9.5(2)	14.3(3)	76.2(16)						9.5(2)	14.3(3)	76.2(16)
	Gender and sex (32)					9.4(3)	18.8(6)	53.1(17)	18.8(6)	9.4(3)	18.8(6)	53.1(17)	18.8(6)
Activities (1.Boring; 2. Appropriate; 3. Entertaining)	Tobacco (59)	5.0(1)	30.0(6)	65.0(13)		12.8(5)	35.9(14)	51.3(20)		10.2(6)	33.9(20)	55.9(33)	
	Alcohol (81)		27.3(18)	72.7(48)			33.3(5)	66.7(10)			28.4(23)	71.6(58)	
	Drug use (240)	2.6(3)	56.9(66)	40.5(47)		13.7(17)	39.5(49)	46.8(58)		8.3(20)	47.9(115)	43.8(105)	
	HIV (87)	11.7(7)	43.3(26)	45.0(27)		0.0(0)	44.4(12)	55.6(15)		8.0(7)	43.7(38)	48.3(42)	
	STIs (21)	4.8(1)	14.3(3)	81.0(17)						4.8(1)	14.3(3)	81.0(17)	
	Assertion (20)						35.0(7)	65.0(13)			35.0(7)	65.0(13)	
	Early age pregnancy (20)		52.4(11)	47.6(10)							52.4(11)	47.6(10)	
	Gender and sex (32)					21.9(7)	53.1(17)	25.0(8)		21.9(7)	53.1(17)	25.0(8)	

Table 15: Teachers' assessment of HLC lessons

Question	Topic (N)	Biology %(n)				PE %(n)				Total %(n)			
		1	2	3	4	1	2	3	4	1	2	3	4
Capacity for conducting this lesson (1.Bad; 2.Partly good; 3.Good; 4.Very good)	Tobacco (3)		100.0(1)	0.0(0)			50.0(1)	50.0(1)			66.7(2)	33.3(1)	
	Alcohol (5)		66.7(2)	33.3(1)			50.0(1)	50.0(1)			60.0(3)	40.0(2)	
	Drug use (10)		25.0(1)	75.0(3)			33.3(2)	66.7(4)			30.0(3)	70.0(7)	
	HIV (4)		100.0(2)	0.0(0)			50.0(1)	50.0(1)			75.0(3)	25.0(1)	
	STIs (1)		100.0(1)								100.0(1)		

Question	Topic (N)	Biology %(n)				PE %(n)				Total %(n)			
		1	2	3	4	1	2	3	4	1	2	3	4
	Assertion (1)							100.0(1)				100.0(1)	
	Early age pregnancy (1)		100.0(1)								100.0(1)		
	Gender and sex (1)							100.0(1)				100.0(1)	
Easy to conduct this lesson (1. Hard; 2. Partly hard; 3. Easy; 4. Very easy)	Tobacco (3)		100.0(1)	0.0(0)			0.0(0)	100.0(2)			33.3(1)	66.7(2)	
	Alcohol (5)		33.3(1)	66.7(2)			0.0(0)	100.0(2)			20.0(1)	80.0(4)	
	Drug use (11)		20.0(1)	60.0(3)	20.0(1)		33.3(2)	66.7(4)	0.0(0)		27.3(3)	63.6(7)	9.1(1)
	HIV (4)			100.0(2)				100.0(2)				100.0(4)	
	STIs (1)			100.0(1)								100.0(1)	
	Assertion (1)							100.0(1)				100.0(1)	
	Early age pregnancy (1)		100.0(1)								100.0(1)		
	Gender and sex (1)							100.0(1)				100.0(1)	
Satisfaction with conducted lesson (1. Dissatisfied; 2. Partly satisfied; 3. Satisfied; 4. Very satisfied)	Tobacco (3)		100.0(1)	0.0(0)			50.0(1)	50.0(1)			66.7(2)	33.3(1)	
	Alcohol (5)		66.7(2)	33.3(1)			50.0(1)	50.0(1)			60.0(3)	40.0(2)	
	Drug use (10)		40.0(2)	60.0(3)			20.0(1)	80.0(4)			30.0(3)	70.0(7)	
	HIV (4)		50.0(1)	50.0(1)			50.0(1)	50.0(1)			50.0(2)	50.0(2)	
	STIs (1)		100.0(1)								100.0(1)		
	Assertion (1)						100.0(1)				100.0(1)		
	Early age pregnancy (1)		100.0(1)								100.0(1)		
	Gender and sex (1)								100.0(1)				100.0(1)
Assessment of standard lessons' guide (1.Bad; 2.Partly good; 3.Good; 4.Very good)	Tobacco (3)		100.0(1)		0.0(0)		50.0(1)		50.0(1)		66.7(2)		33.3(1)
	Alcohol (5)			100.0(3)				100.0(2)				100.0(5)	
	Drug use (10)		25.0(1)	75.0(3)	0.0(0)		0.0(0)	16.7(1)	83.3(5)		10.0(1)	40.0(4)	50.0(5)
	HIV (4)			50.0(1)	50.0(1)			50.0(1)	50.0(1)			50.0(2)	50.0(2)
	STIs (1)		100.0(1)								100.0(1)		
	Assertion (1)							100.0(1)					100.0(1)
	Early age pregnancy (1)				100.0(1)								100.0(1)

Question	Topic (N)	Biology %(n)				PE %(n)				Total %(n)			
		1	2	3	4	1	2	3	4	1	2	3	4
	Gender and sex (1)								100.0(1)				100.0(1)
Awareness of this lesson's topics (1. Have poor knowledge; 2. Partly know; 3. Well know; 4. Very well know)	Tobacco (3)			100.0(1)	0.0(0)			0.0()1	100.0(2)			33.3(1)	66.7(2)
	Alcohol (5)		33.3(1)	33.3(1)	33.3(1)		0.0(0)	50.0(1)	50.0(1)		20.0(1)	40.0(2)	40.0(2)
	Drug use (11)		20.0(1)	60.0(3)	20.0(1)		16.7(1)	66.7(4)	16.7(1)		18.2(2)	63.6(7)	18.2(2)
	HIV (4)		0.0(0)	50.0(1)	50.0(1)		100.0(2)	0.0(0)	0.0(0)		50.0(2)	25.0(1)	25.0(1)
	STIs (1)			100.0(1)								100.0(1)	
	Assertion (1)								100.0(1)				100.0(1)
	Early age pregnancy (1)			100.0(1)								100.0(1)	
	Gender and sex (1)								100.0(1)				100.0(1)
To feel comfortable discussing today's topics (1. Not comfortable; 2. Partially comfortable; 3. Comfortable; 4. Very Comfortable)	Tobacco (3)		100.0(1)		0.0(0)		50.0(1)		50.0(1)		66.7(2)		33.3(1)
	Alcohol (5)			100.0(3)				100.0(2)				100.0(5)	
	Drug use (11)		40.0(2)	40.0(2)	20.0(1)		16.7(1)	50.0(3)	33.3(2)		27.3(3)	45.5(5)	27.3(3)
	HIV (4)			100.0(2)	0.0(0)			50.0(1)	50.0(1)			75.0(3)	25.0(1)
	STIs (1)			100.0(1)								100.0(1)	
	Assertion (1)						100.0(1)				100.0(1)		
	Early age pregnancy (1)			100.0(1)								100.0(1)	
	Gender and sex (1)							100.0(1)				100.0(1)	
Students understandability (1.Bad; 2.Partly good; 3.Good; 4.Very good)	Tobacco (3)		100.0(1)	0.0(0)	0.0(0)		0.0(0)	50.0(1)	50.0(1)		33.3(1)	33.3(1)	33.3(1)
	Alcohol (5)			100.0(3)	0.0(0)			50.0(1)	50.0(1)			80.0(4)	20.0(1)
	Drug use (11)		0.0(0)	80.0(4)	20.0(1)		16.7(1)	50.0(3)	33.3(2)		9.1(1)	63.6(7)	27.3(3)
	HIV (4)		50.0(1)	50.0(1)			50.0(1)	50.0(1)			50.0(2)	50.0(2)	
	STIs (1)			100.0(1)								100.0(1)	
	Assertion (1)						100.0(1)				100.0(1)		
	Early age pregnancy (1)				100.0(1)								100.0(1)
	Gender and sex (1)								100.0(1)				100.0(1)
Involvement rate	Tobacco (3)		100.0(1)	0.0(0)	0.0(0)		0.0(0)	50.0(1)	50.0(1)		33.3(1)	33.3(1)	33.3(1)

Question	Topic (N)	Biology %(n)				PE %(n)				Total %(n)			
		1	2	3	4	1	2	3	4	1	2	3	4
for girls (1.Bad; 2.Partly good; 3.Good; 4.Very good)	Alcohol (5)		33.3(1)	33.3(1)	33.3(1)		50.0(1)	0.0(0)	50.0(1)		40.0(2)	20.0(1)	40(2)
	Drug use (11)		40.0(2)	40.0(2)	20.0(1)		16.7(1)	83.3(5)	0.0(0)		27.3(3)	63.6(7)	9.1(1)
	HIV (4)		50.0(1)	50.0(1)			50.0(1)	50.0(1)			50.0(2)	50.0(2)	
	STIs (1)		100.0(1)								100.0(1)		
	Assertion (1)						100.0(1)				100.0(1)		
	Early age pregnancy (1)			100.0(1)								100.0(1)	
	Gender and sex (1)								100.0(1)				100.0(1)
Involvement rate for boys (1.Bad; 2.Partly good; 3.Good; 4.Very good)	Tobacco (3)		0.0(0)	100.0(1)	0.0(0)		50.0(1)	0.0(0)	50.0(1)		33.3(1)	33.3(1)	33.3(1)
	Alcohol (5)		33.3(1)	33.3(1)	33.3(1)		50.0(1)	0.0(0)	50.0(1)		40.0(2)	20.0(1)	40.0(2)
	Drug use (11)		40.0(2)	40.0(2)	20.0(1)		16.7(1)	83.3(5)	0.0(0)		27.3(3)	63.6(7)	9.1(1)
	HIV (4)		50.0(1)	50.0(1)			50.0(1)	50.0(1)			50.0(2)	50.0(2)	
	STIs (1)		100.0(1)								100.0(1)		
	Assertion (1)						100.0(1)				100.0(1)		
	Early age pregnancy (1)		100.0(1)								100.0(1)		
	Gender and sex (1)								100.0(1)				100.0(1)
Activities (1. Very hard for students; 2. Appropriate; 3. Very easy for students)	Tobacco (3)		100.0(1)				100.0(2)				100.0(3)		
	Alcohol (5)		66.7(2)	33.3(1)			100.0(2)	0.0(0)			80.0(4)	20.0(1)	
	Drug use (10)		100.0(4)	0.0(0)			66.7(4)	33.3(2)			80.0(8)	20.0(2)	
	HIV (4)		100.0(2)				100.0(2)				100.0(4)		
	STIs (1)		100.0(1)								100.0(1)		
	Assertion (1)						100.0(1)				100.0(1)		
	Early age pregnancy (1)		100.0(1)								100.0(1)		
	Gender and sex (1)						100.0(1)				100.0(1)		