



Southern and Eastern Africa Consortium
for Monitoring Educational Quality

Pupil and Teacher Knowledge about HIV and AIDS in Lesotho

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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 Lesotho was diagnosed in 1986. In 2009 around 290,000 Basotho were living with HIV and around 30,000 of them were children under the age of 15 years (UNAIDS, 2010: 180). Lesotho now has the third highest HIV adult prevalence rate in the world. (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 Lesotho rose from 52,000 in 2001 to 130,000 in 2009 (UNAIDS, 2010: 186).

The UNAIDS organization has reported that the HIV prevalence rate in Lesotho for adults aged 15-49 years in 2009 was 23.6% (UNAIDS, 2010: 181). This represented a slight 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 Lesotho Ministry of Education and Training 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 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 14.0 years in Lesotho) 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 Lesotho the HAKT was administered to 4,240 Grade 6 pupils and 315 Grade 6 teachers in 182 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 that was assessed by the HAKT).

Table 1 contains summarized information about these two scores for Grade 6 pupils and teachers in Lesotho's 10 education districts 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 eleventh row of figures in **Table 1** indicated that: (a) the average HAKT Scores for pupils and teachers in Lesotho's Leribe District were 488 and 778, respectively, and (b) the percentages of pupils and teachers in Leribe District that reached the minimal level of knowledge on the HAKT were 26% and 97%, respectively.

Table 2 contains the average HAKT Scores for groups of Lesotho'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 (481.7) than pupils from low socioeconomic status families (450.0), and that the difference between these averages (31.8) exceeded two standard errors of sampling (13.2).

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 Lesotho pupil average of 465 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 Lesotho's pupils that reached the minimum knowledge level was a very low value of 19%. That is, the percentages of pupils reaching the minimal knowledge level in Lesotho 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 Lesotho because in 2007 a majority of Grade 6 pupils (81%) lacked the minimal knowledge about HIV and AIDS that is required for protecting and promoting health. In all other SACMEQ countries the situation was also very serious.

(b) Lesotho's Education Districts

The figures for Lesotho's education districts presented in the first column of **Table 1** and **Figure 1** were all far below the SACMEQ average of 500. These average HAKT Scores also showed substantial between-district variations in Grade 6 pupil knowledge about HIV and AIDS. The highest average of 488 for Leribe District was almost 60 score points above average of 429 for Butha-Buthe District. In addition, two of Lesotho's districts (Berea and Butha-Buthe) had average HAKT Scores below the lowest scoring SACMEQ country (Mauritius).

The average HAKT Minimal Knowledge Scores for Lesotho's education districts in the second column of **Table 1** also highlighted substantial between-district

variations in Grade 6 pupil knowledge about HIV and AIDS. For example, the percentage of pupils in Leribe District (26%) that reached SACMEQ's minimal knowledge benchmark was almost three times higher than was observed for Butha-Buthe District (9%).

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 Lesotho's education districts. 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 score points above the Grade 6 pupil average of 500.

In Lesotho, the average HAKT Score for teachers was 751 at the national level, and for Lesotho's districts the average HAKT Scores ranged from around 700 to around 780. 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 of Lesotho's education districts.

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 Lesotho'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 Lesotho's Grade 6 pupils. Four variables were used to generate groups of pupils for making comparisons of average HAKT Scores. Differences in group averages were greater than two standard errors (**) for Socioeconomic Status, Location and Age groups – 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 over three quarters (81%) of Lesotho's Grade 6 pupils during 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 and Training 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 District Differences in Knowledge

There were substantial differences in Grade 6 pupil knowledge levels about HIV and AIDS among education districts in Lesotho.

The Ministry of Education and Training should: (a) investigate the reasons for these differences, and (b) find out why knowledge levels were so very low in Berea District and Butha-Buthe District.

3. A Pupil-Teacher "Knowledge Gap"

There was a large HIV and AIDS "knowledge gap" between Lesotho'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 levels about HIV and AIDS among groups of Lesotho Grade 6 pupils defined by Socioeconomic Status, Location and Age.

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

The Ministry of Education and Training 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 their health. However, it is clear from the SACMEQ III Project research results that more than three quarters of Grade 6 pupils in Lesotho during 2007 did not have this minimal level of knowledge.

This was indeed alarming because Grade 6 pupils in Lesotho (average age 14.0 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 and Training 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.

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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
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
Lesotho: Leribe	488	26	778	97
ZAMBIA	488	35	744	98
SEYCHELLES	488	25	789	99
Lesotho: Maseru	479	23	750	100
ZIMBABWE	477	30	785	99
Lesotho: Quthing	471	21	742	100
Lesotho: Thaba-Tseka	470	21	758	100
LESOTHO	465	19	751	98
Lesotho: Qacha's Nek	463	19	768	100
Lesotho: Mohale Hoek	458	19	698	93
Lesotho: Mokhotlong	455	13	735	100
Lesotho: Mafeteng	454	13	766	100
MAURITIUS	453	17	698	98
Lesotho: Berea	448	16	736	98
Lesotho: Butha-Buthe	429	9	766	100
SACMEQ	500	36	746	99

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

DEMOGRAPHIC VARIABLE	1st Group	2nd Group	Diff (SE)
Socioeconomic Status (Low/High)	450.0	481.7	31.8 (6.6)**
Location (Isolated-Rural-Town/City)	459.8	490.5	30.7 (9.6)**
Gender (Males/Females)	461.7	467.3	5.6 (6.2)
Age (Younger/Older)	472.0	455.7	-16.3 (5.9)**

Diff = Difference

Figure 1
Variation in pupil knowledge about HIV and
AIDS among SACMEQ school systems
and among districts in Lesotho

