



Southern and Eastern Africa Consortium
for Monitoring Educational Quality

Pupil and Teacher Knowledge about HIV and AIDS in Zimbabwe

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 Zimbabwe was diagnosed in 1985. In 2009 around 1.2 million Zimbabweans 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 Zimbabwe rose from 760,000 in 2001 to one million in 2009 (UNAIDS, 2010: 186).

The UNAIDS organization has reported that the HIV prevalence rate in Zimbabwe for adults aged 15-49 years in 2009 was 14.3% (UNAIDS, 2010: 181). This represented a major 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; Zimbabwe National Health Strategy, 2009: 20).

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

Zimbabwe's Ministry of Education, Sport, Arts, and Culture has responded to challenges in this area by implementing education initiatives that aim to ensure that all young people possess the knowledge 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 had 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 12.4 years in Zimbabwe) 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 Zimbabwe the HAKT was administered to 3,021 Grade 6 pupils and 274 Grade 6 teachers in 155 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 Zimbabwe's 10 education provinces 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 second row of figures in **Table 1** indicated that: (a) the average HAKT Scores for pupils and teachers in Harare province were 532 and 770, respectively, and (b) the percentages of pupils and teachers in Harare province that reached the minimal level of knowledge on the HAKT were 53% and 97%, respectively.

Table 2 contains the average HAKT Scores for groups of Zimbabwe'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 higher average HAKT Score (503.1) than pupils from low socioeconomic status families (451.3), and that the difference between these averages (51.8) exceeded two standard errors of sampling (18.2).

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 Zimbabwe pupil average of 477 was well below the SACMEQ 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 Zimbabwe's pupils that reached the minimum knowledge level was a low value of 30%. That is, the percentages of pupils reaching the minimal knowledge level in Zimbabwe 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 Zimbabwe because a majority of Grade 6 pupils (70%) lack the minimal knowledge about HIV and AIDS that is required for protecting and promoting their health. The situation was also very serious in other SACMEQ countries - with a majority of Grade 6 pupils in most countries lacking minimal knowledge.

(b) Zimbabwe's Education Provinces

The figures for Zimbabwe's education provinces presented in the first column of **Table 1** showed large provincial variations in Grade 6 pupil knowledge about HIV and AIDS. The very high average HAKT Score of 532 for Harare Province placed it just below the highest scoring SACMEQ country (Tanzania). Bulawayo Province with an average score of 523 also achieved a relatively high average HAKT Score. In contrast, the average HAKT Scores for Manicaland (447), Mashonaland East (444), Matabeleland North (431), and Matabeleland South (413) Provinces were all far below the SACMEQ average of 500, and also below the lowest scoring SACMEQ country (Mauritius).

The average HAKT Minimal Knowledge Scores for Zimbabwe's education provinces in the second column

of **Table 1** also highlighted substantial provincial variations in Grade 6 pupil knowledge about HIV and AIDS. The percentage of pupils in Harare Province (53%) that reached SACMEQ's minimal knowledge benchmark was around nine times higher than was observed for Matabeleland South Province (6%).

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 Zimbabwe's education provinces.

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 Zimbabwe, the average HAKT Score for teachers was 785 at the national level, and exceeded 750 for all education provinces. In addition 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 Zimbabwe education provinces.

The major contrast between the very high knowledge levels of teachers and the very low knowledge levels of their Grade 6 pupils came as a complete surprise to Zimbabwe's SACMEQ Research Team. They had assumed that teachers with high levels of basic 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 Zimbabwe'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 Socioeconomic Status, Location and Age variables – with pupils from wealthier backgrounds, pupils in city locations, and younger pupils demonstrating much higher knowledge about HIV and AIDS. No significant differences were observed for pupil groups defined by Gender.

Four Research-Based Conclusions

1. Low Pupil Knowledge Levels

Knowledge levels about HIV and AIDS among 70% of Zimbabwe's Grade 6 pupils in 2007 were below SACMEQ's "minimal" benchmark (which was defined as mastery of at least half of the official school curriculum).

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

2. Large Provincial Differences in Knowledge

There were large differences in Grade 6 pupil knowledge levels about HIV and AIDS among education provinces in Zimbabwe.

The Ministry of Education, Sport, Arts, and Culture should: (a) investigate the reasons for these differences, and (b) find out why knowledge levels were so very low in Manicaland, Mashonaland East, Matabeleland North, and Matabeleland South Provinces.

3. Pupil-Teacher "Knowledge Gap"

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

The Ministry of Education, Sport, Arts, and Culture should investigate why well-informed teachers were not able to transmit this important knowledge to most of their pupils.

4. Demographic Differences in Knowledge

There were significant differences in knowledge about HIV and AIDS between groups of Zimbabwe's Grade 6 pupils defined by Socioeconomic Status, Location and Age.

The Ministry of Education, Sport, Arts, and Culture should expand and intensify the delivery of HIV and AIDS prevention education programmes in poor communities and isolated communities.

The Ministry of Education, Sport, Arts, and Culture should also investigate why younger Grade 6 pupils appear to know more about HIV and AIDS than older Grade 6 pupils.

A Concluding Comment

All children need to have the basic knowledge about HIV and AIDS that is required to protect and promote health. However, it is clear from the SACMEQ III Project research results that more than two-thirds of the Grade 6 pupils in Zimbabwe during 2007 did not have this minimal level of knowledge.

This is indeed alarming because Grade 6 pupils in Zimbabwe (average age 12.4 years) are entering a stage of mental and physical development where they may become sexually active, and/or may choose to become involved in high-risk behaviours.

The Ministry of Education, Sport, Arts, and Culture 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

Zedias Chitiga
(zedmchitiga@yahoo.co.uk)

Absalom Chinoona
(absalomchinoona@yahoo.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.

Zimbabwe (2009). National Health Strategy 2009-2013. Harare: Government of Zimbabwe.

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
Zimbabwe: Harare	532	53	770	97
SWAZILAND	531	52	759	100
Zimbabwe: Bulawayo	523	47	773	100
MALAWI	512	43	714	99
KENYA	509	39	793	100
MOZAMBIQUE	507	40	741	99
Zimbabwe: Midland	505	38	814	100
SOUTH AFRICA	503	35	781	100
NAMIBIA	502	36	764	99
ZANZIBAR	501	38	657	94
BOTSWANA	499	32	782	100
Zimbabwe: Masvingo	496	39	771	100
UGANDA	489	33	708	98
ZAMBIA	488	35	744	98
SEYCHELLES	488	25	789	99
Zimbabwe: Mashonaland West	482	29	788	100
ZIMBABWE	477	30	785	99
Zimbabwe: Mashonaland Central	476	27	780	96
LESOTHO	465	19	751	98
MAURITIUS	453	17	698	98
Zimbabwe: Manicaland	447	18	753	100
Zimbabwe: Mashonaland East	444	17	852	100
Zimbabwe: Matabeleland North	431	17	793	100
Zimbabwe: Matabeleland South	413	6	787	100
SACMEQ	500	36	746	99

Figure 1
Variation in pupil knowledge about HIV and
AIDS among SACMEQ countries and
among provinces in Zimbabwe

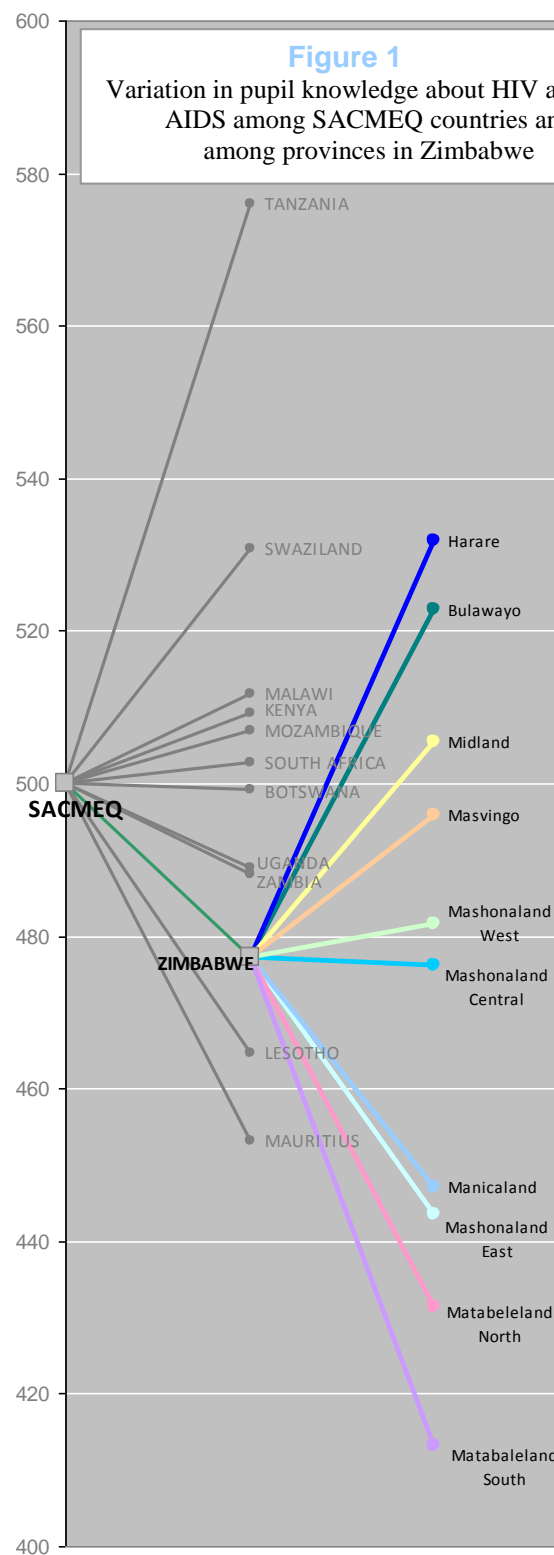


Table 2
Average HAKT Scores for Zimbabwe Pupils
across Four Demographic Variables

DEMOGRAPHIC VARIABLE	1st Group	2nd Group	Diff (SE)
Socioeconomic Status (Low/High)	451.3	503.1	51.8 (9.1)**
Location (Isolated-Rural-Town/City)	464.4	535.6	71.2 (9.5)**
Gender (Males/Females)	475.6	478.5	2.9 (8.8)
Age (Younger/Older)	494.6	459.1	-31.5 (8.7)**

Diff = Difference

NOTE: (a) Median splits used to form two groups for the Socioeconomic Status and Age variables.

NOTE: (b) (**) = Difference greater than two standard errors.