



Southern and Eastern Africa Consortium
for Monitoring Educational Quality

Pupil and Teacher Knowledge about HIV and AIDS in Uganda

www.sacmeq.org

Introduction

The HIV and AIDS pandemic presents a major challenge for the social and economic development of nations located in Sub-Saharan Africa. The Joint United Nations Programme on HIV and AIDS (UNAIDS, 2010: 180) has estimated that in this region there are more than 20 million people living with HIV, and that around 10 percent of these people are below the age of 15 years.

In 2009 governments and international donors together provided US\$ 15.9 billion for the global AIDS response (UNAIDS, 2010: 146). At this point of time there is no known cure for AIDS, and a vaccine for HIV still appears to be in a development phase.

The first case of HIV infection in Uganda was diagnosed in 1982. In 2009 around 1.2 million Ugandans were living with HIV, and around 200,000 of them were children under the age of 15 years (UNAIDS, 2010: 180).

AIDS is widely accepted as being one of the main causes of a dramatic increase in the number of orphans. The estimated number of orphans aged 0-17 years due to AIDS in Uganda rose from 1.1 million in 2001 to 1.2 million in 2009 (UNAIDS, 2010: 186).

The UNAIDS organization has reported that the HIV prevalence rate in Uganda for adults aged 15-49 years in 2009 was 6.5% (UNAIDS, 2010: 181). This represented a small improvement on estimated rates from earlier years. This trend has been partly attributed to reductions in high-risk behaviour – but may also have been influenced by changes in the methodology for estimating HIV infection rates that occurred during 2007 (UNAIDS, 2007: 3).

The United Nations has recognized that the education sector has a critical role to play in terms of the delivery of effective HIV and AIDS prevention education programmes.

The Education Sector Response

The Ugandan Ministry of Education has responded to challenges in this area by implementing education initiatives that aim to ensure that all young people possess the basic knowledge that is required to make informed decisions about behaviours related to HIV and AIDS that will protect and promote health.

The primary school level has been identified as a crucial access point for HIV and AIDS prevention education programmes because most children attend these schools, and because of the importance of improving the knowledge of children about HIV and AIDS before they become sexually active and/or involved in high-risk behaviours.

The SACMEQ Research Programme

The Southern and Eastern Africa Consortium for Monitoring Educational Quality (SACMEQ) is a network of 15 Ministries of Education: Botswana, Kenya, Lesotho, Malawi, Mauritius, Mozambique, Namibia, Seychelles, South Africa, Swaziland, Tanzania (Mainland), Tanzania (Zanzibar), Uganda, Zambia and Zimbabwe.

SACMEQ's main mission is to undertake integrated research and training activities that: (a) provide educational planners with the technical skills required to monitor and evaluate the quality of their own education systems, and (b) generate information that can be used to plan the quality of education.

The SACMEQ Consortium has undertaken three large-scale cross-national studies of the quality of education in Southern and Eastern Africa: the SACMEQ I Project (1995-1999), the SACMEQ II Project (2000-2004), and the SACMEQ III project (2007-2011).

The SACMEQ III Project included an additional data collection concerned with a detailed assessment of pupil and teacher knowledge about HIV and AIDS.

A New HIV and AIDS Knowledge Indicator

In 2006 SACMEQ's Governing Body (the SACMEQ Assembly of Ministers of Education) expressed concern about the need for a well-designed indicator that could be used to guide informed debate about the effectiveness of HIV and AIDS prevention education programmes. The one indicator that has been widely used to judge these programmes (known as the "United Nations General Assembly (UNGASS) HIV-AIDS Knowledge Indicator for Young People") was considered to lack validity because it was based on a short list of five test questions that were problematic in terms of wording complexity, content coverage, and reliability.

The SACMEQ Ministers asked the SACMEQ III Project Research Teams to address information needs in this area by developing a valid SACMEQ HIV-AIDS Knowledge Test that would be suitable for administration to Grade 6 pupils (who have average ages of 13.5 years across the SACMEQ countries and 14.1 years in Uganda) and their teachers.

The SACMEQ HIV-AIDS Knowledge Test (HAKT)

The SACMEQ HIV-AIDS Knowledge Test (HAKT) was designed to provide a valid assessment of pupil and teacher knowledge about HIV and AIDS with respect to the topics specified in official school curriculum frameworks, textbooks, and teaching materials used by the SACMEQ countries.

The 86 HAKT test items covered 43 curriculum topics, and they were focused on an assessment of "the basic knowledge about HIV and AIDS that is required for protecting and promoting health". These topics were grouped into five main areas: definitions and terminology; transmission mechanisms; avoidance behaviours; diagnosis and treatment; and myths and misconceptions.

The HAKT was administered in late 2007 to 61,396 Grade 6 pupils and 8,026 teachers in 2,779 schools across the 15 SACMEQ countries. In Uganda the HAKT was administered to 5,307 Grade 6 pupils and 744 Grade 6 teachers in 264 schools.

The advanced psychometric analyses applied to these data indicated that the HAKT had a high level of reliability, and that it was suitable for placing pupils

and their teachers on a common scale of knowledge about HIV and AIDS.

The performance of pupils and teachers on the HAKT was assessed by applying two complementary scoring procedures:

(a) "**HAKT Scores**" – these were Rasch-scaled scores on the HAKT that were transformed to a Grade 6 pupil average of 500 and standard deviation of 100.

(b) "**HAKT Minimal Knowledge Scores**" – these were dichotomous scores that indicated whether pupils or teachers reached (score=1) or did not reach (score=0) SACMEQ's "minimal" HIV and AIDS knowledge benchmark (defined as mastery of half of the official curriculum assessed by the HAKT).

Table 1 contains summarized information about these two scores for Grade 6 pupils and teachers in Uganda's four education regions and the SACMEQ countries. Two sets of figures have been presented in the table for these groups of respondents: (a) the Average HAKT Scores, and (b) the Average HAKT Minimal Knowledge Scores (these proportions were expressed as percentages in the table).

For example, the third row of figures in **Table 1** indicated that: (a) the average HAKT Scores for pupils and teachers in Western Region were 512 and 682, respectively, and (b) the percentages of pupils and teachers in Western Region that reached the minimal level of knowledge on the HAKT were 42% and 92%, respectively.

Table 2 contains the average HAKT Scores for groups of Uganda's Grade 6 pupils defined by four demographic variables: Socioeconomic Status, Location, Gender, and Age.

For example, the first row of figures in **Table 2** indicated that pupils from high socioeconomic status families had a slightly higher average HAKT Score (494.8) than pupils from low socioeconomic status families (483.0), and that the difference between these two averages (11.9) did not exceed two standard errors of sampling (15.0).

Note that SACMEQ Projects use pupils as the units of analysis. Therefore, teacher statistics such as means refer to teacher characteristics associated with the average pupil.

Pupil Knowledge Levels

(a) SACMEQ Countries

The average HAKT Scores for Grade 6 pupils provided a means of making **relative comparisons** of knowledge levels among SACMEQ countries. The results presented for countries in the first column of **Table 1** showed that: (a) Grade 6 pupil averages ranged from a low of 453 in Mauritius to a high of 576 in Tanzania, and (b) the Uganda pupil average of 489 was 11 score points below the SACMEQ overall average of 500.

The average HAKT Minimal Knowledge Scores for Grade 6 pupils provided a means of making **normative comparisons** of knowledge levels among SACMEQ countries. (**NOTE:** *It was expected that 100% of pupils in all SACMEQ countries should reach the minimal knowledge level.*)

The results presented for countries in the second column of **Table 1** showed that: (a) the percentages of pupils with minimal knowledge ranged from 17% in Mauritius to 70% in Tanzania, and (b) the percentage of Uganda's pupils that reached the minimum knowledge level was a low value of 33%. That is, the percentages of pupils reaching the minimal knowledge level in Uganda and all other SACMEQ countries were far below the expected level of 100%.

The results described above indicated that major alarm bells should be ringing in Uganda because in 2007 two thirds (67%) of the Grade 6 pupils lacked the minimal knowledge about HIV and AIDS that is required for protecting and promoting their health. In all other SACMEQ countries the situation was also very serious - with a majority of Grade 6 pupils in most countries lacking minimal knowledge.

(b) Uganda's Education Regions

The figures for Uganda's education regions presented in the first column of **Table 1** showed regional variations in average Grade 6 pupil knowledge about HIV and AIDS.

The relatively high average HAKT Score of 512 for Western Region placed it just below the two highest scoring SACMEQ countries (Tanzania and Swaziland). In contrast, the average HAKT Score for Northern Region (474) placed it just above the two lowest scoring SACMEQ countries (Mauritius and Lesotho).

The average HAKT Minimal Knowledge Scores for Uganda's education regions in the second column of

Table 1 also illustrated regional variations in Grade 6 pupil knowledge about HIV and AIDS. The percentage of pupils in Western Region (42%) that reached SACMEQ's minimal knowledge benchmark was considerably higher than the percentage observed for Northern Region (27%).

Teacher Knowledge Levels

In the third and fourth columns of figures in **Table 1** the average HAKT Scores and average HAKT Minimal Knowledge Scores have been presented for teachers in the SACMEQ countries and Uganda's education regions. The figures showed that the average HAKT Score for teachers exceeded 700 for most SACMEQ countries, and for SACMEQ overall it reached 746 – almost 250 points above the Grade 6 pupil average of 500.

In Uganda, the average HAKT Score for teachers was 708 at the national level, and was in the range of around 680 to 740 for all education regions. The percentages of teachers that reached SACMEQ's minimal knowledge benchmark of mastering at least one half of the official school curriculum were around 100% for all SACMEQ countries and all Uganda education regions.

The major contrast between the high knowledge levels of teachers and the low knowledge levels of their Grade 6 pupils came as a surprise to Uganda's SACMEQ Research Team. They had assumed that teachers with high levels of knowledge about HIV and AIDS should be able to transmit this important information to their pupils.

This assumption was obviously faulty and certainly requires further research in order to provide an explanation for the substantial "knowledge gap" between pupils and teachers.

Demographic Differences in Knowledge

In **Table 2** some research results have been presented in order to examine demographic differences in the HIV and AIDS knowledge of Uganda's Grade 6 pupils. Four variables were used to generate groups of students for making comparisons of average HAKT Scores. Differences in group averages were greater than two standard errors (**) for the Location variable – with pupils from urban locations demonstrating much higher knowledge about HIV and AIDS. No significant differences were observed for pupil groups defined by Socioeconomic Status, Gender, and Age.

Four Research-Based Conclusions

1. Low Knowledge Levels

Knowledge levels about HIV and AIDS among two thirds (67%) of Uganda's Grade 6 pupils during 2007 were below SACMEQ's "minimal" knowledge benchmark (which was defined as mastery of at least half of the official school curriculum). In addition, the average score of Uganda's Grade 6 pupils on the SACMEQ HIV-AIDS Knowledge Test was 11 score points below the SACMEQ overall average.

The Ministry of Education should acknowledge that HIV and AIDS prevention education programmes need to be monitored and evaluated to ensure they are working effectively.

2. Regional Differences in Knowledge

There were substantial differences in average Grade 6 pupil HIV and AIDS knowledge levels among education regions in Uganda.

The Ministry of Education should: (a) investigate the reasons for these regional differences, and (b) find out why knowledge levels were so low in Northern Region.

3. A Pupil-Teacher "Knowledge Gap"

There was a large HIV and AIDS "knowledge gap" between Uganda's Grade 6 pupils and their teachers.

The Ministry of Education should: (a) investigate why well-informed teachers were not able to transmit this important knowledge to most of their pupils, and (b) review pre-service and in-service training programmes to ensure that teachers are trained in both subject matter knowledge ("what to teach about HIV and AIDS"), and pedagogy ("how to teach about HIV and AIDS").

4. Demographic Differences in Knowledge

There were significant differences in knowledge about HIV and AIDS between groups of Uganda's Grade 6 pupils defined by Location.

The Ministry of Education should expand and intensify the delivery of HIV and AIDS prevention education programmes in rural and isolated communities.

A Concluding Comment

Uganda is often held up as a model for Africa in the fight against HIV and AIDS. Strong government leadership, broad-based partnerships, and effective public education campaigns all contributed to a decline in the number of people living with HIV in the 1990s.

However, it is clear from the SACMEQ III Project research results that the time has come to take stock of the impact of current HIV and AIDS prevention education programmes for young people in Uganda. The SACMEQ results showed that two-thirds of Grade 6 pupils in Uganda during 2007 did not have the minimal level of knowledge about HIV and AIDS that was required to preserve and promote their health.

This was indeed alarming because Grade 6 pupils in Uganda (with an average age of 14.1 years) are entering a stage of physical and mental development where they may become sexually active, and/or may choose to become involved in high-risk behaviours.

The Ministry of Education should therefore take immediate action to: (a) address the research-based conclusions presented above, and (b) facilitate the development and implementation of more effective HIV and AIDS prevention education programmes that focus on the upper grades of primary school.

Authors

Frank Ssenbulya
(fbear65@gmail.com)

Irene Lubega
(ilubega@gmail.com)

References

UNAIDS (2007). AIDS Epidemic Update: December 2007. New York: Joint UN Programme on HIV-AIDS

UNAIDS (2010). Global Report. New York: Joint UN Programme on HIV-AIDS.

SACMEQ wishes to acknowledge the financial assistance provided by the Ministry of Foreign Affairs of the Government of the Netherlands in support of SACMEQ's research and training programmes.

Table 1
Pupil and Teacher Scores on the
SACMEQ HIV-AIDS Knowledge Test (HAKT)

	PUPILS		TEACHERS	
	HAKT Score	Reached Minimal Level (%)	HAKT Score	Reached Minimal Level (%)
TANZANIA	576	70	724	99
SWAZILAND	531	52	759	100
Uganda: Western	512	42	682	92
MALAWI	512	43	714	99
KENYA	509	39	793	100
MOZAMBIQUE	507	40	741	99
SOUTH AFRICA	503	35	781	100
NAMIBIA	502	36	764	99
ZANZIBAR	501	38	657	94
BOTSWANA	499	32	782	100
UGANDA	489	33	708	98
ZAMBIA	488	35	744	98
SEYCHELLES	488	25	789	99
Uganda: Central	487	32	712	100
Uganda: Eastern	483	32	698	98
ZIMBABWE	477	30	785	99
Uganda: Northern	474	27	742	100
LESOTHO	465	19	751	98
MAURITIUS	453	17	698	98
SACMEQ	500	36	746	99

Figure 1
Variation in pupil knowledge about HIV and
AIDS among SACMEQ school systems
and among regions in Uganda

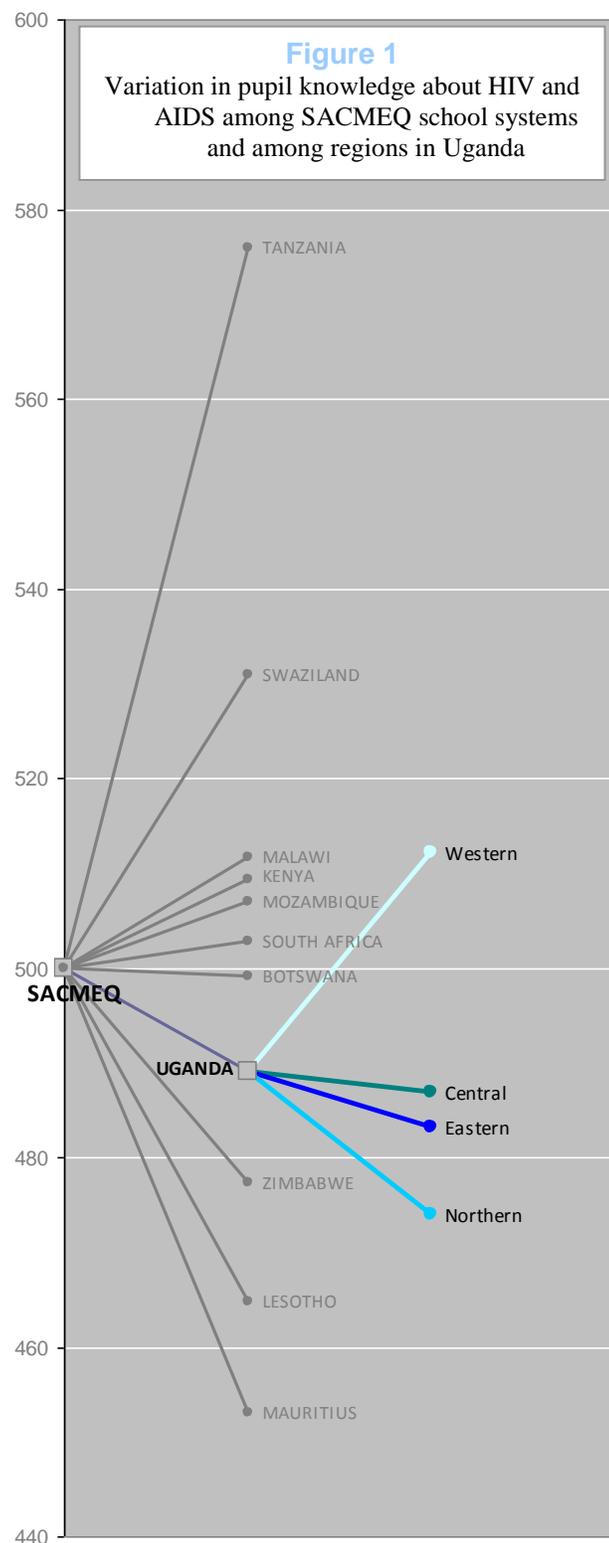


Table 2
Average HAKT Scores for Uganda Pupils
across Four Demographic Variables

DEMOGRAPHIC VARIABLE	1st Group	2nd Group	Diff (SE)
Socioeconomic Status (Low/High)	483.0	494.8	11.9 (7.5)
Location (Isolated-Rural-Town/City)	485.7	525.2	39.5 (10.2)**
Gender (Males/Females)	494.8	483.4	-11.4 (6.6)
Age (Younger/Older)	495.5	481.9	-13.6 (7.0)

Diff = Difference