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CHALLENGES OF HIV/AIDS HEALTH CARE DELIVERY TO REGION 14 HCWS AND HEALTH INSTITUTIONS ADDIS ABABA, ETHIOPIA

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Emerging Challenge of HIV/AIDS Care to Health Institutions in Addis Ababa, Ethiopia

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Abbreviations

AIDS	Acquired immuno deficiency virus
CDC	Center for Disease Control
CNS	Central Nervous System
HCWs	Health care workers
HIV	Human immuno deficiency virus
HLCD	High level chemical disinfectant
I.V.	Intra venous
MOH	Ministry of Health
O P D	Out patient department
O.R.	Operation room
PHRD	Policy And Human Resource Development Project
PWA	Patient with AIDS
STD	Sexually transmitted disease
TB	Tuberculosis
UNAIDS	United Nations Program on AIDS
WHO	World Health Organization
WHOPTC	World Health Organization Pan African emergency Training Center

Definitions

Counseling : A confidential dialogue between a client and a care provider aimed at enabling The client to cope with stress and take personal decision related to HIV\AIDS. The counseling process includes an evaluation of personal risk of HIV transmission and facilitation of preventive behavior.(29)

Opportunistic infection:- Any bacterial, fungal or protozoal infection that results from a defective immune system that can not defend against pathogens normally found in the environment (30).

Palliative care:- A care which is required most when an individual in whom following an accurate diagnosis, the advent of death is certain and not too far distant and for whom treatment has changed from curative to palliative(31).

Universal precaution

precautions against the risk of HIV-infection\transmission in the health institution include: careful handling of sharp objects; sterilization, disinfection, or disposal of instruments as appropriate; adherence to sterilization and disinfection protocols; and appropriate use of personal protective equipment as indicated by the nature of the specific procedure, e.g. gloves, masks, gowns or aprons, and protective eyewear and hand washing (32).

ABSTRACT

This is a cross-sectional survey conducted to describe the challenges and needs of Region 14 HCWs and health institutions towards HIV/AIDS patient care. Self administered questionnaire was used to describe HCW's attitude, risk perception , practice and perceived needs & sources of information\knowledge on HIV/AIDS care and three other survey instruments were also used to assess the availability of diagnostic facilities and pharmaceutical supplies for HIV/AIDS patient care. The study was conducted in all the five hospital and half of the health centers under the Region 14 Health Bureau from August 1999 to 2000. Three hundred and one HCWs completed self-administered questionnaires. Forty-two percent (127) of the study participants were physicians, while, 57.8 % (175) were nurses. Data were entered into and analyzed using EPI-info statistical software program. The majority of the HCWs perceive themselves to be at great risk of acquiring HIV-infection. But significant proportion of thc staff working at the high-risk zones reported not practicing the universal precaution. The majority of the HCWs were found to have favorable attitude towards patients with HIV\AIDS. But HCWs also expressed their discomfort in the different types of contact with HIV\AIDS patients care activities. Significant percentage of treating HCWs showed perceived needs & sources of information\knowledge on HIV/AIDS .Tests for fungal infection were the least available and drugs for fungal infection, skin diseases and CNS conditions were also found to be scarce. Potent analgesics like codeine and other related drugs needed for terminally sick patients were also found to be low. In-service training of the HCWs and improving their access to sources of information/knowledge on HIV\AIDS care especially on areas of universal precaution, care is critically recommended. Improving the provision of equipments and supplies for HIV-infection control especially protective clothing and the availability of anti fungal drugs, potent analgesics, drugs for skin diseases &CNS drugs needed for HIV\AIDS cases is also recommended.

I. INTRODUCTION

Globally with the AIDS epidemic in its second decade, almost every country in the world has reported AIDS cases. UNAIDS has estimated that at the end of 1999, about 34.3 million people in the world were living with HIV\AIDS. Around seventy percent (24.5 million) of these were in sub Saharan Africa (1).

In Ethiopia, there is evidence that the HIV epidemic started in the mid 1980s. Indeed, the first sera positive for HIV-1 antibodies in Ethiopia were two sera collected in 1984 among 167 hospital patients of Addis Ababa (2). According to WHO/UNAIDS, an estimated 2.5 million people in Ethiopia are infected with HIV in 1997, Corresponding to adult prevalence of 21% and 4.5% urban and rural areas respectively (3).

In Addis Ababa, currently an estimated a total of 300, 000 person are infected with HIV virus of which about 12,000 are children .By mid-1998, about 26,000 AIDS cases had been reported to the City Administration Health Bureau since the start if the Epidemic (4). The number of AIDS cases developing each year from among those persons Living with HIV infection are expected to rise from 22, 000 in 1999 to 37,000 in 2004. Between 1999 and 2004, for example, about 85 persons are expected to develop AIDS each and every day in Addis Ababa (4).

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Therefore, health care institutions in Addis Ababa are expected to create a therapeutic environment for care of these highly growing number of patients with HIV-infection. This include at least: service for HIV testing and counseling, medical care for opportunistic infections, and palliative care for terminally sick AIDS cases. These health care institutions should also ensure that the accidental exposure of patients and health care workers to potentially infectious blood is reduced to an absolute minimum through implementation of universal precautions. All these activities and demands would challenge HCWs and health institutions in the Region.

The main challenges for HCWs include coping with risk and concern of accidental exposure to HIV and continuous social stigma associated with the disease. HCWs have to update themselves with the fast growing new and complex array of pathobiologic and clinical concepts associated with HIV/AIDS. They also face inadequate resources, lack of treatment and cure, complex ethical issues and the devastating impact of watching young patients die (5). The effect of all these will lead to low morale, decreases productivity, and higher turn over of the HCWs. Furthermore, when staff attempt to distance themselves emotionally, become cynical or limit contact, AIDS patients and their families also suffer. All are affecting the attitudes, beliefs and behaviors of HCWs towards HIV/AIDS care (5).

The challenge of HIV/AIDS care towards the health institutions includes equipping the laboratories with facilities for HIV testing and tests for opportunistic infections. The pharmacies should also be better supplied with drugs for opportunistic infections and palliative care. Supplying the high-risk zones areas such as the emergency rooms, labor wards and operation rooms with facilities for universal precaution is also the other important task.

Several researches have been done to assess the impact and challenges of HIV/AIDS on the HCWs and health care institutions. These studies tried to identify particularly stressful factors, both at the organizational level and among individual workers, and try to prevent them or reduce their effects. Results on developing countries showed that local health centers and small hospital lack adequate facilities to diagnose the opportunistic diseases of people with HIV (6). They repeatedly run out supplies of essential drugs, including the ones needed to alleviate distressing symptoms and to manage opportunistic infections. Most of these studies also showed on the need of training and structural support for the HCWs (6).Currently in Ethiopia there is a strong political commitment on this issue of care for people with HIV/AIDS. Indeed one of the specific objectives of the current Ethiopian HIV\AIDS policy as stated on ARTICLE: 2.4 is to promote proper institutional health care for people living with HIV \AIDS (7). However, there is paucity of information and scarce research available on this area. This cross-sectional study attempted to describe challenges and needs of Region 14 HCWs and health institutions towards the care of patients with HIV infection.

I. LITREATURE REVIEW

1. Health Care Workers

A substantial research has been done looking at the challenges of HIV/ AIDS on the HCWs. Some of these literatures repeatedly cover the issues, such as health professionals occupational risk perception, and their practice towards of the protecting themselves from occupational risk. Studies were also done to assess the 'attitudes' of HCWs towards HIV\AIDS patients, and their Perceived needs and sources of information\knowledge on HIV/AIDS.

1.1 RISK PERCEPTION OF HCWs TOWARDS OCCUPATIONAL HIV INFECTION

Prospective studies demonstrate that the risk of HIV transmission of HIV per episode of percutaneouse exposure to HIV infected blood is approximately 0.4%(i.e.1 per 250 exposure). These studies also suggest that the risk of HIV transmission per episode of mucous membrane or non intact skin exposure to HIV infected blood is less than associated with a percutaneouse exposure although transmission resulting from such exposure has been reported. While there is a theoretical risk associated with micro abrasions in apparently intact skin, there is no documented evidence of HIV transmission via this type of exposure (8).

The fact that HIV is possibly transmitted occupationally coupled with the fatal prognosis associated with AIDS lead to concern about the risk of occupational HIV infection. Different studies were done to assess the level of concern of HCWs towards occupation risk. Gorden et al examined the risk perception of over a thousand hospital workers towards occupational infection (9). In this study it was found that fifteen percent of the HCWs believed AIDS is more common among hospital than other non high-risk persons. Over two –thirds of the HCWs believed that AIDS is easily transmitted by needle stick injuries. One fourth of the hospital workers expressed extreme anxiety in dealing with AIDS patients (9).

1.2 PRACTICE OF HCWs TOWARDS PREVENTION OF OCCUPATIONAL HIV INFECTION

As the epidemic of the acquired immunodeficiency syndrome (AIDS) expands, HCWs in many locations are likely to be at increased risk for exposure. Universal precautions should be applied to all patients in order to decrease the risk of occupational transmission of HIV. Different studies have been carried out to assess the practice of HCWS towards the implementation of universal blood and body fluid precautions .

Researches suggest that despite the high-risk perception of the health care workers towards occupationally acquiring HIV infection there is quite low level of practice of HCWs towards prevention occupationally acquired HIV infection. This was started to be seen from the earlier CDC report. The report has documented seroconversion in the "famous "three HCWs associated with non needle exposure

to blood from HIV-infected patients. These HCWs had coetaneous and mucous membrane exposure to infected patients' blood and had not followed recommended precautions (10).

Another study on the occupational exposure to the risks of HIV infection among health care workers in Mwanza Region, in Tanzania also showed that 31% of the total 434 health workers had splash accidents. Despite all the above incidents of exposure there were inconsistent and/or improper practice of universal precaution (protective practice). For instance only few health workers wore glove during venepuncture (6%)and wound dressing and none of the labour ward staff used mask (11).

1.3 HCWs ATTITUDE TOWARDS AIDS AND PWA

Different factors were found to affect the attitude of the health professionals towards AIDS and PWA. Some of these factors include the stigma associated with the disease, the futile sense of working with dying cases of AIDS and the risk perception of the HCWs towards occupational HIV infection. The perception associated with catching AIDS have varied from the slight albeit realistic, fear of direct inoculation with blood, to the more fanciful notion that AIDS can result from merely touching such patients. The public fearful of the risking AIDS by contributing blood has curtailed blood donations (12). HCWs were not immuned to this fear, anxiety, and hysteria of AIDS.

Studies were done to assess the presumed effect of this level concern of HCWs occupation risk to restrictive their attitudes at work. For instance Joan Dworkin et al studied relationship between willingness to work on an AIDS unit and worry of HCWs towards acquiring occupational HIV-infection. Those HCWs who were unwilling to work on an AIDS unit were more likely to be worried about treating AIDS patients, about getting infections and about their own health. This finding had significant association. Among nurses there was a significant association between unwillingness to work on an AIDS unit and worry about health and worry about spreading HIV infection to their families (13)

Another survey studying the attitudes, conducted among all registered medical and dental practitioners in Singapore in 1996,showed that although a large majority felt that they had the ethical obligation to treat HIV patients, only half of them indicated their willingness to do so if they were given the choice. The majority (62.3%) supported the idea of routine preoperative HIV testing for patients, but fewer (40%) supported mandatory HIV testing for health care workers (14).

1.4 NEEDS AND SOURCES OF INFORMATION\KNOWLEDGE HCWs ON HIV/AIDS

Reviews of the literature indicate that HCWs feel ill-informed about HIV/AIDS and that poor knowledge is associated with anxiety and negative attitudes towards infected patients and their care (15). Different methods and sources of information can be used to update the knowledge of the HCWs on HIV/AIDS. Some of these established routes of continuing education include: hospital in-service programs,

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out side institutions continuing education programs, national and international conferences on AIDS, medical and other journal, specialize AIDS letters, and texts (16).

Some studies have sought to identify the sources of HIV/AIDS information available to HCWs, .For instance, a study done on Egyptian health care showed that their main source of information about AIDS was the television, radio and ordinary press. Forty-five percent got their information from textbooks or scientific literature. Almost 95.4% felt the need for more information about infection and disease. (17)

2. Supplies, Equipments And Drugs For HIV/AIDS Health Care

2.1 Supplies, And Drugs for Opportunistic Infection And Palliative Care

The arrival of the HIV epidemic has increased the demands for health care. One of these demands is care for Opportunistic infections. Studies have shown that before dying a typical adult AIDS patient will suffer two or more episodes of chronic Diarrheal disease, ten episodes of oral thrush and about three skin infections. In addition, approximately 50 percent of adult AIDS patients will fall ill from pneumonia and\septicemia, and 15-25 percent will suffer from tuberculosis, severe headache, and/or neurological diseases (18).

The other major health problem of patients with HIV infection is the provision of palliative care for terminally sick AIDS cases. Debilitating symptoms like pain, gastro intestinal discomfort and depression are almost universal on patients with HIV\AIDS during the last period of their illness before death. For example pain is the most frequent symptom affecting more than 75% of AIDS patients during the last stage of their illness. Of the different types of pain is experienced by these patients neuropathic pain affecting is 30-40%of patients (19).

Studies were done to assess the availability of appropriate infra structures (drugs, supplies and equipments) needed for opportunistic infections and palliative care. These studies showed that even big teaching hospitals affiliated with urban medical schools have serious problems. Some of these studies include the UNAIDS survey of 22 university teaching hospitals in 19 African and 3 Asian cities completed in 1997 (20). The hospitals surveyed had suitable diagnostic facilities and the right drugs to treat three conditions – pneumonia, pulmonary tuberculosis and oral thrush.

However, for any other HIV-related illness, diagnostic capacity and drug supplies were so inadequate that a patient would have less than a 50% chance of being correctly diagnosed and treated. This was true, for instance, of Kaposi sarcoma (a frequent HIV-related cancer), serious fungal infections such as cryptococcal meningitis, and viral infections affecting the brain. Relief for difficulty in breathing was unavailable in half the hospitals (20). Strong painkillers were available in only two-fifths, despite the fact that most people with advanced HIV infection

require pain control at some point (20). In Zambia where the tuberculosis caseload increased six fold between 1992 and 1998, proper treatment became increasingly problematic because health facilities kept running out of TB drugs (20).

A study in Ethiopia showed that in the majority of the health institutions, most drugs for HIV\STD care were not available and those available were not adequate. STD diagnostic facilities were lacking in many (51.9%) of the centers. The study showed that simple examinations such as wet smear was available in only 7.7% among the different level of health institutions involved in the study (21).

2.2 Equipments And Supplies For Universal Precaution

The other problem of infra structure, identified by different researchers, is availability of equipments and supplies for implementing the principles of universal precaution. The Ethiopian HIV\AIDS policy strategy ARTICLE 4.3 states that soliciting stringent precaution measures for sterilization and disinfection of medical instruments in public and private health institutions to prevent HIV transmission shall continuously be checked and monitored (9).

A study in Tanzania on the availability of protective clothing showed that the Shortage of gloves was widespread with more than half of the out patient departments had no gloves at all and only 11%of the wards had more than ten pairs of new gloves in stock. And protective eyewear was only available in one hospital and masks were rarely available in the labour rooms (11).

In summary, it is well observed from the above review that there are potential difficulties for health institutions in providing optimal care for HIV infected People. One of these difficulties is the burden of care that falls on the HCWs .The impact of HIV/AIDS care on the HCWs has been overwhelming in terms of concern of occupational risk, practice of universal precaution and the challenge to updating their knowledge to several of the fast growing pathobiologic and, clinical concepts of HIV infection.

The other difficulty of the health institutions is to build the capacity of their infrastructures For HIV/AIDS care. These include the availability of appropriate diagnostic facilities for HIV testing, and other HIV related illnesses, drugs for opportunistic infections & palliative care, and pharmaceutical supplies for universal precaution such as protective materials.

Many health care institutions have assessed these needs of the HCWs and their infrastructure for HIV/AIDS care. Both the WHO and MOH also emphasize on the need of assessing and strengthening these needs of the health Institutions. But there are only few studies on this area in health institutions in Ethiopia. So this study tried to fill the gap by assessing some of the areas HCWs and resource needs of public health institution in Addis Ababa for HIV/AIDS patient care.

III. OBJECTIVES

General: To Describe The Challenges And Needs Of HCW's And Health Institution's In Region14 In Rendering Care For HIV/AIDS Patient.

Specific:

1. To describe the attitude and the risk perception of HCWs in the Region on HIV/AIDS care
2. To assess the perceived needs and sources of information/knowledge of HCWs on HIV/AIDS
3. To describe the practice of the HCWs at high risk zones towards prevention of occupation HIV infection .
4. To assess the availability of diagnostic facilities and pharmaceutical supplies for HIV/AIDS health care in the Region 14 Health institutions.
5. To describe the availability of facilities for universal precaution in the health institutions.

IV. SUBJECTS AND METHODS

1.Study Area:

The study was done in Addis Ababa. Addis Ababa has an area of 540 square kilometers, and altitude of 2200- 2800 above sea level. It is divided in to six administrative Zones, twenty-eight Woredas and three hundred twenty eight Kebeles (22). According to the Central Statistics Authority estimate the projected 1998 population of Addis Ababa was about 2.4 million (22).

The study was conducted in the health institutions under Region 14 health bureau. Currently there are five hospitals, eighteen health centers and eight health stations under the Addis Ababa health bureau (23). Each of the hospitals has one main laboratory, two pharmacies OPD, and In-patient wards. Each health center has one laboratory, one pharmacy and OPD.

According to the MOH August 1999 health and health related indicator about 180 physicians (both general practioners and specialists) and 406 nurses (both staff and specialized nurses) are estimated to work in Region 14 health institutions. In addition around forty AAU physicians (both residents and specialists) are also expected to work in the three of the Region 14 Hospitals. All these made the total number of HCWs working in these institutions to be slightly greater than six hundred (626). A total of 292 HCWS are estimated to work in all the health centers. When subtracting half the number of HCW working in the health centers (146)

from the estimated total number(626) the target number of the study population was estimated to be close to five hundred (480) .

1.2 **Study Population:**

Four different study groups were included in the study corresponding to the different objectives. These include:

1. Physician and Nurses working in all the five Region 14 hospitals and in half (10) of the Region health centers.

2. Diagnostic laboratories in the Region 14 hospitals and in the selected ten health centers.

3. Pharmacies in the five Region 14 hospitals and in the selected ten health centers.

4. Out-patient departments, in patient wards, labour wards and operation rooms in all the above institutions under the Region 14 Health Bureau.

1.3 Study Design And Sampling Procedures

A cross-sectional descriptive study design was used to study the HCWs and health institutions (Hospitals and Health centers) under the Region 14 health Bureau. (Census (no sampling) of all the Region five hospitals was included in the study. The health centers are relatively larger (>3x) in number compared to the Hospitals. Therefore 50% (10) of the health center were included in the study. Convenience sapling technique was used for the selection of the ten health, which were included in the study. Because the health centers were geographically widely dispersed free transportation was arranged with an NGO (MSF- Belgium), which has transportation facility to ten of the health centers. Therefore by convenience these health centers were sampled and included in the study. Convenience was based on for transportation. Therefore, 50% of the health centers laboratories and pharmacies, while all laboratories and pharmacies of the hospital were included in the study.

The formula for sample size calculation for cross sectional survey was used to determine the minimum representative sample size of HCWs. Fifty percent prevalence and 5% marginal error gave the sample size of 234. Adjustment was also made to increase the sample size by twice (464) to control for factors like non-participation, non-response, and accuracy of answers and data transcription. Since 464 is close to the total target population it was decided to distribute to all physicians and nurses who were present and volunteered in the selected health institutions.

1.4 Survey Instrument And Measurement

Four survey instruments were used corresponding to different specific objectives of the study. All the instrument were prepared in English, pretested, and corrected accordingly before used for the main study. The first survey instrument was a self-administered questionnaire containing different measurement scale (annex1). The first 5-item attitude measurement scale was used to describe whether HCWs were associating AIDS and PWA to certain socially stigmazing conditions such as promiscuity or prostitution. The other 4-item attitude measurement scale was used to describe the level of comfort of the HCWs towards the different HIV/AIDS patient care activities. The questionnaire also had measurement scale for the HCW's perception and practice towards of occupational HIV-infection. Four-item measurement scale was also included to assess the needs and perceived needs of the HCWs on sources of information on HIV/AIDS.

The second instrument was a structured checklist containing standard list of diagnostic tests recommended by WHO for major opportunistic infection and HIV-infection in health settings (annex 2). It comprises 25 item questions with three Item scale for parasitic test, three Item scale for haematologic tests, six Item scale for bacteriologic tests, six Item scale for viral tests and five Item scale for other related tests.

The third instrument was a structured checklist containing standard list of drugs recommended by WHO for major opportunistic infections (annex 3). It comprises questions with 11 item scale for anti-fungal drugs, 18 item scale for antibiotic drugs 5 item scale for anti TB, item scale for anti parasitic and 4 item scale for drugs for skin, 4 item scale for drugs for CNS 6 item scale for drugs for analgesics.

The fourth instrument was a structured checklist containing standard list of facilities and supplies recommended by WHO for universal precaution of HIV-infection control in the health settings (annex 4). It comprises 7 Item scale for general hygienic facilities and 11 Item scale for HIV-infection control

1.4 Data Collection

Due to the presence of unanticipated financial and technical constraint the data collection was done in two phases.

Phase I

During this phase of data collection, the self-administered questionnaire prepared for HCWs was distributed to all physicians and nurses in the study institutions. The distribution was in such a manner, that each physician received his questionnaire after brief orientation of the purpose of the study and some instruction about the questionnaire at the usual physician's morning meeting session.

Similarly, all nurses who participated in the study enrolled after a brief orientation of the purpose of the study through their matrons/ head nurses

Phase II

Five Health Assistants were recruited and trained to conduct the qualitative observational survey of the health facilities for the third and fourth objectives of the study. One supervisor also participated in the study. Training was given to both the data collectors and the supervisor by principal investigator. Data collectors were trained how to properly collect and record the data on the questionnaire format. The supervisor was also trained on how to monitor and check for completeness and clarity of the filled questionnaire. Following their five days training the data collectors also practiced their activities during the pretest session held at the Tikur Anbessa Hospital for another three days. During the main data collection the principal investigator traveled to all health institution and supervised the activities of the data collectors and the supervisor by reviewing the completed questionnaire. The principal investigator also interviewed heads of the laboratory, heads of the pharmacies and head nurses of each O.P.D. and In-patient wards in all the surveyed institutions.

1.5 Ethical Clearance And Considerations

This study was approved by the ethical clearance committee of the Medical Faculty of the Addis Ababa University. Efforts were made to enroll only those volunteer participants. Therefore no HCW was involved in the study against his/her will. Before the questionnaire was administered, an explanation was given on the value of the study, how to complete the questionnaire. Anonymity was guaranteed and confidentiality was maximized by the use of anonymous questionnaire.

1.6 Data Entry And Analysis

Data were entered into EPI-info statistical software programme. Frequencies and percentages were calculated for all the variables of the study. Odd's ratio with 95% confidence interval were used for comparison between groups

V. Results

General Characteristics The Study Population.

Three hundred and one health professionals completed the self-administered questionnaires. This is equivalent to 30% in excess of the required calculated representative sample size (234) for the HCWs. One hundred and twenty seven (42.2) of the respondents were physicians while 174 (57.8) were nurses. One hundred and forty two (47.2 %) of the participants were males while the remaining 159 (52.8 %) were females. The median age of the participants was 33years and with the mean age of 31.2. (table1).

The majority (70.4%) of the respondents were Orthodox Christians. This is followed by Protestant (17.90%), Muslim (17.0%), Catholic Christian (1%) other religious groups comprised (2.7%). The majority (59.8%) of the participants were married, 36.5%were single. 1.3%divorced and 2.3%were widowed.

Table 1. The socio-demographic characteristics of the 301 HCWs who participated in survey on HIV/AIDS, Addis Ababa, August 1999

Age (Years)	Number (%)
<30	64(21.3%)
30-34	76 (25.2)
35-39	71 (23.6)
40-44	34 (11.3)
45-49	20 (6.6)
50-54	8 (2.7)
55-59	1 (0.3)
No response	27 (9.0)
Marital Status	
Married	180 (59.8)
Single	110 (36.5)
Divorced	4 (1.3)
Widowed	7 (2.3)
Ethnicity	
Amahara	167 (55.5)
Oromo	61 (20.3)
Tigre	34 (11.3)
Gurage	15 (5.0)
Others	24 (8.0)
Religion	
Orthodox Christian	212 (70.4)
Catholic Christian	3(1.0)
Protestant Christian	54 (17.9)
Muslim	24 (8.0)
Others	8 (2.7)
Occupation	
Physician	127 (42.2)
Nurse	174 (57.8)

Attitudes Of HCW's Towards Patient With AIDS

Table 2 presents the result on attitudes of HCW's towards patient with AIDS. Overall, both physicians and nurses had a very positive attitude towards patient with HIV\AIDS. Physicians and nurses slightly differed in their attitudes towards people with AIDS, with physicians reporting a more positive attitude towards the care of people with AIDS than nurses. While 95.3%(121) of the physicians and 75.8%(132) of the nurses sympathize and understand HIV\AIDS patients, 81.8% (104) of the physicians and 79%(137) of the nurses stated that HIV\AIDS patients should not be isolated.

Table 2. Attitudes of HCW's towards patient with AIDS, Addis Ababa, August 1999

Evaluation	Physicians	Nurses	TOTAL
Scale	N (%)	N (%)	
Concerned &Tender feeling for AIDS patients			
Agree	101 (79.5)	140 (80)	241
Disagree	64 (5)	14 (8)	20
Indifferent	20 (16)	20 (12)	40
Feel that AIDS patients are Responsible for acquiring their illness			
Agree	33 (26)	87 (50)	120
Disagree	74 (58)	53 (30)	127
Indifferent	20 (16)	34 (20)	54
Feel that AIDS patients deserve Sympathy &Understanding			
Agree	121 (95.3)	132 (75.8)	253
Disagree	1 (0.7)	16 (9.2)	17
Indifferent	5 (4)	26 (15)	31
Feel that AIDS patients should be Isolated			
Agree	10 (9)	25 (14) 35	
Disagree	104 (81.8)	137 (79)	241
Indifferent	13 (10.2)	12 (7) 25	
Believe that HCWs should not refuse AIDS patients			
Agree	103 (81.1)	140 (80)	243
Disagree	7 5.5)	19 (11)	26
Indifferent	17 (13.4)	15 (9)	32

Comfort Level HCW'S To Specific Contacts Involving PWA

Table 3 shows the comfort level experienced by health professionals in treating and caring AIDS patients. Physicians and nurses slightly differed in their level of comfort to specific contacts involving PWA. Forty five percent of the physicians and 51% of the nurses were uncomfortable when taking sexual history of their patient. The percentage of the HCWs who would be comfortable to different contacts involving PWA decreased as the type of the contact become more invasive. When drawing blood from HIV\AIDS patients Only 13 percent of the physicians and 28 % of the nurses were comfortable.

Table 3. Feeling of HCW's to specific contacts involving PWA, Addis Ababa, August 1999

Contact	HCWs	
	physicians	Nurses
	n (%)	n (%)
When taking sexual History from HIV infected patient		
Comfortable	43(34%)	50 (36%)
uncomfortable	56(45%)	64 (51%)
Indifferent	26 (21%)	32 (14%)
When Drawing blood from HIV infected patient		
Comfortable	17 (13%)	49 (28%)
Uncomfortable	79 (62%)	74 (43%)
Indifferent	31 (24%)	51(29%)
When Performing\Assisting surgery on HIV infected patient		
Comfortable	13 (11%)	32(26%)
Uncomfortable	80 (70 %)	59(48%)
Indifferent	20 (17%)	32(26%)

Frequencies are based on valid numbers

HCW 'S Response Towards Occupational Risk Perception

Table 4 indicates that the majority of the HCWs feel at a great risk of acquiring HIV infection through their occupation. About 83. % of nurses and 85% of the physicians agreed to the statement that heath professionals are at a great risk of acquiring HIV infection through their occupation. Half of the physicians and nurses stated that there is still high risk to the health professionals even after the normal hygienic conditions and normal precautions were taken. (Table 4).

Table 4. HCW 's response to items on Occupational risk perception Addis Ababa, August 1999

Response	Health Professionals	
	Nurses	Physicians
	N= 174	N= 127
HCWs are at"great" Danger of acquiring HIV due to their occupation		
Agree	83.%	85%
Disagree	11.%	11%
Indifferent	6 %	4 %
Risk of HIV infection after stick injury with HIV contaminated needle		
.< 1%	27%	54%
.> 10%	40%	30 %
.Do not Know	33%	16 %
After Normal Precaution Risk to the HCWs		
. Still high	50%	50.8%
. Almost No	50%	49.2%

Response To Perceived Needs And Sources Of Information Of The HCWs On Update Of HIV/AIDS Care

The results on table 5 indicate nearly seventy two percent of treating nurses and 78.4% of the physicians stated that they have difficulties in the management HIV/AIDS cases. When asked about their most difficult part 10% of the nurses and 28% of the physicians stated it is the medical care (opportunistic infection), while 32.2 % of the nurses and 23.7% of the physicians stated it is the psychological care (counseling) of PWA.

Eighty four percent of the nurses and 78.8 % of the physicians believe that their training on HIV/AIDS care is deficient. The majority (66.7%) of the nurses reported that their main source of information about AIDS was the media and only 10.6% indicated journals as their main source (table5). In contrast, the majority (55.8%) of the physician said that their main sources of information about HIV\AIDS are journals and only 14.8%of the physicians indicated mass media as their main sources of information.

TABLE 5. Perceived Needs and Sources of Information of treating HCWs on update of HIV/AIDS, Addis Ababa, August 1999

Response	Health Professionals	
	Nurses n (%)	Physicians n (%)
Have difficulties in the management HIV/AIDS cases		
Yes	99 (71.8%)	92 (78.4%)
No	32 (28.2%)	24 (21.6%)
Most difficult part		
Medical	10 (9.6%)	26 (28.3%)
Psychological	27(26%)	24 (26.1%)
Social	28 (26.9%)	23 (25.3%)
Other (drugs & supplies)	45 (43.2)	48(52.2)
Believe that my training on HIV/AIDS care is		
Deficient	80 (84.4%)	82 (78.8%)
Adequate	18 (15.6%)	26 (21.3%)
Main source Of Information on update of HIV/AIDS		
Mass media	109 (67.7%)	19 (14.8%)
Books	35 (21.7%)	34 (49.3%)
Journals	17 (10.6%)	67(55.8%)

Frequencies are based on valid numbers

More than one answer was given by the respondents, therefore percentages may be more than a 100%

Response Of Hcws Towards Practice On Prevention Of Occupational Risk

Practice of those staff working in the high risk areas (Obstetrics and surgical department) towards prevention of occupational risk were measured. Practice on protective clothing, such as the frequency of wearing masks and eye goggle when performing different procedures. Findings showed that the majority 47(69%) of the health professionals who were working in the Obstetrics department reported that they rarely put on masks when attending labour while only nine (13.2%) of them reported, they do it often (Table6). Again the majority these professionals 57(83.0%) said that they rarely wear goggle when performing or assisting surgery when only five (7.3%) report wearing goggle when performing or assisting surgery.

In contrast the majority 35(79.9%) of the health professionals who were working in the surgical department report that they often put on masks when performing or assisting minor surgical procedures while only four (9%) of them report, they do it rarely (Table 7). But half of these professionals 22(50.0%) reported that they wear goggle rarely when only fourteen (31.8%) report wearing goggles often when performingorassistingsurgery.

Table 6. Practice of HCWs towards prevention of occupational risk in Obstetric department, Addis Ababa, August 1999

Variable	Total n=68 n (%)
Put on Mask when attending delivery	
rarely	47 (69.1)
Sometimes	7 (10.3)
Often	9 (13.2)
Non-response	5 (7.4)
Put on Eye goggle when performing/assisting major surgery	
Rarely	57 (83)
Sometimes	2 (2.9)
Often	5 (7.3)
Non-response	4 (5.8)

Table 7. Practice HCWs towards prevention of occupational risk in surgical department, Addis Ababa, August 1999

Variable	Total n=44 Minor
Put on Mask when performing/assisting minor surgery	
Rarely	4 (9.0)
Sometimes	1 (2.3)
Often	35 (79.9)
Non-response	4 (9.0)
Put on Eye goggle when performing/assisting minor surgery	
Rarely	22 (50.0%)
Sometimes	2 (4.5%)
Often	14 (31.8%)
Non-response	6 (13.6%)

2. Supplies, Equipments And Drugs For HIV/AIDS Health Care

2.1 Availability Of Diagnostic Tests For HIV\AIDS Patients Care

Table 8 shows the availability of diagnostic tests for HIV\AIDS patients care in the surveyed institutions. Among all the required diagnostic tests for HIV\AIDS patient care the least available test were tests for fungal infection where none of the laboratories surveyed had tests such as KOH, and Indian ink. The most available diagnostic test is the test for parasitic infection where all the laboratories have more than 50% of the parasitic tests. More than 50% Hematologic tests were also found in nearly 70% of the laboratories. All the laboratories had only less than 50% of the bacteriologic tests and the majority 79% of the laboratories also had less than 50%of the serologic tests.

Table 8 Availability of Diagnostic tests for HIV/AIDS Patient care

at Region 14 laboratories ,Addis Ababa , March 2000 N=13

Types of Tests.	Laboratories with < 50% of tests	Laboratories with >50 % of tests
Parasitic	0	13
Hematology	3	10
Bacteriology	13	0
Serology	10	3
Other test	7	6

N.B. None of the Laboratory has tests for fungal infection (KOH, Indian ink)

N.B. Two of the laboratories

2.2 Availability of Drugs & Pharmaceutical Supplies For HIV\AIDS Patients Care

Among all drugs selected for comprehensive care of HIV\AIDS patients drugs for skin and CNS drugs were found to be the least available. The majority (77.3%) of the pharmacies had only less than half of the drugs for skin and CNS drugs needed for patients with HIV/AIDS (Table 9). This is followed by anti fungals where only nearly a quarter (27.3%) of the pharmacies had more than 50%of the drugs for fungal infection. Almost sixty percent (59.1%) of the pharmacies had only less than half of the potent analgesics drugs recommended for palliative care terminally sick patient with HIV\AIDS. These included potent painkillers like codeine, codamol and others.

In contrast the most available drugs identified were anti parasitics where all the pharmacies had more than 50% of the drugs for parasitic infestations. This is followed by I.V. fluids and antibiotics where about 63%of the pharmacies had more than half of the I.V.fluied while about 72.2%of the pharmacies had more than half of the antibiotics.

Table 9. Availability of Drugs & pharmaceutical supplies for HIV/AIDS care at Region 14 pharmacies, Addis Ababa , March 2000

Pharmacies N=22

Types of Drugs/supplies	With <50 % of drugs	With>50% of drugs.
Anti-fungals	16	6
CNS Drugs & Drugs for skin.	17	5
Anti-Pain (Analgesics)	13	9
Anti Biotics	6	16
I.V. Fluids	8	14

N.B. All the pharmacies had at least 50 % of the common anti parasitic drugs

Anti TB drugs - Available at all the pharmacies freely

2.3.Availability Of Facilities And Supplies For Universal Precaution-

The availability of facilities supplies and equipments for HIV\AIDS universal precaution in the OPDs, wards, laboratories and minor O.R.is indicated in table 10. Functioning water taps were available in all of the laboratory rooms and minor O.R. And 88.4% the wards also had functioning water taps while only 76.9 %of the O.P.D. rooms had functioning water taps.

Thought 93.3% of the laboratories and minor theaters and 82.7% of the O.P.D.had puncture proof containers for sharp objects, only 60%of the laboratories and minor theaters, 42.3%of the wards and 37.2%of the O.P.D.had the appropriate one handed recapping containers for sharp objects. Both the Wards and O.P.D. use double standard of sterilization method by using their boilers or dry sterilizers and the central sterility units (*CSR) locally found in their respective Wards and OPDs and their Respective Institutions respectively.

Table 10 shows that 82.1%of the. O.P.Ds had functioning boiler but only 66.7%the wards had functioning boilers. Similarly 66.7%of the O.P.D.s had dry sterilizer while only half of that percentage (33.3%)of the wards had dry sterilizer. Sterilization strip test was found in only 8.7% of the O.P.D.s and 16.7%of the wards. The perceived adequacy of the high-level chemical disinfectant as measured by the response of the respective head nurses showed that 66.9%of the O.P.D. Head nurses disagreed to the statement of shortage of sodium hypochlorite and only 37.1% of the ward head nurses gave similar responses.

Table 10. Availability of Facilities, supplies & equipment for HIV/AIDS

universal precaution. at region 14 health facilities , Addis Ababa , March 2000

	OPD(n=216)	WARD(n=172)	Laboratory &minor O.R.(n=16)
Types of		Present in percents.	
Facilities	OPD	WARD	Laboratory & minor O.R.
1-general hygienic facilities			
Water Taps (Functioning)	76.9	88.4	100
Soap	49.3	39.4	66.7
Container for Sharp objects	88.8	92.4	100
Puncture Proof	82.7	92.5	93.3
One Hand Recapping	37.2	42.3	60.0
2.Infection control			
Boiler	82.1	66.7	(*CSR)
Dry sterilized	66.7	33.3	
Autoclave	31.0	5.3	
Sterilization Strip test.	8.7	16.7	
HLCD Perceived NO Shortage	62.9	37.1	
3.protective clothing			
Gloves Perceived no shortage	62.8	23.8	

N.B.- All Wards And O.P.D. Use The Central Sterility Units (*CSR) In Their Respective Institutions

VI. DISCUSSION

This cross sectional survey of heath institutions in Addis Ababa tried to describe the preparedness of the institutions for the increasing number of patients with HIV\AIDS disease coming to them. The findings of the study are discussed in accordance with the respective resources of the institutions.

1. - Health Professionals

1.1 Attitude Towards HIV\AIDS Patients

In this study two different measurement scales were used to assess the attitudes of health Professionals towards patients with HIV\AIDS. The result of the first scale clearly indicated there is a general tendency of sympathizing and understanding patients with HIV\AIDS by the HCWs. A higher percentage 95.3%(121) physicians do sympathize and understand HIV\AIDS patients than nurses 75.8%(132). With respect to isolation of patients with HIV/AIDS a majority of each profession 81.8% (104) of the physicians and 79%(137) of the nurses stated that HIV\AIDS patients should not be isolated. All these showed that the health professionals are not stigmatizing patients with HIV/AIDS due to their diagnosis. This also implies that HCWs have a positive attitude towards patients with HIV/AIDS, which is a favorable ground for the care of PWA in the Region.

Other studies done in Ethiopia on the attitude of health workers regarding HIV\AIDS showed similar findings. For instance, a study on attitude of health workers regarding HIV\AIDS in south Gonder zone indicated that unfavorable attitude (score between 0-7) was observed among only (8.5%)13 of the health workers (24). This finding also go with earlier study on the attitude of health professionals in Addis Ababa towards HIV\AIDS which showed that 113 (93%) of the health institution workers responded that AIDS is not a problem of the patient alone (25). All these different studies show similar findings of positive attitudes of the HCWs towards PWA in different areas of the country. This might probably be related to the religious and cultural values of the society of helping people in time of crisis like sickness. This was also well observed in a community based study of the attitudes of the community towards the care patients with HIV/AIDS (25) . This study was able to show that there is a positive attitude of the community towards the care of the patients at the home-based level (25).

The second scale was used to measure the level of comfort of the health professionals to different patient care activities. Though heath professionals were sympathizing and understanding, they were also found to be uncomfortable in performing certain activities on patients with HIV\AIDS. While 185, (61.5%), responded that they are not comfortable when discussing about HIV with their patients, 153, (50.8) were uncomfortable about drawing blood from the HIV\AIDS patients and only 45 (19.1%)of the health professionals responded that they were comfortable when performing or assisting in surgery on HIV-infected subjects.

This scale generally implies that the percentage of HCWs uncomfortable to different types of contact increases as the type of contact become more invasive. This clearly might be related to the concern of the HCWs towards occupational risk of HIV infection.

Findings from other African countries showed a relatively similar result. Like for example in Nigeria, at a Nigerian teaching hospital on staff attitudes revealed that about one in three nurses would hesitate to nurse a PWA, while half would not participate in birth delivery. Also, about a quarter of doctors would hesitate to treat PWA while one in three would not carry out surgery despite adequate precautions (26).

1.2 Risk Perception Of The HCWs Towards Occupational HIV Infection

In this study it was seen that HCWs show high-risk perception towards occupational HIV infection. About 83.3% of nurses and 85%of the physicians agreed to the statement that heath professionals are at a great risk of acquiring HIV infection through their occupation. This may have clear advantage towards the prevention of occupational HIV infection. However, the finding that significant portion of the HCWs (50%) perceive that there is still high risk to the HCWs even after the normal hygienic conditions and normal precautions were taken might have an impact on the intention of the HCWs to care for PWA especially those requiring invasive activities.

In Ethiopia the earlier study has also shown that not less than 10%of the health care institution health workers admitted that will be frightened of AIDS patients and therefore give less care (25).

1.3 Practice Of The HCWs Towards Occupational HIV Infection

Despite all the above high-risk perception of the HCWs towards occupational HIV-infection low levels of practice of prevention of this risk is observed. Wearing protective clothing such as masks and eye goggle at the high-risk zones such as Obstetrics and surgical department was low. Our findings showed that the majority 47(69%) of the health professionals working in the Obstetrics department reported that they rarely put on masks when attending labour. Again the majority of these professionals 57(83.0%) reported that they rarely wear goggle when only five (7.3%) reported wearing goggle often when performing or assisting surgery. Similarly, the majority of these professionals (50.0%)22 reported that they wear goggle rarely.

This high-risk practice of the HCWs could be the effect of the summation of the following three factors. First it could be due to low level of awareness of the importance of wearing protective clothings in the prevention of HIV infection. Secondly it could be related to scarcity of facilities and supplies for universal precaution like that of the availability of protective clothings as observed on the result of infrastructure.

Thirdly it could also be due lack of work place policies on implementation of Universal precaution.

In a similar study done on occupational exposure to the risk of HIV infection among health care workers in Tanzania showed that there were inconsistent and/or improper practice of Universal precaution (protective practice) since only few health workers wore glove during venepuncture (6%)and wound dressing and none of the labour ward staff used mask (11). In Ethiopia the PHRD study also showed that only 24.5%of the health workers were observed to have protective devices against contamination while examining STD patients (21)

1.4 Response To Perceived Needs And Sources Of Information Of The HCWs On Update Of HIV/AIDS Care

Several studies were carried out on perceived needs and sources of information/ knowledge of HCWs on different area of HIV\AIDS care (11). In our study significant portion of treating HCWs have expressed some of their difficulties in the management of PWA. When asked about their most difficult part 28% of the physicians and 10% of the nurses stated it is the medical care (opportunistic infection), while 32.2 % of the nurses and 23.7% of the physicians stated it is the psychological care (counseling)

Different factors affect and determine the needs of information/ knowledge of the HCWs on HIV\AIDS care. One of these factors is whether or not they were exposed to several of the newly growing pathobiologic and, clinical concepts of HIV infection during their basic training. In our study eighty four percent of the nurses and 78.8 % of the physicians believe that their training on HIV/AIDS care is deficient. This could probably related to the fact that significant portion (42.5) 128 of the HCWs had their basic professional training before the HIV/AIDS epidemic in Ethiopia coupled with the fast growing new pathobiologic and clinical concepts associated with the virus. This might also be results of social desirability bias because responding HCWs might have a desire to have more training and the benefits associated.

In response to the above needs of health professionals many health care institutions have targeted education programs like in-service training or continuing medical education to all levels of staff for updating the knowledge of their health care workers. Both the WHO and the Ethiopian national HIV\AIDS policy also emphasize on the need of training of the health care worker on HIV\AIDS care. Henry et al. (29) found that attendance at an AIDS in-service program was associated with greater AIDS-relevant knowledge among hospital and clinic workers.

The other factor which affect and determine the knowledge of health professionals on HIV\AIDS care is the type and accessibility their sources of information on HIV/AIDS.

Some of these established routes of continuing education include: medical journals, specialize HIV/AIDS publications, revised guidelines, out side institutions continuing education programs, seminars, national and international conferences on AIDS, and texts (16). But the finding of this study revealed that the sources of information on update HIV/AIDS care were inadequate for the health professionals particularly for the nurses. More than half of the nurses (66.7%) reported that their main source of information about AIDS was the media while, greater than half (55.8%) of the physicians said that their main source of information about HIV\AIDS are journals. Similar study done on Egyptian health care showed that their main source of information about AIDS was the television, radio and ordinary press; and 44.8% got their information from textbooks or scientific literature. (17).

2. Supplies, Equipments And Drugs For HIV/AIDS Health Care

2.1 Availability Of diagnostic Supplies & Drugs for Opportunistic Infection and Palliative Care

Earlier studies in Ethiopia have shown that there were problems of supplies and drugs for HIV/AIDS care. One of these was the finding of the PHRD study on assessment of health care institution for quality of care on HIV\ STD.

This study showed that STD diagnostic facilities were lacking in many of the centers (51.9%) and even wet smear examination was available in only 7.7% of the centers.

This finding was comparable to the results in our study where scarcities were identified. Like for example among all the required diagnostic tests for HIV\AIDS patient care tests for fungal infection were least available. This is because none of the laboratories surveyed had tests like KOH, and Indian ink .All and the majority (76%) of the laboratories were also found to have less than half of the serologic tests and bacteriologic tests needed for HIV/AIDS health care.

Concerning drugs our study showed that among all drugs selected for opportunistic infections drugs for fungal infections and skin diseases were found to be scarcely available. This is because only a quarter (27.3%) of the pharmacies had more than 50%of the drugs for fungal infection and the majority (77.3%) of the pharmacies had only less than half of the drugs for skin diseases. Similarly the finding of the PHRD study showed that in the majority of the health institutions, most drugs for HIV\STD care were not available and those available were not adequate. Comparable finding was also observed from the earlier studies. Another study showed that 81%(103) of the health institution workers in Addis Ababa had the belief that hospital care do not fulfill the needs of AIDS patients. The majority of them attributed this to lack of drugs and instruments (20).

Our study also revealed that drugs needed for palliative care of terminal sick patient with HIV/AIDS diseases were scarce. This is observed from the findings that the majority (60 %) of the pharmacies had only less than half of potent Palliative drugs which included potent pain killers like codeine, codamol and the

majority (77.3%) of the pharmacies had only less than half of sedatives (CNS) drugs needed for these patients with HIV/AIDS. All these informations are indicating that this important area of HIV/AIDS care need more attention in order to improve the quality of PWA.

In contrast there were also areas, which were encouraging. Encouraging findings were observed for parasitic and hematologic tests. This is because more than 50percent of the parasitic tests and Hematologic tests were available in all and nearly 70% of the laboratories respectively. Like for example more than 50% of the drugs for parasitic infestations were available in all the pharmacies. This is followed by I.V. fluids and antibiotics where about 63%of the pharmacies had more than half of the I.V.fluid while about 72.2%of the pharmacies had more than half of the antibiotics.

2.2 Availability Supplies for Universal Precaution

(General Hygienic Facilities supplies for infection control and Protective Clothing)

Findings of general hygienic facilities showed that availability of functioning water taps were in fair condition than the availability of appropriate one handed recapping container for sharp objects. Functioning water taps were observed in all of the laboratory rooms and minor O.R. But 11.6% the wards also had no functioning water taps.

The majority (93.3%) of the laboratories and minor theaters and (82.7%) of the O.P.D. had puncture proof containers for sharp objects. However, only 37.2%of the O.P.D 42.3%of the wards and 60%of the laboratories and minor theaters had the appropriate one-handed recapping containers for sharp objects.

As for the availability of high level chemical disinfectants like sodium hypochlorite and protective clothing like gloves. It was observed that In-patient wards were were relatively in short supplies of these materials than the O.P.D. Nearly 67 % of the O.P.D. head nurses disagreed to the statement of shortage of sodium hypochlorite while only 37.1% of the ward head nurses gave similar response. Similarly 62.8%of the O.P.D. head nurses disagreed to the statement of shortage of Gloves While only 23.8% of the ward head nurses gave similar response. This difference between the OPDs and Wards indirectly reflecting the difference between the Hospitals and health centers.

This is because Wards are found mainly in the hospitals. The finding clearly indicated that Wards (hospitals) are relatively in short supply of equipments and supplies than the OPDs. These differences might be related to the fact that the heavy works load and relatively more contamination of instruments is expected to occur in the Wards (Hospitals) than the OPDs. This shows that there is a need to give priority to the Wards (Hospitals) in improving the supply of materials for universal precaution

In addition to all the above shortages the observation that only two of the surveyed labour wards were found to have protective eye goggles. Again the fact that Sterilization strip test was found in only 8.7% of the O.P.D.s and 16.7%of the wards shows this area needs to be improved. The Ethiopian national HIV/AIDS policy also emphasize this through Article 4.1 showing the need and the commitment by stating that provision to health care institution shall be made to ensure that adequate sterilization and Universal precaution procedures are adhered to at all levels.

VII STRENGTH AND LIMITATION OF THE STUDY

The study was able to include all the (5) hospitals and half (10) of all the health centers under the Region 14. This would increase the representativeness /generalizability of the research's findings to health institutions in Addis Ababa. The application of both quantitative methods and qualitative methods, like the observation of infra structure supplementing the quantitative method, is other major strength of the research.

On the other hand the due to resource (time & material) and technical constraints the study was not able to include all the other categories of health care workers other than the physicians and nurses. Similarly, because of the same constraints the study was also not able to include the health stations and health posts. This would limit the application of the research findings to these sectors of the health care workers and health institution institutions.

The application of the self-administered questionnaire might have caused over reporting of social problems. This might have created social desirability bias. Similarly the usage of convenient sampling method would have resulted the inclusion of only voluntary participants. This might also be one of the limitations of the study, because random sampling technique was not used.

VIII. CONCLUSION

1. The majority of the surveyed health professionals were found to have a positive/favorable attitude towards patients with HIV\AIDS. These health professionals have, however, also expressed their discomfort in the different types of contact with HIV\AIDS patients care activities.

2. Most health professionals perceive themselves to be at great risk of acquiring HIV-infection and were estimating their occupational risk to be high.

3. Quite significant proportion of the staff working at the high-risk zones of Surgical and Obstetrics departments reported not practicing the universal precaution of wearing protective clothing.

4. HCWs have expressed their difficulties in the management of HIV/AIDS cases (Particularly for opportunistic infection and counseling) and the sources of information on update HIV/AIDS care were inadequate for the health professionals particularly for the nurses.

5. Among the diagnostic tests needed for HIV\AIDS related diseases, tests for parasitic Infestations and hematologic tests were relatively well available while bacteriologic and serologic tests were scarce. Tests for fungal infection were also the least available.

6. The provision of drugs for HIV\AIDS related diseases was found to be fair for Important drugs like anti biotics and I.V. fluids. In contrast, the availability of anti fungals, drugs for skin and CNS conditions were found to be in short supply. In addition, the availability of potent analgesics like codeine and other related drugs needed for terminally sick patients were also found to be low.

7. Among facilities for universal precaution water taps, were relatively available in fair conditions. Provision of protective clothing such as gloves and eye goggles were found to be in short supply. The presence of soup the recommended one-handed recapping separate containers for collection of needles and sharp objects were also found to be low. Out patient Department were found to be better equipped with both high-level chemical disinfectants and heat sterilizers than the Wards. Generally health institutions were found to be in short supply of facilities and supplies for opportunistic infection and universal precaution.

IX. RECOMMENDATIONS

1. A concerted effort is recommended to conduct in service training for the HCWs on occupational risk and principles of universal precaution. Development of work place policies on implementation of universal precaution including practice of protective clothing particularly at risk zones is also recommended.

2. The sources of information on update of HIV/AIDS care of the health professionals especially focusing on nurses should be improved by improving their access to of scientific journals (journal clubs, seminars, conferences focusing on HIV/AIDS care). The development and distribution of updated guideline on HIV/AIDS care and management protocol at the local level should be encouraged.

3. Among the diagnostic tests needed for HIV\AIDS related diseases, the provision and availability of bacteriologic, serologic of tests needs improvement with more emphasis to tests for fungal infection. Among the drugs for opportunistic infections, the availability and supply of drugs for the management of fungal infection and skin diseases should be improved and efforts should also be made on provision of important drugs for the management of palliative care (like potent pain killers and sedatives)

4. Efforts should made for improving the provision of appropriate containers for sharp objects, protective clothings like gloves and eye goggles, high level chemical

disinfectants and heat sterilizers with more emphasis to high-risk areas like the wards.

6. Collaboration of these health care institutions with networks such as the families Churches (pastoral workers) and community organizations involved in AIDS care is also recommended for provision of continuum of care of terminally sick AIDS patients who no longer be treated at the institutional level for providing home based care.

7. Provision of appropriate management of occupational post exposure of HCWs which includes fist Aid, clinical follow up, education and counseling and possible chemo prophylaxis is also be cost effective measure of prevention of HIV transmission than lose the working staff on whom heavy investment has been made and caring would also be more expensive.

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XI. ANNEX

ANNEX- 1

SELF-ADMINISTERED QUESTIONNAIRE FOR HCWs

Serial No----------

SOCIO-DEMOGRAPHIC CHARACTERISTIC Q 1-9

1. Interviewee: qualification ☐

1- Specialist 2- Resident 3- General Practitioner 4- Health Officer

5- Intern 6- Nurse 7- Health Assistant

2. Age ☐

3. Sex ☐

1- Male 2-Female

4. Marital status ☐

1- Married 2- Single 3- Divorced 4- Widowed

5. Ethnicity ☐

1- Amhara 2- Oromo 3- Tigre 4- Gurage 5- Other

7. Religion ☐

1- Orthodox 2- Catholic 3- Protestant 4- Muslim 5- Other

8.Total years of experience ☐

1 . <5years 2 . 5 -10years 3 . 11- 15 years 4. >15years

9.Place of work [department] ☐

1.Medical 2.Surgical 3.Gynecology 4.Paediatrics 5.Other

PRACTICE OF HCWs OF WEARING PROTECTIVE CLOTHING (Q 10- 13)

10, How often do you Put on masks when performing any minor surgical procedures . ☐

1 never [0%] 2 .rarely ,[1% --25%] 3..sometimes 26--50% 4. often 51--75%

5, most of the time[76--95%] 6. Almost always [96--99%] 7. always [-100 %]

11. I_____- Put on masks when attending delivery. ☐

1 never [0%] 2 .rarely ,[1% --25%] 3..sometimes 26--50% 4. often 51--75%

5, most of the time[76--95%] 6. Almost always [96--99%] 7. always [-100 %]

12, How often do you Put on eye glasses[goggles] when performing or assisting major surgery ☐

1 never [0%] 2 .rarely ,[1% --25%] 3..sometimes 26--50% 4. often 51--75%

5, most of the time[76--95%] 6. Almost always [96--99%] 7. always [-100 %]

13, I_____ Put on eye glasses[goggles] when attending delivery ☐

1 never [0%] 2 .rarely ,[1% --25%] 3..sometimes 26--50% 4. often 51--75%

5, most of the time[76--95%] 6. Almost always [96--99%] 7. always [-100 %]

Attitudes Of HCW's Towards Patient With AIDS Q 14 - 18

14, I have a tender & concerned feeling for AIDS patients ☐

1.Agree 2.disagree 3. indifferent

15, I believe that health workers should be able to refuse taking care AIDS patients ☐

1.Agree 2.disagree 3.indifferent.

16, I feel that AIDS patients are responsible for their illness ☐

1.Agree 2.disagree

17, I feel that AIDS patients deserve sympathy & understanding ☐

1. Agree 2 . disagree

18,. AIDS patients should be isolated ☐

1. Agree 2.disagree 3. indifferent

Comfort Level HCW'S To Specific Contacts Involving PWA Q 19-22

19., I am comfortable when discussing (taking) sexual history of my patients ☐

1-- Agree 2-- disagree

20. I feel _____when performing routine physical examination for AIDS patients ☐

1-- comfortable 2-- not comfortable

21,. . I am comfortable when drawing blood from AIDS patients ☐

1-- Agree 2-- disagree

22,. I _____comfortable when performing /assisting surgery for AIDS on patients ☐

1-- am - 2-- am not

HCW 'S Response Towards Occupational Risk Perception Q 23 -25

23,. Health professionals are at "great" danger of acquiring HIV infection through occupation ☐

exposure 1-- Agree 2-- Disagree

24, . The risk of being infected following an exposure of injury with HIV contaminated needle ☐

is estimated to be : 1, < 1% 2 ; 10% 3, 50% 4, 50-100% 7. Do not know

25, After proper hygiene and normal precautions are taken ☐

there is : 1. Still high risk to health workers 2. Almost no risk to health workers.

HCW 'S Response to perceived needs and source of information on HIV/AIDS

26, I ---------- with the management of HIV/AIDS patients ☐

1-- have difficulties 2—have no difficulties

27. If you have difficulties , select your most difficult part ☐

1- medical care [like management of opportunistic infection] 2- psychological care [counseling]

3- social care [stigmatization ,discrimination] 4- shortage of supplies (drugs & glove)

5.—other difficulties

28,. I believe that my training both under /post graduate is ----------in Ambulatory care of AIDS patient 1-- deficient 2-- Adequate ☐

29., What is your main source of information on update of HIV/AIDS ?

1---mass media 2-- Books 3-- Journals ☐

**** only analyzed variables are presented on the annex**

ANNEX- 2

STRUCTURED CHECK LIST FOR LABORATOTIRES

Serial No----------

Availability of diagnostic tests for major opportunistic infections and HIV-Infection during last week.

1- Available 2. Not available

1 . Name [Code] of the laboratory---------- ☐

Type of tests

2.1 Parasitic tests

2. Stool examination ☐

3. Blood Smear examination ☐

4. sputum staining for PCP with modified Giemsa or toluidine blue ☐

2.2 Hematology tests

5. CBC ,complete blood count examination ☐

6. TLC , total lymphocyte count examination ☐

7. ESR examination ☐

2.3 Bacteriology tests

8. Gram stain examination ☐

9. AFB Stain examination ☐

10. Stool culture examination ☐

11. Blood culture examination ☐

12. Urine culture examination ☐

13. Sputum culture examination ☐

2.4 Fungal tests

14. KOH examination ☐

15. Indian ink examination ☐

2.5 Serology and viral tests

16. spot test examination ☐
17. ELISA examination ☐
18. VDRL examination ☐
19. TOXO examination ☐
20. Widal & Widal examination ☐
21. Cryptococcal antigenimia examination ☐

2.6 biochemical tests

biochemical test for body fluids like csf,pleural fluid

22. glucose ☐
23. protein ☐

2.7 other tests

24. urine analysis examination ☐
25. Tuberculin examination ☐

***** only analysed variables are presented on the annex**

ANNEX- 3.

STRUCTURED CHECK LIST FOR PHARMACIES

Serial No----------

Name [Code] of the pharmacy---------- ☐

Availability 1- seen at pharmacy

2- not seen at pharmacy

3.1 Antifungals

1. Gentian violet ☐
2. Nystatin tablet ☐
3. Nystatin cream ☐
4. Ketakenazole tablet ☐
5. fluconazoletab ☐
6. clotrimazolecream ☐
7. clotrimazolelozenge ☐
8. miconazolegel ☐
9. amphotericinBlozenge ☐
10. amphotericin B systemic ☐
11. griseofulvin tablet ☐

3.2,ANTI TB

12 . STM ☐

13.INH1. ☐

14.RIFAMPICIN1 ☐

15.PYRAZINAMIDE ☐

16.ethambutol ☐

3.3 Analgesics

17. pethidine ☐

18 .Codein phosphate ☐

19.paracetamol &Codein phosphate ☐

(co-codamol)

20.carpamazepine ☐

21.phenytoin ☐

22.topical liquid nitrogen ☐

3.4 Antibiotics.

23. .Bactrim tablet ☐

24. .Bactrim injection ☐

25. .Bactrim syrup ☐

26. Benzathin penicillin ☐

27.Procaine penicillin ☐

28. Crystaline penicillin ☐

29.ampicillin P.O. ☐

30.ampicillin I.V. ☐

31.Erythromycine ☐

32. Tetracycline ☐

33. Cloxacillin ☐

34.chloraphenicol capsule ☐

35.chloraphenicol syrup ☐

36.chloraphenicol I.V. ☐

37 .Cephtrax tablet, ☐

38 .Cephtrax syrup ☐

39 .Cephtrax injection ☐

40.Doxicyclinee ☐

3.5 Anti-parasitic

41.Metronidazole capsule, syrup ☐

42. Thiabendazole tab. ☐

43.mebendazole tab., syrup ☐

44.fansidar ☐

45. pentamidine isothionate ☐

46.dapson ☐

3.6 Anti septics ☐

47. 70% ethyl alcohol ☐

48. Chlorohecoxine glaconte and ☐

49 heximidine solution (1.5%) ☐

50 .Iodine ☐

51. .sodiumhypochlorite ☐

52. formaldehyde ☐

53. hydrogen peroxide ☐

3.7 CNS DRUGS

54. chlorpromazine tablet ☐

55. chlorpromazine injection ☐

56. diazepam tablet ☐

57. diazepam injection ☐

3.8 DRUGS FOR SKIN

59. prometazine ☐

60.calamine lotion ☐

61. diphenhydramide ☐

62.topical benzyl benzoate ☐

3.9 I.V.fluides

63. ringers lactate ☐

64.normal saline ☐

65.Dextrose in saline[DNS] ☐

3.10 constipating drugs

66.loperamide ☐

67.diphenoxylate ☐

***** only analysed variables are presented on the annex**

ANNEX-4

STRUCTURED CHECK LIST FOR IN- PATIENT WARDS AND O.P.D.s

Serial No----------

OBSERVATION OF FACILITIES

RELEVANT TO UNIVERSAL PRECAUTION

1. Name [Code] of the study site----------

4.1 general hygiene

2. WATER TAPS ☐

1.available 2. not available 9.not applicable

3. SOAP FOR HAND washing ☐

1. available 2.not available 9.not applicable

4.HAND ☐

DIS. INFECTANT

1. available 2.not available 9. not applicable

4.2 WASTE COLLECTION

5..CONTAINERS FOR SHARP OBJECTS ☐

1- available 2- not available 9. not applicable

6..IF AVAILABLE, IT IS ☐

1- puncture proof. 2- not puncture proof 9. not applicable

7..THE CONTAINER IS ☐

1. 1-less than three quarter full

2-greater than three quarter full

8..SHARPS ARE ☐

1.ARE NOT PROTRUDING FROM THE CONTAINER

2 are protruding from the container.

9. CONTAINERS ARE: ☐

1- ONE HANDED RECAPPING

2- not one handed recapping 9.Not applicable

10. PLASTIC BAG FOR LINEN ☐

1- avail. 2- not avail. 9.not applicable

11. HEAVY DUTY GLOVES ☐

1- avail. 2- not avail. 9.not applicable

4.2 Infection control

4.2.1 HEAT METHOD

12. Do you have a boiler ☐

1.Yes 2.No 9.Not applicable

13. If yes, is it 1.Working 2. Broken

14. Is there steam Autoclave. ☐

1. Yes 2. No 9.Not applicable

15. Is there dry sterilizes. ☐

1. Yes 2.No 9.Not applicable

16. Do you use sterilization strip test ☐

1. Yes 2. No. 9.Not applicable

4.2.2 CHEMICAL METHOD

17. Do you use HLCD, high level chemical disinfectant, like sodiumhypochlorite , for disinfection for contaminated medical equipment ☐

1. Yes 2. No 9.Not applicable

18. There is a shortage of this chemical

1. Strongly Agree 3. Disagree ☐

2. Agree 4. Strongly disagree

19. Was there a time of Absence of this chemical in the last 6-12 months ☐

1. Yes 2. No

20. If yes, How frequent was the absence ☐

1.in days 2. In weeks 3.in months

4.2.3 Protective clothing

21.How many Gloves will be available ☐

for emergency (duty) hours in your place

1. 1 pair 3. 3-5 pairs 5. >10pair

2. 2 pair 4. 6-10 pairs 9.Not applicable

22. There is a shortage of Gloves in my working place ☐

1. Strongly Agree 3. Disagree

2. Agree 4. Strongly disagree 9.Not applicable

23. Do you re-use gloves like after boiling for shortage ☐

1. Yes 2.No 9.Not applicable

24. Do you have Apron ☐

1. Yes 2. No 9.Not applicable,

If yes.how many----------

25. Do you have eye-goggle ☐

. 1.Yes 2.No 9.Not applicable

If yes.how many----------

26. Do you have masks ☐

1.Yes 2.No 9.Not applicable

If yes.how many----------

***** only analysed variables are presented on the annex**

DECLARATION

I, the undersigned, declared that this thesis is my original work, has not been presented for a degree in any other university, and that all sources of materials used for the thesis have been duly acknowledged.

Name: AFEWORK MEBRATU

Signature: 

Place: ADDIS ABABA

Date of submission: DECEMBER, 2000

This thesis has been submitted for publication with my confirmation as a university advisor.

Dr. Birhanu Demeke 

Name of advisor Signature