'We are also dying like any other people, we are also people': perceptions of the impact of HIV/AIDS on health workers in two districts in Zambia

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In countries with a high AIDS prevalence, the health workforce is affected by AIDS in several ways. In Zambia, which has a prevalence rate of 16.5%, a study was carried out in 2004 with the aim to: explore the impact of HIV/AIDS on health workers, describe their coping mechanisms and recommend supportive measures. The qualitative study was complemented by a survey using self-administered questionnaires in four selected health facilities in two rural districts in Zambia, Mpika and Mazabuka. It is one of the few studies to have explored the impact of HIV/AIDS from the perspective of health workers and managers in the region.

Thirty-four in-depth interviews and five group discussions were conducted with health workers, managers and volunteers, and 82 self-administered questionnaires were filled out by health workers. In addition, burnout among 42 health workers was measured using the Maslach Burnout Inventory (MBI). The MBI measures three components that contribute to burnout: emotional exhaustion, depersonalization and personal accomplishment.

The results show that in both districts, HIV/AIDS has had a negative impact on workload and has considerably changed or added tasks to already overburdened health workers. In Mpika, 76% of respondents (29/38), and in Mazabuka, 79% (34/44) of respondents, expressed fear of infection at the workplace. HIV-positive health workers remained 'in hiding', did not talk about their illness and suffered in silence. Despite the fact that health workers were still relatively motivated, emotional exhaustion occurred among 62% of the respondents (26/42). The interviews revealed that counsellors and nurses were especially at risk for emotional exhaustion. In each of the selected facilities, organizational support for health workers to deal with HIV/AIDS was either haphazardly in place or not in place at all. AIDS complicates the already difficult work environment. In addition to health workers, management also needs support in dealing with AIDS at the workplace.

Keywords   Impact of HIV/AIDS, health workers, managers, perceptions, fear, emotional exhaustion, stigma, organizational support, HIV/AIDS workplace policies and programmes, Zambia

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KEY MESSAGES

- The impact of AIDS on health workers in Zambia includes emotional exhaustion and stress, fear of stigma and discrimination when disclosing their HIV-positive status, and fear of HIV infection at work due to injuries.

- Limited organizational support and limited management capacity restrict health workers' ability to cope appropriately with the impact of AIDS at work.

- Multi-faceted workplace policies and programmes are required to mitigate the impact of AIDS on health workers, including training, professional support, infection control, and emotional, medical and financial support for HIV-positive health workers.

- There is a pressing need to assist managers in developing and implementing HIV/AIDS workplace policies and programmes.

Introduction

According to UNAIDS (2006), in 2005 an estimated 38.6 million were living with HIV. In countries hardest hit by the AIDS epidemic, the increasing number of patients and the implementation of programmes to respond to the crisis are putting a heavy burden on the health sector and its workforce. AIDS impacts in several ways, as health workers:[1]

(1) face problems when dealing with their own HIV-status and with AIDS in their personal lives;
(2) have difficulties dealing with HIV-positive colleagues;
(3) need to cope with the psycho-social stress of providing palliative care to terminal AIDS patients;
(4) fear infection at the workplace; and
(5) experience an increase in workload and type of tasks due to an increased burden of disease and changes in demand and type of services required.

Examples of new tasks are counselling services and management of HIV/AIDS patients, including antiretroviral treatment (ART). Absence and loss of staff due to HIV/AIDS further increase the workload of remaining health workers (Tawfik and Kinoti 2001; Chen and Hanvoravongchai 2005; Marchal *et al.* 2005).

Health workers form the core of any health system. A well-performing health system[2] is crucial to achieve the Millennium Development Goals, but in many countries the provision of quality services is severely constrained by the limited availability and low performance of health workers (Joint Learning Initiative 2004; WHO 2006). Frequently occurring problems are a lack of qualified workers due to migration to resource-rich countries (Hagopian *et al.* 2004), poor distribution of available providers (Zurn *et al.* 2001), and a mismatch between training, priorities of the national health plan and needs in the field (Support for Analysis and Research in Africa 2003). HIV/AIDS further exacerbates the already existing health workforce crisis, although there is little documented evidence on the extent to which the health sector and its workers are affected (DFID Health Systems Resource Centre 2003).

Coping mechanisms of health workers with HIV/AIDS have been little researched (Miller 2000). Most research in this area has been conducted in resource-rich countries and focuses on burnout and individual coping strategies. According to Miller (2000: 71), the following topics are generally investigated: staff fears, issues of association with patients, professional and role issues, stigma, discrimination and ethical issues. Research in resource-poor settings focuses on:

- Occupational hazard: studies determining the incidence of prick and splash accidents (Gumodoka *et al.* 1997; Pruss-Ustun *et al.* 2005).
- Knowledge, attitudes and practices of health workers with respect to HIV/AIDS: studies investigating the relations between the knowledge, attitudes and practices of health workers when dealing with HIV/AIDS patients, including issues such as fear, stigma and discrimination (Awusabo-Asare and Marfo 1997; Mungherera *et al.* 1997; Vos *et al.* 1998; Grinstead *et al.* 2000; Ezedinachi *et al.* 2002; Laraqui *et al.* 2002; Adebajo *et al.* 2003; Rahlenbeck 2004; Walusimbi and Okonsky 2004; Kielmann *et al.* 2005; Ogunbodede *et al.* 2005; Oyeyemi *et al.* 2006).
- Studies with a more comprehensive approach investigating a variety of aspects such as stress and burnout, working conditions, knowledge and attitudes, and organizational support (UNAIDS 2000; Modiba *et al.* 2001; ZNA/NNA 2001; Raviola *et al.* 2002; Kiragu *et al.* 2004).

Most of the studies conducted on coping of health workers are descriptive and highlight various ways in which health workers are influenced by HIV/AIDS at the workplace: fear to work, being stigmatized, having stress and burnout. Causes are rooted mainly in lack of knowledge, of protective measures and of emotional and technical support to deal with HIV/AIDS at work. The studies are difficult to compare as they used a variety of designs, most with self-developed instruments and no common theoretical framework. Two studies were intervention studies and reported improvement in knowledge and practice of nurses, physicians and laboratory technicians after training in clinical AIDS management and health education (Ezedinachi *et al.* 2002), and improvement in knowledge and practice of paramedical staff after introduction of and training on sterilization guidelines (Vos *et al.* 1998).

This article describes a study conducted in two rural districts in Zambia, Mpika and Mazabuka. It is one of the few studies to have explored the impact of HIV/AIDS from the perspective of health workers and managers. This study contributes to understanding workplace issues affecting health workers working in an AIDS environment. Gaining insight into the perceptions of managers and health workers would assist in developing appropriate interventions. The study was conducted

in October 2004 by the Royal Tropical Institute and the Churches Health Association of Zambia (CHAZ).[3]

Zambia is a low-income country in Southern Africa, with a population of 10.9 million people living in nine provinces (Ministry of Health 2004). Zambia faces a major health workforce crisis, with three underlying causes: migration, limited training capacity to train new health workers and deaths of health workers due to AIDS (Kombe *et al.* 2005). Currently there are 8360 health workers, the majority being nurses (7251). They are not equally distributed across the country, with rural areas suffering from lack of staff; 68% of the population live in rural areas, but only 53% of nurses and 34% of doctors work there (Ministry of Health 2004). Annually 693 new health workers graduate from (para)medical schools. There is an annual average attrition rate of 5.4%, with doctors having the highest attrition rate at 9.8%, followed by nurses with 5.3% (Kombe *et al.* 2005). With a country HIV-prevalence of 16.5%, HIV/AIDS is likely to impact substantially on the health workforce, although few data are available. Between 1998 and 2003, the Zambian health sector lost 555 health workers, 38% due to death (Ministry of Health 2004).

Mpika District is located in the Northern province of Zambia. It is the country's biggest district, with a population of 155 315 and an estimated health care coverage of 30%. Mazabuka District is situated in the Southern province and has a population of 240 116. It has an estimated health care coverage of 50%. In both districts the major causes of morbidity and mortality are HIV/AIDS, tuberculosis, malaria and diarrhoea. As in most districts in Zambia, the total number of staff lost is greater than the number being recruited. The districts provide prevention of mother-to-child transmission, voluntary counselling and testing, sexually transmitted infection treatment, preventive services and some home-based care programmes. ART was introduced a few months prior to our research by two of the selected hospitals in Mazabuka and one in Mpika.

The objectives of the study were to explore the impact of HIV/AIDS on health workers, to describe their coping mechanisms with respect to HIV/AIDS and to propose supporting measures.

Methods

Study design

The study was cross-sectional, descriptive and used both qualitative and quantitative methods. It was conducted over a period of 2 weeks in two districts.

Theoretical framework

As no common theoretical framework on health workers' coping with HIV/AIDS exists in the literature, the research team developed its own framework. 'Coping' was defined as being present at work and finding work acceptable. 'Finding work acceptable' was defined as not having burnout[4] and being motivated to work.[5] Burnout was measured using a standard psychometric instrument: the Maslach Burnout Inventory (MBI). This instrument measures through 22 statements the three components of burnout: emotional exhaustion, depersonalization and personal accomplishment (Maslach 1982).

For this study the following factors influencing coping were investigated:

- Personal factors, such as experiences in working with HIV/AIDS patients, private situation and fear of acquiring HIV/AIDS in the workplace.
- Organizational factors, such as supervision, support and safety measures, workload and training opportunities.
- Availability of health workers: absenteeism.

Sampling and study population

Districts were selected according to maximum variation sampling,[6] using the HIV-prevalence rate as criterion: 8.3% in Mpika and 23% in Mazabuka. In rural areas in Zambia, health services are provided by government and mission facilities. In each district four health facilities were selected: one government district hospital, one rural government health centre, one mission hospital and one rural mission health centre. Selection of the hospitals and health centres was done purposefully: based on advice of the district managers and on distance from the district capital. In each hospital the following staff were selected and interviewed: the hospital manager, a nurse or a doctor from internal medicine, from the maternity ward and from the outpatient department, and one AIDS counsellor. If there were not many staff, providers with most relevant tasks to the selection criteria were interviewed. If several staff were operational in the same function, selection was based on availability. In the health centres, all available staff were interviewed. The study population of the group discussions consisted of volunteers and health workers selected on availability. With respect to the survey, all health workers dealing with patient care in the selected health facilities and available during the study were invited to participate.

Data collection

Qualitative data were collected through interviews and group discussions, with the use of an interview guide. Open-ended questions were asked about the impact of HIV/AIDS on the district, on health care services, on health workers, and on their coping mechanisms when dealing with HIV/AIDS patients, with HIV-positive colleagues and with HIV/AIDS in their personal lives. Questions were also asked about support mechanisms in place and required to deal with HIV/AIDS. In Mpika, 20 in-depth interviews were held with 14 health workers, three managers and three volunteers, and two group discussions were organized with health workers.[7] In Mazabuka, 14 in-depth interviews were conducted with nine health workers, three managers and two volunteers. Three group discussions were held: one with volunteers and two with health workers.[8]

The quantitative data were collected through self-administered questionnaires distributed to 100 health workers—31% of the total number of staff employed by the hospitals[9]—and filled out by 82 respondents: 38 health workers from Mpika and 44 from Mazabuka.[10] The MBI was distributed to 50 respondents who had received a self-administered questionnaire and was filled out by 84% (42/50) of the 50 respondents. Closed questions were asked about tasks in HIV/AIDS care and support, coping mechanisms, preparation to

deal with HIV/AIDS, support measures in place, motivation and general working conditions.

Data analysis

Qualitative data were analysed manually using data compilation matrices per respondent group, describing the data per study question and per respondent group. Issues analysed were perceptions of health workers and managers on, and experiences with, the impact of HIV/AIDS on the district, on health care services and on personal life. In addition, changes in tasks, preparation for tasks in HIV/AIDS, difficulties faced when dealing with HIV-positive patients and colleagues, individual coping mechanisms, required and received support at work, and suggestions for improvement of support at work were also analysed. Quantitative data were analysed with Epi-info 6.1. Key variables analysed included motivation of staff, staff overtime, HIV/AIDS-related tasks and preparations for these tasks, occurrence of needle-stick injuries, protective measures in place and used, use of post-exposure prophylaxis (PEP), burnout and AIDS in personal life. Due to the small sample size, the analysis was limited to description of frequencies and proportions.

Ethical considerations and quality assurance

Quality of data collection was assured by providing confidentiality, asking consent, assuring anonymity, and through the interviewers, who were experienced researchers and had developed the research and conducted the interviews. The instruments were pre-tested with the aim of assuring that respondents understood the questions. The self-administered questionnaire was tested during a workshop for health workers and the interview guides were tested during the first day of the study.

Validity of data was assured by triangulation. Data were triangulated by:

- interviewing managers, health workers and volunteers on the same topics;
- asking the same questions during interviews and group discussions;
- comparing and contrasting information from the interviews with information from the questionnaires, the results from the MBI, and with the registers and reports from the facilities.

The protocol was approved by the Zambia Research Ethics Committee.

Findings

Characteristics of the study population

Respondents of the questionnaire were almost equally divided over the two districts (54% in Mazabuka and 46% in Mpika) and between men and women (46% and 54%, respectively). Most respondents were enrolled or registered nurses/midwives, followed by clinical officers, as these are the staff mainly employed at the health facilities and hospitals in rural areas (Table 1). More than half of the respondents (62%) had worked between 3 and 10 years in the current post. Their mean age was 35 years.

Table 2 shows that the characteristics of the interviewed health workers in both districts were relatively similar. The interviewed managers were three registered nurses, two medical doctors and one health inspector; three men and three women. They varied in age, ranging from 30 to 50 years, and in work experience, ranging from 3 to 10 years. Two of the managers were expatriates. All five volunteers—two women and three

Table 1 Characteristics of study population, self-administered questionnaire ($n = 82$)

Characteristics	Mazabuka ($n = 44$)	Mpika ($n = 38$)	Total ($n = 82$)	Total percentage (%)
Age (years)	Average: 39	Average: 37	Average: 35	
	Range: 21–55	Range: 22–56	Range: 21–56	
	Median: 32	Median: 36	Median: 34	
Sex				
Male	21	17	38	46
Female	23	21	44	54
Profession				
Pharmacists	1	1	2	2.5
Medical doctors	2	0	2	2.5
Registered nurses/midwives	8	8	16	20
Clinical officers	8	3	11	14
Lab technicians	2	2	4	5
Enrolled nurses/midwives	19	18	37	47
Others	4	4	8	10
Missing	0	1	1	1
Experience in post				
1–2 years	11	5	16	20
3–5 years	12	10	22	28
6–10 years	15	12	27	34
>10 years	5	10	15	18

men—worked in home-based care programmes, on average for 2.5 years. Their age ranged from 30 to 46 years.

Burnout

The burnout measurement (MBI) showed that 62% of the health workers (26/42) felt moderate-to-high emotional exhaustion. There were no feelings of indifference to patients and most had feelings of personal accomplishment. The sample was too small to differentiate between the districts or the professional groups. The MBI results corresponded with the answers provided in the in-depth interviews and the group discussions: health workers often felt frustrated, tired and overworked, but had compassion for patients. Some health workers mentioned they felt they had achieved something when a patient was happy.

Health worker motivation

Health workers seemed relatively motivated in both districts. In Mpika, 63% (22/35) answered that they were motivated, and in Mazabuka, 70% (31/44), although in both districts respondents mentioned that their motivation was declining. The main reasons for motivation were liking this type of work and enjoying caring for people. There was no significant difference in motivation between districts, sex, and people working in public or mission facilities, nor was there a significant relationship between fearing to acquire HIV/AIDS at the workplace and being motivated to work.

The following sections explore factors contributing to burnout and motivation of health workers.

General working conditions

'Sometimes on my days off I am asked to come in and do an extra shift, for which I am not paid, and I have to come in and work. This is very frustrating.' (Nurse)

Overall there was a lack of staff, support and equipment, and health workers received low salaries and incentives. Staff shortages and working overtime were specific obstacles that seemed difficult to overcome. Eighty-one per cent (30/37) of health workers in Mpika, and 84% (36/43) in Mazabuka, replied that they work overtime.

HIV/AIDS affecting health workers and health services provision

HIV/AIDS exacerbates an already difficult work environment as it was found in both districts to have affected the personal life and work of health workers. In Mpika, 53% (18/34) of respondents mentioned that they encounter HIV/AIDS in their personal life; in Mazabuka, 68% (27/40) mentioned the same.

'I lost a brother and a sister, I know because the clinical signs have shown it. Even now, I still have trouble, I have not really coped with it completely.' (Clinical officer)

Health workers mentioned that due to HIV/AIDS they fear infection at work and an increased workload. New tasks, such as counselling and ART distribution, have been added to the regular tasks of health workers, leading to workload increases. Interviewed health workers and managers said that the patient load had increased due to a rise in the number of consultations, intensified illness in patients and longer stay by patients in hospital.

Fear of infection

The combination of having problems at home and an increased workload potentially increased the risk of stress and injuries. In Mpika, 61% (23/38) of respondents said they had experienced at least one needle-stick injury, of which 48% occurred in the previous year. In Mazabuka, 58% (25/43) responded that they had had at least one needle-stick injury, of which 25% occurred in the last year. Seventy-six per cent (29/38) of respondents in Mpika, and 79% (34/44) in Mazabuka, were afraid of getting infected while at work. Protective measures were often in place and used, as Figures 1 and 2 illustrate, although some staff complained that these were insufficient.

Reasons for this fear could be an increased risk of exposure due to injuries, a lack of knowledge, or concern about making mistakes in the workplace.

'You need to protect yourself when dealing with patients. We use gloves, but sometimes there are not enough gloves. This really affects us. When you have no gloves and a patient is bleeding, you fail to help that patient because you also fear if you touch that man you will be infected.' (Nurse)

Increase in workload

Health workers who were not assigned to special HIV/AIDS activities saw their workload increase and faced changes in their tasks. For instance, nurses on the wards had to care for chronically ill people, they had to counsel patients and relatives, and they had to explain ART to them. Health workers who

Table 2 Characteristics of study population, in-depth interviews of health workers ($n = 34$)

| Characteristics	Mpika ($n = 14$)	Mazabuka ($n = 9$)
Age	Average: 38 years	Average: 35 years
	Range: 26–53	Range: 23–55
Sex	6 women	5 women
	8 men	4 men
Profession	Enrolled nurses/midwives, registered nurses, clinical officers, medical doctor, laboratory technicians	Enrolled nurses/midwives, registered nurses, clinical officers, medical doctor, laboratory technicians
Working experience	Average: 9.5 years	Average: 7 years
	Range: 2–30 years	Range: 1–19 years
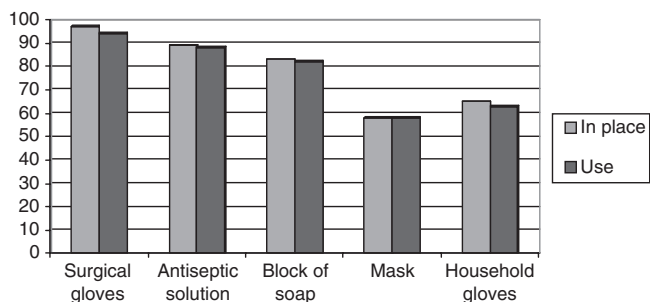
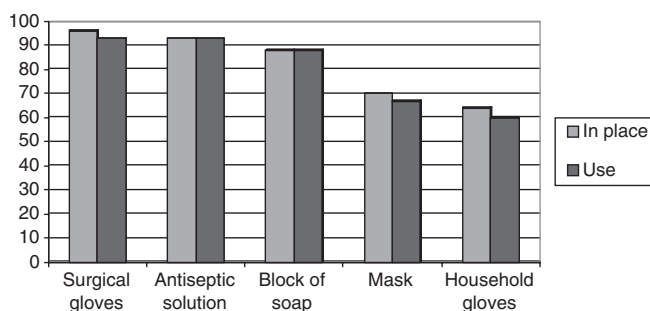**Figure 1** Presence and use of protective measures in Mpika ($n = 38$)

Figure 2 Presence and use of protective measures in Mazabuka ($n = 44$)

conducted tasks for which they were not trained faced difficulties. This was especially the case when nurses had to counsel patients or when they had to provide information on issues they did not feel familiar with.

> 'You are a counsellor even when you are not trained to help the relatives. You have to calm them down... Direct them to God. Tasks have changed. My task has changed so much; it is no more to do with total nursing care but even counselling.' (Nurse)

HIV-positive health workers

> 'We are also dying like any other people, we are also people.' (Nurse)

Data on absence of health workers due to HIV/AIDS-related problems was not obtained as absence was not systematically registered. The issue of HIV-infected health workers was very difficult to discuss, especially when it concerned their own status or that of immediate colleagues. Health workers, managers and volunteers did suspect some staff to be HIV-positive, due to absence and frequent illness, although sick workers tried to hide their illness as much as possible.

> 'When we first started the ART clinic we were concerned about stigma. We discussed these issues... In the end it was us that were stigmatizing ourselves. I feel people that are more educated, like nurses, find it most difficult

to discuss and disclose their status and they are worried.' (Manager)

> 'We had two and they died—a nurse and her husband. Two years ago. They did not come out in the open, but both passed away and we concluded it was AIDS. We were thinking that people in the hospitals do not suffer from that, but when we saw them, we knew they also suffer. It cannot spare the people working in the hospitals, it is a big problem.' (Volunteer)

The difficulties in discussing HIV/AIDS among health workers confirmed the fear of being stigmatized if you are HIV-positive. A consequence of this was that many health workers did not get tested. Respondents told us that HIV-positive health workers remain 'in hiding', do not talk about their illness and suffer in silence, despite the willingness of co-workers to assist.

> 'The social control is changing. But health workers still rather die. They deny their status and do not come to the health care. They don't disclose it to the hospital, but sometimes get treated somewhere else and come back in a better shape. The number of HIV-positive workers is increasing, I know of four people getting ART from outside.' (Manager)

Organizational support

In the four hospitals, support to health workers dealing with HIV/AIDS at work concentrated on HIV prevention and addressed infection at work by way of protective measures and PEP. However, despite the high number of needle-stick injuries, only four health workers said they had accessed PEP. Managers confirmed the little use made of PEP and believed health workers would prefer to do without PEP because its use required an HIV test. Fear of stigma and discrimination could be a reason why health workers would refuse an HIV test, but there might also be a lack of awareness.

Emotional or technical support to deal with HIV/AIDS patients or one's own status was sparse. In both districts, counsellors seemed to be the only professional group that organized official meetings at the workplace to support individuals coping with HIV/AIDS. HIV-positive health workers could not count on organizational support: in Mpika, only the Zambian Nursing Association was actively involved, organizing income-generating activities and support groups for nurses. In Mazabuka, one of the selected hospitals had a peer support group for HIV-positive health workers. Support from the facility, such as offering private wards, providing counselling and professional advice, offering free medication or financial support, was non-existent in both districts. Respondents told the researchers that this had to be improved in order to facilitate testing among health workers and to help infected health workers to come out into the open. They feared stigma and discrimination, and repercussions in the workplace, which did occur. One HIV-positive nurse was denied training by management due to her status. This indicates the importance of HIV/AIDS-workplace policies in which support and protection of health workers are assured.

Management capacity

Managers helped health workers dealing with HIV/AIDS in various ways, within their capabilities. Examples are supervision, clinical meetings and delegating tasks to non-graduates, students or volunteers. However, managers require better support in dealing with HIV/AIDS at work, specifically in the development and implementation of HIV/AIDS-related workplace policies and programmes.

> 'I don't know if I can help the staff (as a manager). I have some members of staff who get sick, the situation that they go through. Maybe I can help in very little ways.' (Manager)

Managers were left to deal with HIV/AIDS according to their own skills and means, as there was a lack of policies and strategies at the national or district level. This was confirmed during brief discussions at the central level. At both the Ministry of Health and CHAZ, policies were developed, but were not yet disseminated to the districts. This left managers in health facilities without support and guidance on how to introduce and enforce policies which promote coping strategies to deal with HIV/AIDS in the workplace.

Coping mechanisms of health workers

Health workers explained their coping mechanisms to deal with HIV/AIDS-related problems at work or with HIV-positive colleagues, but coping mechanisms to deal with one's own status were not easily talked about. They disclosed that they deal with HIV/AIDS individually (often through religion) and they talk to each other about it. Emotional coping with HIV/AIDS at the workplace was considered difficult, and health workers confirmed that there were no official structures in place to help them to cope better.

> 'It does affect other staff when you have a colleague who is not very well because you also have to take time to go and see her, and you also have to do their duties and to look for other people to do part-time. There is burnout, you don't rest, you get tired. People snap at each other sometimes, they even snap at patients.' (Manager)

Management support was considered important by health workers, but they confirmed that this was almost absent. Respondents suggested several types of support in order to better deal with HIV/AIDS, such as sharing experiences with each other, receiving professional advice on dealing with certain cases and training for new tasks.

Discussion

Our study confirms that health workers risk emotional exhaustion and stress, they fear stigma and discrimination when disclosing their HIV-positive status, and fear HIV-infection at work due to injuries. The results also show that limited organizational support and limited management capacity to deal with HIV/AIDS restrict health workers' ability to cope appropriately with HIV/AIDS at work.

Two professional groups in our study seem particularly at risk for emotional exhaustion: counsellors and nurses on the wards. Most counsellors were already trained and had established professional meetings and support systems at their own initiative, although this did not always appear to be very systematic. Nurses on the wards, however, were often not trained in emotionally and technically supporting AIDS patients, and did not have a system in place to better deal with this. Foster (1996) found that expansion of tasks without being trained increased feelings of stress and burnout. The lack of training and support for nurses and midwives, who are often the main primary care providers in Africa, is also acknowledged elsewhere (Raisler and Cohn 2005). Results from other studies confirm burnout among health workers who deal with HIV/AIDS (ZNA/NNA 2001; Modiba et al. 2001; Kiragu et al. 2004). A study carried out by UNAIDS (2000), among NGOs in AIDS care in Uganda and South Africa, identified a number of factors which cause stress and burnout that were also revealed in our study: not being prepared and trained for new tasks, inadequate support, and lack of supervision and recognition. UNAIDS (2000) suggests several prevention strategies such as peer counselling, personal mentors, supervision, offering appropriate training, and better distribution of tasks.

Health workers in our study feared testing and accepting an HIV-positive status, due to fear of stigma and discrimination. HIV-infection among health workers is common (Tawfik and Kinoti 2001; Harries et al. 2002; Marchal et al. 2005), although respondents in our study did not easily admit this. Our study confirmed the importance of dealing with stigma and discrimination at the workplace. Health workers, with one exception, did not talk about their own status, despite the private location of interviewing and the guarantee that information would remain confidential. Confidentiality is likely to be an important issue: from some of the answers it became clear that health workers preferred to be tested and receive treatment in a facility other than the facility they work in. Stigmatizing HIV-positive people remains common, and without HIV/AIDS-workplace policies and regulations there is no assurance of being protected. Foreman et al. (2003) mentioned that skills and knowledge on HIV/AIDS are required to address stigma in the workplace, as was suggested by respondents in our study. Specific workplace programmes would be instrumental in this, consisting of dissemination of information on HIV/AIDS, use of protective measures, providing counselling services for workers, and care and support for HIV-positive health workers.

Fear of infection at work was another important issue mentioned in our study, and is confirmed by other studies (Awusabo-Asare and Marfo 1997; Mungherera et al. 1997; ZNA/NNA 2001; Kiragu et al. 2004). However, the actual risk of infection at work is low (Gumodoka et al. 1997). As injuries in the workplace are common, health workers need to be aware of protective and preventive measures and be able to benefit from PEP after possible exposure to the virus. The use of available protective and preventive materials, as well as infection control guidelines, needs to be communicated and enforced.

Despite the difference in prevalence rates between Mpika and Mazabuka, the answers of respondents on the impact of HIV/AIDS on services and the health workforce were similar. It would be interesting to find out the reasons for this lack of

difference. It may be that beyond a certain cut-off point the differences are no longer visible in health services, as they are utilized to their limits. Given the overall problem of lack of staff, there is an urgent need to review the current task division among health workers (Marchal *et al.* 2005). Opportunities to release health workers from a heavy workload are available, such as the use of volunteers. However, transfer of tasks to other cadres or volunteers needs to be carefully planned and supported.

The study showed that managers did not really know how they could help health workers and how managers themselves could be supported. Although most facilities have professional counsellors, there is a lack of systematic support to deal with problems related to HIV/AIDS. Organizational support is urgently required to retain HIV-positive health workers at their work and to support health workers in dealing with fear of infection and an increased workload. There is a pressing need to assist managers in developing workplace policies on HIV/AIDS and in implementing workplace programmes. Caution must be taken not to limit programmes to training and awareness raising; training as a single intervention appears to have limited impact (Shahabudin 2003; Potter and Brough 2004; Rowe *et al.* 2005; WHO 2006). An enabling environment, in which HIV/AIDS is accepted, is required to obtain success. This can only be achieved through multi-faceted organizational support: including training, professional support, infection control, and emotional, medical and financial support to HIV-positive health workers. Guidelines to assist in developing comprehensive workplace programmes for health workers in resource-poor settings have been developed (ILO/WHO 2005), but experiences with their implementation have not yet been published. Documenting and sharing experiences with workplace programmes in health care settings is required to obtain an insight into best practices.

Limitations were encountered during the study's implementation and therefore the results have to be interpreted with caution. The MBI was not tested and validated locally. Therefore, we are not able to compare the answers of the health workers in this research with a general norm for Zambia. With the necessary precautions, we used the scoring key and norms developed for the United States. These were also (successfully) used by researchers in South Africa (Modiba *et al.* 2001), but the results remain indicative. In our study, three methods to determine availability of health workers were used: examining staff records, self-administered questionnaires and questions to managers. Both quantitative methods did not provide sufficient reliable information and only the responses of the managers could be used. Therefore, availability of health workers could not be established, although all managers confirmed that they often deal with problems of staff absence and sick leave.

Conclusions

In recent years, HIV/AIDS has increased the workload and considerably changed or added tasks to already overburdened health workers in both study districts. Where there are no protective measures, patient care may be compromised as health workers cannot save a bleeding patient due to fear of HIV-infection. Despite the fact that health workers are still relatively motivated, there are signs of emotional exhaustion, especially among counsellors and nurses. HIV/AIDS complicates the

already difficult work environment. Not only health workers, but also management need support in dealing with HIV/AIDS at the workplace. Limitation in recruitment of personnel, departures of staff and lack of resources complicate the task of managers to provide a conducive work environment for health workers, leading to decreased motivation. The question is whether management has sufficient capacity to address HIV/AIDS at the workplace, and whether technical support and financial resources are available to help them deal with stigma, fear, frustration and caring for sick colleagues.

Although data have to be summarized at facility level and aggregated for district, provincial and national level so as to quantify the problem, the study highlights the pressing need to provide organizational support to health workers and to managers. HIV/AIDS requires health policy makers and planners to implement multi-faceted workplace policies and programmes in order to support valuable health workers who are at their limits. Urgent action is necessary.

Acknowledgements

Endnotes

[1] Health workers are defined in this article as professionally trained cadres who provide health care services.

[2] A health system is 'comprised of all organizations, institutes and resources devoted to producing health actions' (WHO 2001: xi).

[3] The study was co-financed by the Directorate-General for International Development Cooperation (DGIS) of the Dutch Ministry of Foreign Affairs.

[4] Burnout is defined as 'a syndrome of emotional exhaustion, depersonalization and reduced personal accomplishment that can occur among individuals who do "people work"' (Maslach 1982: 3).

[5] Motivation is defined as 'an individual's degree of willingness to exert and maintain an effort towards organizational goals' (Franco *et al.* 2002: 1255–56).

[6] This is a purposeful sampling method used in qualitative research to 'obtain optimal insight into an issue about which little is known' (Varkevisser *et al.* 2003: 199).

[7] One group consisted of three women and one man, average age unknown, varying professions and working experience. The other group had three women and one man, average age 36, with varying professions and work experiences.

[8] The participants of one group discussion consisted of three male volunteers—all members of a village neighbourhood health committee and all above 60 years of age. Two group discussions with, respectively, three and five health providers were held.

[9] At the time of the research, the selected facilities employed in total 319 health workers who provided care to patients.

[10] Not all questions were always systematically filled out by the respondents, therefore percentages given do not entirely correspond to the $n = 38$ for Mpika and $n = 44$ for Mazabuka.

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