Assessing the impact of HIV/AIDS on the University of Botswana

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The article reports findings on the impact of HIV/AIDS on the University of Botswana. Data from multiple sources was used to ascertain prevalence rates, morbidity and mortality among students and staff. Prevalence rates and future projections on morbidity could not be ascertained for both students and staff because of the absence of reliable data. The main conclusion drawn is that mortality rates for industrial and junior support staff are almost as high as that of the national adult population (15-49 years). Mortality rates for students and academic staff are however much lower than that projected for equivalent age groups in the national population. The study recommends the setting up of a comprehensive management information system supported by action-oriented research to inform institutional planning and to help comprehend how the epidemic will affect the university.

Introduction

HIV/AIDS threatens to reduce the effectiveness and efficiency of educational systems in high prevalence countries in Sub-Saharan Africa. It is estimated that 7 out of 10 new HIV/AIDS cases and 83% of AIDS deaths are in Africa. Southern Africa alone accounts for 69% of the total AIDS deaths in the region (IIEP, 2000). Botswana is reported to have the highest national HIV prevalence rate in the world with 17% of the total population infected in 1999. It is projected that about 22% of the population will be infected by 2010. The prevalence rate among adults aged 15-59 was estimated to be 29% in 1999 and, without any change in sexual behaviour, it is expected to rise to 38% by 2010. The prevalence rate is currently highest among the 25-29 year age group. A recent report on the demographic impacts of the AIDS epidemic in Botswana estimates AIDS-related death among adults aged 15-59 to be have been around 2% in 1999, which is projected to increase to nearly 5% in 2010 (see AbT, 2000). The highest rates of AIDS-related deaths are in the 30-34-age cohort (3.72% in 2000, increasing to 9.21 % in 2010)

The pandemic will affect both the demand and supply of education. Attrition rates due to deaths, illness, financial constraints, demand for home care of the sick and other family and social circumstances will reduce enrolment rates. The costs of training academic and support staff due to premature deaths, and costs incurred in the form of employee benefits during illness or after death will divert funds from projects focused on educational improvement and growth. This will result in the reduced capacity of the educational system to provide education and training services.

The devastating impact on education signals the need for higher education institutional managers to become more than ever responsive evaluators and university academic staff to engage in decision oriented as well as pure and applied research. The pandemic is also demonstrating to evaluators and researchers that a multiple method research and evaluation approach is essential to address the affected peoples' value system as well as addressing the 'how many', 'how much' and 'how often questions'. In this article I report findings on the impact of HIV/AIDS on the University of Botswana, based on a study in which a multiple method research approach was used. I further propose monitoring evaluation framework in

which managers as lead evaluators collaborate with academic staff committed to decision oriented research to direct planning and practice.

Methodological issues

Carrying out an assessment of the impact of HIV/AIDS on an organisation such as UB is a complex exercise that requires a variety of data to estimate both the overall magnitude and the nature of the impacts. Essential 'hard', quantitative data will only be available where an institution has a well-established management information system. Although the University has several databases, there is no organisational framework that links them together. There are, therefore, major information gaps. In addition, the stigma, secrecy and denial surrounding HIV/AIDS preclude any comprehensive documentation of HIV/AIDS.

In studying HIV/AIDS, it is also very important to obtain the perceptions of individuals as well as making use of the limited hard data that is usually available. Perceptions are particularly important because they provide key insights into how individuals have responded to the AIDS crisis and how this affects the translation of strategies and other interventions to tackle the crisis. Estimations and future projection of an HIV/AIDS impact study are also based on assumptions about behaviour change and the culture and values of an institutional community.

A mixed method design using quantitative and qualitative approaches and was therefore utilised. This entailed collecting data from a variety of primary and secondary sources, in particular interviews and semi-structured focus group discussions, and all relevant university records.

The main research questions and the sources of data are presented in Table 1.

Table 1: *Main research questions and sources of data*

Questions	Sources and Methods
What has been done to date to prevent the spread of HIV/AIDS at UB, to provide medical and psychological support and care for those infected and affected by HIV/AIDS?	Review of current prevention programs and structures: • The STD/HIV/AIDS committee • Five year strategic plan • The HIV/AIDS policy • The Clinic • Counselling Centre • Students Against HIV/AIDS • Condom distribution and use
What is the HIV/AIDS situation at the University i.e. HIV prevalence rates, AIDS cases, and overall mortality and morbidity rates?	• University Clinic Counselling Centre data on HIV/AIDS • BOMAID data on morbidity • Public Relations Office data on mortality • Interviewees on HIV/AIDS
What is the likely impact of HIV/AIDS on Students and Staff	• Students and key informants interviewees • Students' absentee forms • Annual examination results books • Database on staff absenteeism

University response to date

UB's response to date has focused mainly on interventions to prevent the spread of HIV among staff and students. The university clinic, counselling centre and the recently established Wellness Centre provide education, treatment and supportive care mainly for students. There is also an STI/HIV/AIDS Committee responsible for mainstreaming HIV/AIDS throughout the university. However, the heavy workloads of committee

members result in poor meeting attendance. Support staff complains that the committee is not 'visible' and that they are not properly represented. The Committee has developed an HIV/AIDS Strategic Plan 2000-2005 and is also formulating an HIV/AIDS policy. The main weakness of the strategic plan is that it does not deal adequately with staff and student support.

A group called *Students Against HIV/AIDS* is active in disseminating education, communication and information to students and communities outside the University, especially to primary and secondary school students. Its membership is, however, very small (only 0.5% of total student enrolment). The University clinic provides medical support to students and is involved in a number of HIV/AIDS prevention activities, including condom distribution. The Counselling Centre provides counselling for students and staff, but it is under-utilised because of lack of confidentiality, perceived inappropriate counselling by students, stigmatisation associated with seeking counselling and poor overall awareness of the services provided. There are also efforts by some lecturers to educate students about HIV/AIDS through the curriculum and research. However, these efforts are limited and depend largely on the interest of the individual lecturer.

Despite the prevention campaigns by the university, student sexual behaviour has not changed. The numbers of student pregnancies and students with STDs are increasing. Students attribute the lack of change of behaviour to;

- Unplanned sexual encounters under the influence of liquor
- Un-negotiated sexual intercourse between female and male partners
- Societal pressure on both male and female students to have a first child
- Sexual violence on campus
- Societal pressure on females to look for a husband
- A culture of promiscuity for university student age group
- Social life that include partying and moonlight activities
- Sex in exchange for money, grades and other favours

Impact on students

The student population consist of 80 % full time and approximately 20% partime students. Approximately 70% of the full time students are in the 20-29 year age group. This age cohort has high HIV prevalence rates (about 41%) high HIV/AIDS mortality rates (about 3% in 1999). Unless where indicated the discussion will focus on full time students.

The greatest impact experienced to date is that of emotional stress, psychological trauma, demoralisation, de-motivation, pain and agony, and fear and anxiety either because of sickness, nursing or the loss of a parent, spouse, sibling, child, relative or friend. These conditions contribute to student absenteeism from classes and withdrawal from the university. For instance, Full time and part time student withdrawal rates due to medical, personal or other reasons increased from 0.75% in 1995/96 to 1.2% in 1999/2000.

Students living with AIDS. There is clearly no robust data on HIV prevalence among students mainly because there is no large scale testing of students. The University Clinic has conducted voluntary testing on students who presented various STDs and HIV related symptoms such as Herpes zoster, persistent cough, weight loss, pneumonia, Bell's-palsy and Karposi's sarcoma/ dermatitis. The results show that out of a total of 179 students tested between 1997 and 2000, 53 students tested positive. This is by no means an indication of the prevalence of HIV/AIDS in the University because of the nature of the sample. These students who are living with AIDS are clearly the key group who will need to be supported by the university community. Without knowing what HIV prevalence rates are among students, it is very difficult to make robust projections of student morbidity over the next

10-15 years. The university nevertheless needs to develop a clear policy concerning students living with AIDS.

Trends in mortality and comparative mortality. A total of 85 students died between 1991/92 and 1999/2000—62 students (73%) from illness, 18 in road accidents, and 5 other accidents. Male students accounted for 56.3% of all deaths. More females than males died from illnesses. Assuming that 90% of the deaths in this age group die of HIV/AIDS (Abt 2000), it can be concluded that there are more females than males dying of HIV/AIDS. The high deaths due to illness among females are not surprising because 35.55% of female HIV/AIDS infections occur between the age of 15 and 19 (Abt 2000).

The annual number of deaths remained at 7-9 between 1991/92 and 1998/1999, but increased sharply in 1999/2000, which is cause for concern. 42.1% of the student deaths occurred in the 20-24-age cohort and 30.3% in the 25-29-age cohort. Students who are dying of HIV/AIDS-related illnesses are almost certainly infected before they reach the university. Relatively large numbers of students are dying in the first and second years, an indication that they were infected in their mid-late teens. This highlights the importance of preventing infection while children are still at secondary school.

Table 2 compares total death rates in the University to projected HIV/AIDS deaths for the 20-24 year age group, the 25-29 age group and students' death at the University of Zambia. Students' deaths at the University of Botswana are much lower than the HIV/AIDS projected deaths for university age equivalent groups and those for the University of Zambia. A possible explanation could be that HIV/AIDS related deaths for those with University education could be much lower than that of equivalent age groups in the population. Differentials between the universities could be explained by the fact that HIV/AIDS started in the Great Lake areas and that Zambia experienced the epidemic much earlier than Botswana.

Table 2: *Student and adult mortality rates, 1991-2000 (deaths/'000)*

Year	UB students (all causes)	Projected AIDS-related, all adults 20-24	Projected AIDS-related, all adults 25-29	University of Zambia
1991	2.2	2.2	2.9	1.5
1992	2.1	3.1	4.3	1.2
1993	1.9	4.3	6.2	2.2
1994	2.2	5.6	8.5	2.3
1995	2.1	7.2	11.4	1.5
1996	1.5	8.8	14.9	4.3
1997	1.2	10.4	18.8	
1998	1.3	12.0	23.2	4.5
1999	2.5	13.4	27.9	

Source: Chilisa B. with Bennell P. (2001) *The Impact of HIV/AIDS on the University of Botswana: Towards a strategic Response.*

Worst case HIV/AIDS scenario. Let us assume that HIV prevalence is the same among students as it is for all young adults in Botswana and no significant behavioural change occurs (increased condom use, fewer sexual partners). Table 3 shows the projected number of students who are likely to die at UB assuming that total student enrolments increase to 13,000 by 2005 and 15,000 by 2010 and the age distribution of the student population remains unchanged.

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Table 3: *Projected number of student deaths at UB, 2000-2010.*

YEAR	Projected Enrolment	PROJECTED DEATHS						
		15-19	20-24	25-29	30-34	35>	Total	Percent Enrolment
2000	11000	2	88	70	41	5	206	1.87
2005	13000	2	121	125	101	58	407	3.13
2010	15000	3	135	147	137	124	546	3.64

Notes: Based on projections of AIDS-related deaths by age cohort made by AbT Associates.

According to these projections, the number of student deaths will increase from 206 in 2000 to over 400 by 2005 and nearly 550 by 2010. The actual number of illness-related deaths recorded in 1999/2000 was 17 and considerably much less than the projected deaths.

Staff morbidity and absenteeism

Staff comprises of academic staff, senior, junior and industrial staff. Nearly 60% of staff is aged under-40 and are, therefore, in the high HIV prevalence age cohorts. Women comprise 50-60% of junior and industrial support staff.

HIV/AIDs prevalence rates among staff is not known. There are signals however that there are some members of staff infected. Statistics based on Botswana Medical Insurance (BOMAD) shows that of the 846 staff on medical aid 17 (2%) had tested HIV/AIDS positive. This number alone calls for a comprehensive AIDS at the Workplace programme.
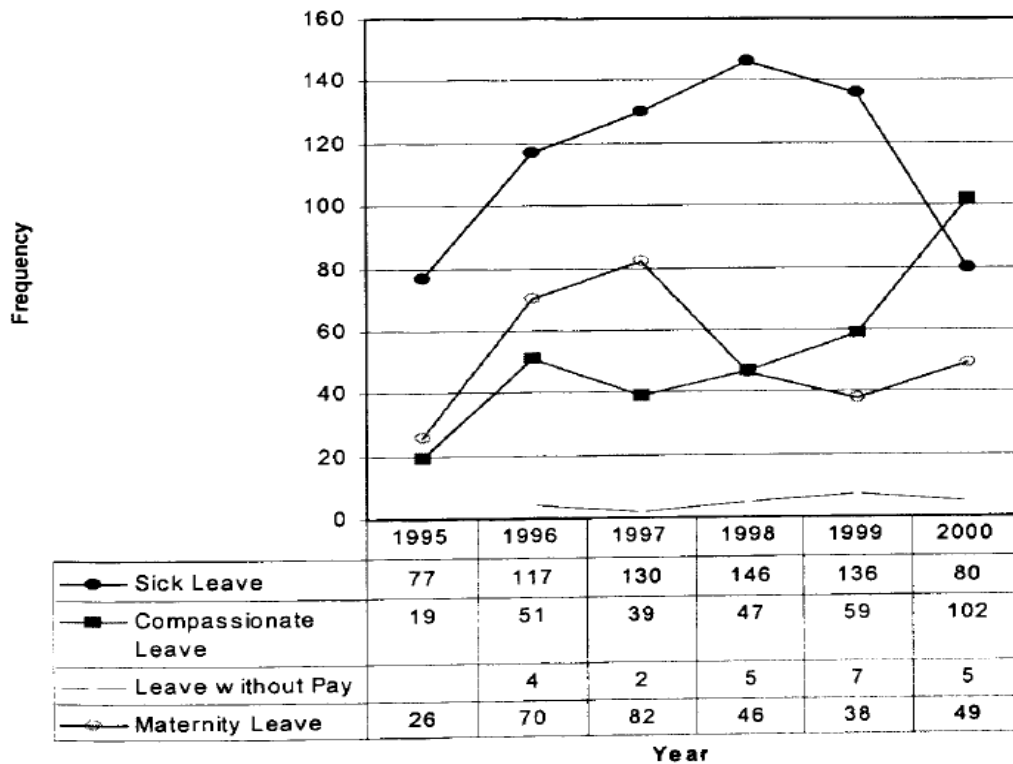
There are also indications that absenteeism due to HIV/AIDS related factors affects work productivity. A trend analysis of staff leave days shows that the number of staff taking compassionate (leave to make arrangements for funerals of relatives and friends, to nurse sick family members and friends) increased from 19 in 1995 to 102 in 2000. The number of staff taking compassionate leave is related to increasing levels of AIDS-related morbidity and mortality. The numbers of staff taking sick leave increased very rapidly up to 1999 but declined sharply in 2000. This may be because more staff now takes anti-retroviral drugs. These drugs prevent opportunistic infections and allow individuals living with AIDS to function normally. On the positive side, the number of women taking maternity leave declined starting from 1998 and has remained consistently low compared to 1997 and 1996. *Refer to Figure 1*. This could be because of greater contraceptive use and/or lower fertility (which is a well-known consequence of HIV infection).

Staff mortality trends. According to university records, a total of 18 full-time academic staff died in the ten year period from 1991 to 2000–1 senior academic, 14 lecturers (including 1 staff development fellow), and 3 tutors3). Most of these deaths were due to illness. Only four of the 14 lecturers were nationals. All three tutors were expatriates. The number of academic deaths at UB is much lower than at the University of Zambia where 43 academics died between 1990 and 19984. Age at death is as follows: 25-29–4, 30-39–2, 40-44–4, 45> 5.

It would appear, therefore, that the impact to date of the AIDS epidemic on academic staff at UB, and particularly nationals, has relatively very limited. Academic mortality rates are well under half the projected AIDS-related mortality rates for the adult population as a whole in 1998/99, which again suggests that the epidemic may have a much lower impact on the university than has been suggested in the media and elsewhere.

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3 Information on deaths among academic staff is available only for full time employees
4 Mortality rates were not calculated in the UNZA study

Figure 1: *Staff leave of absence by reason, 1995-2000*

	1995	1996	1997	1998	1999	2000
Sick Leave	77	117	130	146	136	80
Compassionate Leave	19	51	39	47	59	102
Leave without Pay		4	2	5	7	5
Maternity Leave	26	70	82	46	38	49

Unlike academic staff, mortality rates for junior staff have risen very rapidly in recent years and were nearly two percent in 1999/2000, which is very high. A total of 33 junior staff died employees died between 1991/92 and 1999/2000. Of these, 18 were women. The number of deaths increased from 1 in 1992/93 to 10 in 1999/2000.The majority of deaths were due to illness.

The overall mortality rate for industrial staff, most of whom are poorly educated, low paid, and not members of any medical aid scheme was 1.7 in 1999/200, nearly four times higher than for academic staff. A total of 46 full-time industrial support staff died between 1991/92 and 1999/2000. Of these, 31 (72 %) were women. Again, the majority of deaths were due to illness. Similar mortality rate differentials exist in the public service as a whole in Botswana (see Bennell et al, 2001). Table 3 compares mortality rates among staff and students at UB with those for teaching staff at primary and secondary schools as well as projected AIDS-related deaths for the adult 15-59 population in 2000.5 The three groups with university training (senior secondary school teachers, university academics, and university students) all have similar mortality rates (of between 2-4 per thousand), which are five-ten times less than projected AIDS-related mortality for the adult population as a whole. More research needs to be urgently undertaken in order to identify the reasons for these very large differences in mortality rates.

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5 These mortality rates need to be adjusted for age, location and gender

Table 3: *Mortality rates among teaching staff at primary and secondary schools and UB staff and students, nationals only (deaths/000)*

	Female	*Male*	*All*
Primary teachers	7.2	7.7	7.4
Junior secondary teachers	3.5	5.3	4.4
Senior secondary teachers	2.3	5.1	3.7
University lecturers			2.0
Support staff			17.0
Industrial class			18.0
Students			2.5
Adult population 15-59			20.0

Worst case HIV/AIDS scenario. Table 4 presents the projected number of AIDS-related deaths among UB staff on the assumption that AIDS-related mortality rates will be the same for all categories of staff at UB as is projected to be for the adult population as a whole. It is also assumed that the total number of staff in post remains constant at its 2000 level of 3085 and that the age distribution of staff remains unchanged.

According to these projections, AIDS-related staff deaths will increase from 68 in 2000 to 189 in 2010. The corresponding AIDS-related mortality rates will be 2.2% and 6.1% respectively, which is very high and would have a major impact on the overall staffing situation at the university. However, actual staff deaths (from all causes) at UB in 1999/2000 was 20 from a total of 1,820 full time staff. If it is assumed that 75% if these deaths were AIDS-related, then the (AbT) projections for 2000 are 4-5 times higher than the probable number of AIDS-related deaths that actually occurred.

Table 4: *Projected AIDS-related staff deaths at UB, 2000-2010*

YEAR	*Projected Staff In-post*	*PROJECTED DEATHS*								*Percent total*
		20-24	25-29	30-34	35-39	40-44	45-49	50>	Total	
2000	3085	1	9	36	13	6	2	1	68	2.2
2005	3085	1	13	75	34	15	5	1	144	4.7
2010	3085	1	13	87	48	30	8	2	189	6.1

Source: Calculated from projected AIDS-related mortality rates by age cohort supplied by AbT Associates

Conclusion

The impact to date of the AIDS epidemic on academic staff and students at the University Botswana has been relatively limited and, with respect to students, is certainly much less than the sensational claims that have appeared in the local media. If UB students have the risk profile as the wider adult population, then adjusting for age, a total of 208 (1.9% of total enrolments) should have died in 2000. However, the actual number of illness-related deaths could not have exceeded 66 and was probably considerably less than this. Similarly, only 18 academic staff (and just four nationals) died throughout the 1990s. UB staff who have been seriously affected by HIV/AIDS are junior and industrial support staff. Both groups have high illness-related mortality rates, which are roughly the same as projected rates for the adult population as a whole. There appears, therefore, to be a strong negative correlation between AIDS-related mortality and occupational status. Better-educated occupations (such as university lecturers) may have changed their sexual behaviour and/or are living longer because they can access anti-retroviral drugs. These differentials in illness-related mortality point to the need for AIDS prevention programmes to target less privileged groups in urban and rural areas.

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Finally, despite lower than expected student mortality, it also appears that there has been no major change in student sexual behaviour. With such high levels of high-risk behaviour, HIV prevalence rates should be as high, if not higher, than the population at large. What is clear though is that there is an urgent need for a risk and behaviour assessment that can inform HIV education and prevention interventions as well as institutional planning.

Research and information needs. The University HIV/AIDS strategic plan needs to be based on a precise assessment of HIV prevalence rates among both staff and students. There is thus need for an anonymous, voluntary testing among stratified random samples of staff and students. Staff and students also need to know their HIV/AIDS status so that they can take advantage of available medical support. There is in addition, need for an up-to-date information system as well as an on going decission oriented research. The information system should include data on staff and students, mortality, morbidity and absenteeism, students and staff attrition, students' performance and AIDS education. Key information sources (most notably the Public Relations Office, individual faculties, the Clinic, Counselling Centre, Human Resource Unit, Students Admissions Office and Information Technology Services (ITS) should review and computerise their data records in order to ensure that all relevant HIV/AIDS-related information is captured and is easily retrievable.

There is need for on going research on selected at risk groups that is closely linked to day-to-day decisions on prevention, support and work productivity. This type of research will require researchers and the managers to work together. The research will also require a flexible, multiple method approach that can address the cultural and value system of the UB community in relation to the epidemic and the magnitude of its impact using a variety of impact indicators that utilise 'hard' as well as 'soft' data.

References

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