Attitude of Lesotho health care workers towards HIV/AIDS and impact of HIV/AIDS on the population structure

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Abstract

Background: The impact and management of HIV/AIDS in Lesotho in the context of disaster management was investigated.

Objectives: Lesotho health care workers' perception on HIV/AIDS progression, whether HIV/AIDS was managed as a disaster, and the impact on the demographic profile was investigated.

Methods: The empirical investigation included a literature study, and primary and secondary data analyses. Questionnaires (n=116) determined health care workers' perception of HIV/AIDS. Interviews with officers of Lesotho Disaster Management determined how HIV/AIDS was managed as a disaster. National population censuses and data from surveys were summarised to describe the impact of HIV/AIDS on the population structure.

Results: Respondents' modal age group was 25 to 39 years, 28.4% viewed HIV/AIDS related deaths as very high and perceived that HIV/AIDS changed the age composition, sex and dependency ratio of the population. Although HIV/AIDS was declared a disaster, the Lesotho Disaster Management Authority only aided the National AIDS Commission. There was evidence that HIV/AIDS caused the population pyramid base to shrink, and an indentation in the active population.

Conclusion: Health care workers attributed HIV/AIDS to changing the demographic profile of Lesotho, also reflected in the population pyramid. Lesotho Disaster Management Authority played a supporting role in HIV/AIDS disaster management.

Key words: Disaster management, HIV/AIDS, Lesotho, population, health care workers

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Introduction

Lesotho, is a small, independent and poor country in southern Africa, with a total surface area of 30355km^2 and an estimated population of 1,880 661 people.[1] About 59% of the total population of Lesotho lives below the poverty line and some 40% fall in the ultra-poor category.[2] The country has been ranked 149 out of 174 in the human development index.[3,4] The country is divided into ten administrative districts and is completely surrounded by the Republic of South Africa.

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HIV/AIDS is a disease, which affects almost all countries in the world, killing millions of people, especially in Africa. Sub Saharan Africa represents only about 11% of the world's 7 billion people, but accounts for about 67% of all those living with HIV/AIDS.[5,6] About 25.3 million Africans have died of AIDS including 2.3 million in 2004 alone while 55 million Africans are estimated to die of AIDS by 2020.[6] Lesotho is the third highest HIV infected country in the world, with an adult prevalence rate of 23.2%.[7] HIV/AIDS was declared a national disaster in Lesotho in 2000 by His Majesty King Letsie III.[3] Despite this, it seemed HIV/AIDS was not managed like other natural and human-induced disasters in Lesotho. A comprehensive and coherent demographic impact of the epidemic was not well documented and there was still information gap in the country.[8] Despite more than three decades of research on HIV/AIDS, the population pyramids of even the highly infected countries like Lesotho are still the same in many publications. HIV/AIDS could be approached in the context of disaster

management involving a continuous, integrated, multi-disciplinary and multi-sectoral approach.[9]

There has been no coherent and systematic study of the impact of HIV/AIDS on the population structure of Lesotho ever since the first HIV/AIDS (the hazard) case was reported in 1986.[10] More than two decades was a good time frame to start realising considerable impacts of such a hazard, given that the average lifespan of an HIV infected person is taken to be ten years.[6] Research often focusses on health care workers' knowledge and perception of HIV/AIDS treatment, care and subsequent stigmatization.[11,12] Health care workers' perception on the progression of the disease is less documented. In India, health care workers were tested on their knowledge of HIV transmission, attitudes towards HIV care and occupational risk perception .[13] Again, their perception of HIV/AIDS progression was not recorded.

From a disaster management perspective, contrary to the older paradigm of post-disaster response and recovery, the new paradigm focuses on disaster preparedness, prevention and mitigation but not neglecting emergency response, rehabilitation and reconstruction of the disaster management.[14] A disaster is a function of risk and risk has three main components as seen in the risk equation below:[14,15]

Risk [R] = (Hazard [H] x Vulnerability [V]) / Capacity [C]

This research used the vulnerability side of the equation to explain the demographic impacts of HIV/AIDS on the population of Lesotho. The aim of this research was to investigate health care workers' perception on the progression of HIV/AIDS in Lesotho, whether HIV/AIDS was managed as a disaster using disaster management principles and the impact of HIV/AIDS on the demographic profile of Lesotho.

Methods

This study followed an empirical research investigation[16] and a hybrid of both quantitative and qualitative methods were used. Quantitatively the positivist approach was followed[17,18,19] and secondary data was analysed.[19] However, questionnaires and interviews were used to generate primary data that complemented the secondary data. The investigation included a literature study, primary data in the form of questionnaires and interviews and secondary data, gathered from national population censuses as well as data from national surveys and reviews. The mixed approach served as a form of triangulation.[20]

The questionnaire comprised of 19 closed-ended questions encompassing the following: demographics, perception of AIDS related mortality, fertility related questions, and questions on the impact of HIV/AIDS. One hundred and sixteen health care workers were chosen using random sampling and were drawn from 20 health care institutions distributed in seven of the ten districts in Lesotho. Health care workers were chosen because of their working knowledge of HIV/AIDS in Lesotho and included the respective District Medical Officers. Questionnaires were handed to each respondent by the researcher, the study was explained, and an appointment was made to collect the completed questionnaires. In the event that an appointment was not met or the questionnaire was not completed, another appointment was made until the completed questionnaire was returned.

A pilot study to test the questionnaire was conducted in Maputsoe (Leribe district of Lesotho) and included a medical doctor and four nurses. The Lesotho Ministry of Health and Social Welfare gave permission for the study. Participation was voluntary, the questionnaires and interviews were anonymous and thus the confidentiality of respondents was assured.Two Lesotho officials working in disaster management in Maseru were interviewed on 02 September 2009 about how HIV/AIDS was managed as a disaster in Lesotho. The interviews were conducted in English and were transcribed as the interviews took place Qualitative methods were used to analyse the interview results; the transcribed discussion was grouped into emerging themes.

Secondary data comprised four national population censuses (1976, 1986,1996 and 2006).[1,21,22] These national population data were cross-analysed with those collected during the Demographic and Health Surveys by the Lesotho Ministry of Health and Social Welfare in 2004.[23] Data from the Antenatal Clinic HIV and Syphilis Surveillance for 2003, 2005 and 2007[23] as well as the Annual Joint Review Report for 2008/2009 of the Ministry of Health and Social Welfare were included.[24] Data on HIV/AIDS gathered from various other sources were also included in the analysis. Sources included the Lesotho National AIDS Commission, UNAIDS and other HIV/AIDS monitoring institutions in Lesotho and southern Africa.[4,5,25,26,27,28,29] Data from the various population censuses were used to construct population pyramids for the various years and trends picked up from these secondary sources were crossed referenced with those collected during the primary investigation to determine the trajectory of the HIV/

AIDS impacts on the population structure of Lesotho.Primary data were analysed descriptively and presented in tables and graphs. A combination of univariate and bivariate analyses were done by a statistician from the Lesotho Bureau of Statistics using a statistical package for the social sciences for demographic profile analyses.[19]

Results

Primary data analyses

Demographics

Twenty-nine medical officers, 80 nurses and seven medical laboratory technicians from 20 health care institutions completed the questionnaire. The health care institutions included Government of Lesotho, Christian Health Association of Lesotho and private health clinics. Seven out of ten districts were covered and most questionnaires were administered in Berea, Leribe and Maseru districts. These three districts have big towns (Mapusoe, Hlotse and Maseru) with high concentration of the Lesotho population. The respondents' demographic information is summarised in table 1.

Table 1: Demographic summary of respondents (n=116)

Parameter	Frequency	Percentage (%)
Profession		
Doctors	29	25
Nurses	80	69
Other	7	6
Gender		
Male	43	37.1
Female	73	62.9
Age (years)		
18 to 24	8	6.9
25 to 39	67	57.8
40 to 49	29	25.0
50 to 59	10	8.6
60+	2	1.7
Length of service (years)		
<1	10	8.6
1 to 5	55	47.4
6 to 10	19	16.4
11 to15	15	12.9
16 to 20	5	4.3
21+	12	10.3
Respondents per district		
Maseru	24	20.7
Buthe-Buthe	9	7.8
Leribe	25	21.6
Berea	28	24.1
Mafeteng	12	10.3
Mohale'sHoek	8	6.9
ThabaTseka	10	8.6

Most respondents were female (73%) and included nurses (69%), doctors (25%) and medical laboratory assistants (6%). The modal age group of the respondents was 25 to 39 years (Table 1) while their modal length of service fell within the one to five years group.

Perception of HIV/AIDS related mortality data, antenatal attendance and impact on Lesotho

The respondents' perceptions of HIV/AIDS related mortality data are given in Table 2.More than a quarter (28.4%) of respondents perceived that deaths attributed to HIV/AIDS was very high, 54.3% perceived that the incidence of HIV/AIDS related deaths were rising and 61.2% ranked HIV/AIDS as the number one cause of death.

Table 2: Respondents' perception of HIV/AIDS mortality related data in hospitals/clinics (n=116)

Parameter	Frequency	Percentage
Age groups with highest mortality rate:		
0-19 years	7	6
20-49 years	97	84
50-69 years	12	10
70+ years	0	0
Death attributed to HIV/AIDS		
Very low	10	8.6
Low	14	12.1
Moderate	28	24.1
High	28	24.1
Very high	33	28.4
Cannot tell	3	2.6
Gender most affected		
Male	14	12
Female	74	64
Fairly balanced	28	24
Incidence of HIV/AIDS related deaths		
Rising	63	54.3
Falling	31	26.7
Constant	14	12.1
Do not know	8	6.9

Continuation of table 2

Parameter	Frequency	Percentage
Rank of HIV/AIDS as cause of death		
Number 1	71	61.2
Number 2	19	16.4
Number 3	13	11.2
Number 4	6	5.2
Not among top 4	7	6.0

The respondents' perceptions of antenatal attendance are given in table 3. About half of the respondents (45.7%) saw less than 100 antenatal attendees per month, however, more than 75% of these attendees were tested for HIV. Respondents (68.1%) mostly perceived that live births had increased within the last five years and that the risk of HIV/AIDS was low (27.6%).

Table 3: Respondents' perception of antenatal attendance (n=116)

Parameter	Frequency	Percentage
Monthly antenatal attendance		
Less than 100	53	45.7
101 to 200	30	25.9
201 to 300	15	12.9
301 to 400	10	8.6
401 to 500	6	5.2
More than 500	2	1.7
Tested for HIV		
Less than 25%	13	11.2
25-50%	20	17.2
50-75%	10	8.6
More than 75%	73	62.9
Live births per month		
100 and less	66	56.9
101-200	21	18.1
201-300	12	10.3
301-400	10	8.6
401-500	5	4.3
501+	2	1.7
Five year trend live births		
Increasing	79	68.1
Falling	10	8.6
Constant	16	13.8
Do not know	11	9.5
Risk of HIV/AIDS		
Very low	28	24.1
Low	32	27.6
Moderate	30	25.9
High	13	11.2
Very high	5	4.3
Cannot tell	8	6.9

The respondents' perceptions of the impact of HIV/AIDS in Lesotho are given in table 4. HIV/AIDS was perceived by 27.9% of respondents as still being a serious problem and that HIV/AIDS orphans were increasing (24.8%).

HIV/AIDS management

The two officers mentioned that Disaster Risk Reduction (DRR) was the focus of the Disaster Management Authority. HIV/AIDS was viewed as a unique disaster in Lesotho, to be managed differently from other disasters. Consequently, the Disaster Management Authority did not play a central coordinating role as it did with other natural and human induced disasters, but worked with partner organisations especially in the area of advocacy.[30] However, the Disaster Management Authority was a strong adherent to the Prime Minister's doctrine of "ABC or D" which meant: Abstinence from sex, Being faithful to sexual partner(s), Condom use, or Death. Though no national workplace policy existed in Lesotho for people living with HIV/AIDS, the Disaster Management Authority vehemently condemned any form of discrimination against people living with HIV/AIDS, and put in place support systems for workers implicated in HIV/AIDS.

Secondary data analyses

The total population of Lesotho grew at a decreasing rate after HIV/AIDS was reported in the 1980s (table 5) and the crude birth rate fell constantly in 30 years.

Although thousands of children were born HIV positive, the percentage of HIV positive births fell constantly from 2002 to 2010 (table 6). Lesotho lost 185,453 people to HIV/AIDS within seven years giving an average death toll of 26,493 people per year. Initially in 2002, more males than females died from HIV/AIDS, but in 2010 more females died (table 6).

Table 4: Respondents' perception on the impact of HIV/AIDS in Lesotho

Perception	Frequency[a]	Percentage
Sex ratio has changed in Lesotho	12	3.4
Total population has reduced	48	13.5
HIV/AIDS is the main cause of population reduction	58	16.3
HIV/AIDS still a serious problem in Lesotho	99	27.9
HIV/AIDS affects more poor people than rich people	50	14.1
The number of HIV/AIDS orphans still on the increase	88	24.8

[a]Respondents could choose more than one parameter

Table 5: Summary of the demographic dynamic indicators in Lesotho

Indicators/year	1976	1986	1996	2006
Total population	1216 815	1595 096	1862 275	1880 661
Crude birth rate (per thousand)	42	38	34	31
Crude death rate (per thousand)	15	12	12	18
Net migration (per thousand)	-20	-73	-36	-36
Intercensal growth rate (%)	2.27	2.6	1.5	0.1
Sex ratio	93.3	95.6	95.6	95.0
Total fertility rate	5.4	5.3	4.1	3.5
Life expectancy: Male (years)	49	54	59	49
Female (years)	53	57	60	57

Source: Bureau of Statistics, 2001, 2005, 2007; Ministry of Health and Social Welfare 2008; UNAIDS/WHO 2007

Table 6: Estimated annual HIV positive births and cumulative HIV/AIDS deaths (2002 – 2010) in Lesotho[23]

	2002	2003	2004	2005	2006	2007	2008	2009	2010
HIV positive births									
Total	2765	2690	2631	2507	2134	1682	1281	1056	859
Percentage	4.49	4.41	4.35	4.18	3.59	2.86	2.19	1.81	1.47
Cumulative HIV/AIDS deaths									
Male	32139	40902	50397	60059	68464	77161	84816	92116	98996
Female	28721	37372	47055	57223	66330	76032	84791	93337	101550
Total	60680	7280	97452	117282	134794	153194	169607	185453	200545

Between 1976 and 2006, Lesotho conducted four national population censuses and data from these censuses were used to construct the four population pyramids shown in figure 1. The base of the population pyramid of Lesotho is shrinking and there is clear indication of an indentation in the active population.

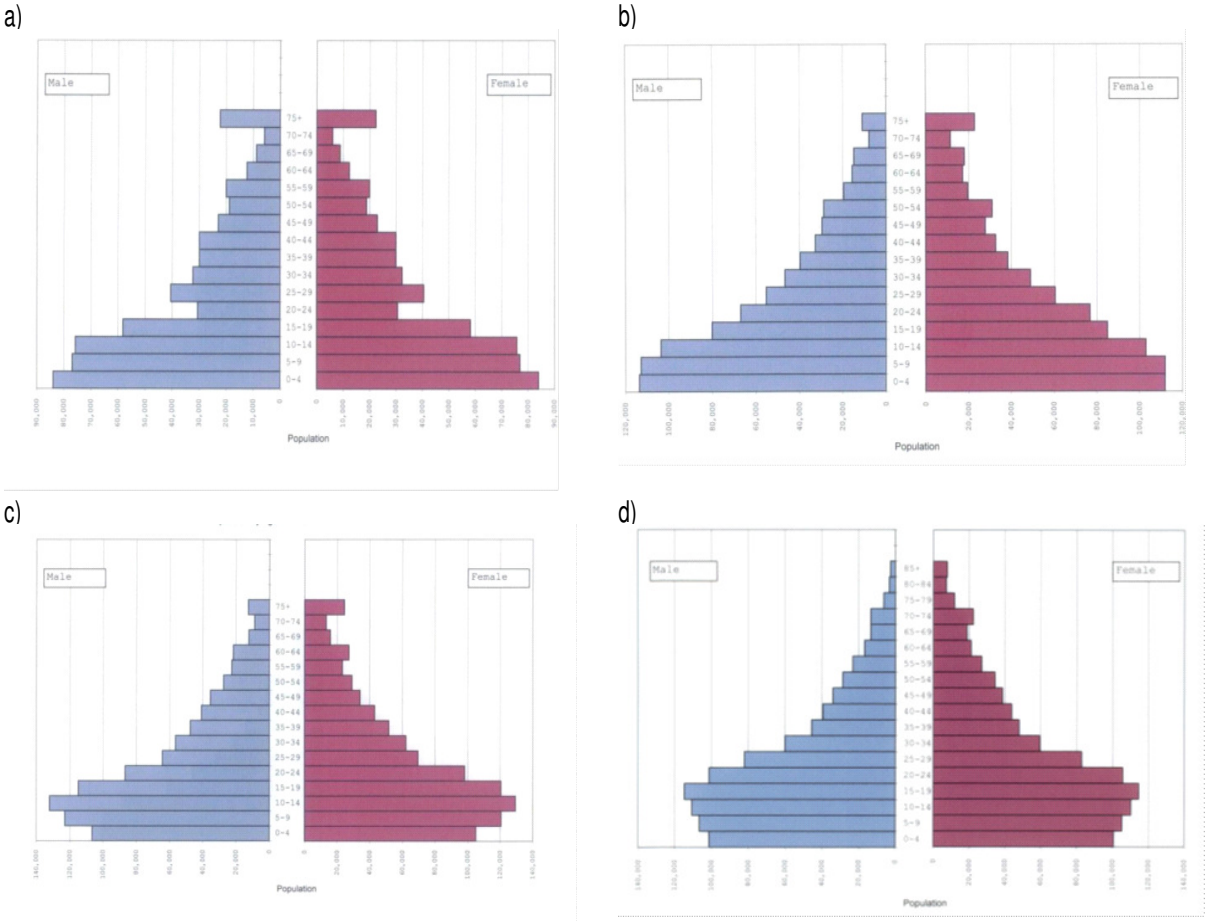

Figure 1: Population pyramid of Lesotho in a) 1976, b)1986, c)1996 and d)2006

Discussion

The age of respondents and their relatively short service records indicate young health personnel in Lesotho. The respondents' perception of HIV/AIDS related mortality data was in line with other studies and most respondents ranked HIV/AIDS as number one cause of death.[23] Respondents indicated that more women than men were affected by HIV/AIDS. Initially more males than females died from HIV/AIDS related deaths, but the newer trends indicate that more females are affected.[24]

Most respondents indicated that less than 100 women attended antenatal clinics per month. Of these more than 75% of the women were, however, tested for HIV. The prevention of mother-to-child transmission facilities increased in Lesotho from 35 in 2007 to180 sites by March 2009[24], which is a positive trend. Knowledge of HIV status could contribute to the prevention of mother-to-child transmission. Although thousands of children were born HIV positive, the percentage of HIV positive births fell constantly from 2002 to 2010. This also indicated the positive effect of more HIV/AIDS health sites in Lesotho.

The Lesotho Disaster Management Authority did not play the central co-ordinating role in the management of HIV/AIDS as a disaster in Lesotho. This central coordinating function is performed by the Lesotho National AIDS Commission. By declaring HIV/AIDS a disaster in 2000, logically the Disaster Management Authority should play the coordinating role according to the Disaster Management Act number 02 of 1997[9], which has not been amended. The Disaster Management Authority, however, focussed on DDR. Disaster Risk Reduction is the systematic development and application of policies, strategies and practices to minimize vulnerability and disaster risk in a society, to avoid or limit the adverse impact of hazards.[14] The Prime Minister of Lesotho is also the champion of "Know Your Status" campaign in Lesotho; a campaign that was launched in 2006 and was used since then as one of the best practice

response tool to reduce the spread of HIVAIDS in Lesotho.[31] The new paradigm of DRR is still not well understood by many people. The paucity of evidence on the benefits of DRR is an obstacle in attracting the interest and commitment of policy-makers.[32]The lack of evidence mentioned above partly explains the reasons for the lack of support and cooperation from many decision makers on DRR programmes. This is a challenge facing stakeholders in disaster management in many countries in Africa, including Lesotho.

The slowed increase of the total population of Lesotho was recorded after HIV/AIDS was reported in the 1980s. The highest net migration, as reported by the UN Secretariat[7], coincided with the advent of HIV/AIDS in the 1980s. Migrant mine workers were one of the main vectors for the spread of HIV/AIDS in Lesotho.[2,33,34] A large number of these migrants and their infected spouses had subsequently died, thus halting and later reversing the downward trend in the crude death rate that jumped from 12 per thousand in 1996 to 18 per thousand in 2006.[1,5] There was neither war nor any hazardous event in Lesotho during this period that could result in such a loss in human life at such a scale, except HIV/AIDS.

Attention was focused on the 1986, 1996 and 2006 population pyramids because the first case of HIV/AIDS was discovered in Lesotho in 1986.[3,4,8]The bases of the pyramids were continuously reducing. Although there was a natural tendency in the fall in fertility rates, HIV/AIDS affected fertility in Lesotho and HIV/AIDS accelerated infant mortality, thereby causing the noticeable shrinking in the base of the pyramids. Besides, the number and percentage of the active population was also reducing as noticed in the indentation of the 1996 and 2006 population pyramids. Most adults infected by 1995, the peak year of the HIV/AIDS prevalence rate in Lesotho[35] would have died by 2006, thus causing the indentation in the 2006 population pyramid. The top of the population pyramids narrowed as the general life expectancy continued to fall. This trend, which indicated increase in AIDS related deaths, is probably so because as the epidemic is maturing (with a levelling in the prevalence rate at 23.2% since 2005) most of the people who were infected before 2005 are now dying. These changes necessitate the updating of the population pyramids of countries that are highly affected by HIV/AIDS in order to take into account the impact of HIV/AIDS on the population structure. Most publications on the population structure of developing countries that were made based on population projections in the 1980s and early 1990s need to be updated to accommodate the impact of HIV/AIDS for countries like Lesotho. In the demographic study of the population structure of developing countries, a special trend has thus emerged for countries like Lesotho, which are heavily affected by HIV/AIDS.

Study limitations

The primary data source using questionnaires did not cover all the districts in Lesotho and a larger sample size to include all the ten districts and increase the number of respondents would have avoided the random sampling bias that could possibly have affected the generalisation of the results. Financial and time constraints also contributed to the size of the population that could be chosen.

Recommendations

On-going research is recommended to monitor the demographic impacts of HIV/AIDS on the population of Lesotho. Such impacts are likely to affect the general socio-economic development of Lesotho.

It is clear that the risk of HIV/AIDS is high in Lesotho given that the adult prevalence rate is 23.2% and Lesotho is ranked third most affected country in the world. It is therefore recommended that a thorough risk analysis be carried out in order to put risk reduction measures in place that are aligned with the DRR best practices, as outlined by UNISDR in the Hyogo Framework for Action 2005-2015.[36] This approach will also be in line with the growing international trend in medical disaster risk reduction using HIV/ AIDS as an example. To accomplish the above stated goal further training is recommended on DRR issues with a focus on HIV/AIDS.

There is also a need to have clear policies in place that address specific HIV/AIDS related effects such as discrimination and stigmatization of HIV/AIDS affected people in both the work place and in the community. This will help to boost the coping capacities of the affected population and build resilience. Such policies could be easily replicated in other heavily affected countries in Sub Saharan Africa

Conclusion

Health care workers in the study attributed HIV/AIDS to affecting and changing the death rate and birth rate of Lesotho. This influenced not only the

total population, but also the population structure of Lesotho. The age composition, the sex ratio and the dependency ratio was also changed in Lesotho because HIV/AIDS affected mostly the active age group, and women had a higher risk of infection. Although the HIV/AIDS pandemic was declared a disaster in Lesotho, the Lesotho Disaster Management Authority did not play the central co-ordinating role in the management thereof, but aided the Lesotho National AIDS Commission. There was evidence that HIV/AIDS caused the base of the population pyramid of Lesotho to shrink and an indentation in the active population. Subsequently, the special trend needs to be updated continually and corrections made accordingly so that the impact of HIVAIDS is well documented.

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