The Knowledge, Attitudes, and Perceived Support of Tanzanian Nurses When Caring for Patients With AIDS

by

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School of Nursing

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DEDICATION

This thesis is dedicated to Yadon, Wanze, Mugendi, Maro and all the members of my family who made it possible for me to complete this thesis.

I am extremely grateful to my husband and friend Yadon Kohi, who made it possible for me to be away from home and undertake this Master's degree. I thank Yadon for his invaluable help with taking care of our three children during the four years of my absence -- two years for baccalaureate training and two years for master's training at Dalhousie University.

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ABSTRACT

AIDS is a major health problem globally. In Africa, Tanzania has one of the highest incidences. In the literature on AIDS, much attention has been paid to the Western health care workers' knowledge of and attitudes toward AIDS. Little is known of the knowledge ánd attitudes of health care workers of other countries.

This study provides a descriptive and comparative examination of Tanzanian nurses' knowledge of, and attitudes toward AIDS and their perceived support when caring for patients with AIDS.

A self-completing questionnaire was used to collect data. Questionnaires were completed and returned by 172 of the 180 nurses to whom they were distributed, a response rate of 95.5%. Data analysis included descriptive statistics, t-test, Pearson correlation analysis of variance and multiple regression.

The research revealed that 96% of Tanzanian nurses appeared to have satisfactory level of knowledge about AIDS; however, they are overly cautious and have negative attitudes toward the care of patients with HIV/AIDS. They indicated fear of contagion (AIDSphobia). Unlike nurses in other studies, most nurses indicated that they had a supportive working environment (informal support groups) in their working areas. Further, they received support from their family and friends.

It is apparent from these results that more effort must be expended in the education program of Tanzanian nurses if negative attitudes about caring for patients with AIDS are to change to positive attitudes so that quality care to patients can be provided.

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CHAPTER 1

Introduction

In June 1981, the Centre for Disease Control (CDC) in the United States reported unusual outbreaks of pneumocystis carinii and Kaposi's sarcoma in five young men, all active homosexuals in Los Angeles, California. This was the first publication related to the epidemic of the illness known as acquired immunodeficiency syndrome (AIDS) (Clayton, 1989; Lewis, 1989).

Subsequently AIDS has become a global epidemic. By March 23, 1988, 84,256 people from 136 countries had been reported as having AIDS (Grady, 1988). According to the World Health Organization (WHO) a steep increase in the number of people with AIDS is being observed globally. It is estimated that 10-30% of the 5-10 million infected people with human immunodeficiency virus (HIV), will develop AIDS during the next five years. Consequently, between 500,000 and 3,000,000 new cases of AIDS will develop among who are already infected with HIV (WHO, 1988). According to Hopp and Rogers (1989), there is little question that the continent hardest hit is Africa.

Worldwide three HIV-infection patterns have emerged. Pattern 1 typically occurred in industrial countries -- the United States, Mexico, Canada, Australia, New Zealand, parts

of Latin America and many Western European countries. The earliest reports of AIDS cases occurred among gay or bisexual men and urban intravenous drug users. In these areas, the male:female patient ratio has been 10:1, but that is changing as more heterosexuals are infected (more like Pattern III). Pattern II is observed in some areas of central, eastern, and southern Africa with AIDS predominantly affecting heterosexuals; the male:female patient ratio approximately 1:1. Pattern III (a combination of Patterns I and II, which is HIV-1 and HIV-2) involves Eastern Europe, North Africa, the middle East, Asia, and most of the Pacific, excluding Australia and New Zealand. These countries accounts for the smallest number of reported AIDS cases (Clayton, 1989; Elder, 1989; Getty, 1991).

In Tanzania, the first clinical suspicions of AIDS were reported in the Kagera region in 1983 and confirmed in 1985. Initially it appeared to be a disease of the urban young or those whose occupations called for much travelling, and prostitutes were seen to be a major focus. With men and women being infected in equal numbers (ratio approximately 1:1), the predominantly sexual nature of HIV transmission in Tanzania has made AIDS a difficult health problem to control, however, and rural areas are increasingly becoming involved. Thus, the disease is likely to pose a serious threat to the health and socio-economic well-being of all Tanzanians:

In certain regions, patients with AIDS occupy a large proportion of the hospital beds. Probably still more cases are treated at home in the villages (Tanzania National AIDS Control Programme, 1990) (TNACP). The few reported statistics on seropositive people, people with AIDS and the number of deaths have been conflicting or confusing. The projected number by Tanzania National AIDS Control Programme of seropositive people from 1986-1990 would be 872,482, and the projected number of deaths from 1981-1989 would be about 38,000. But by the end of June 1990, only 16,250 people in whom AIDS had been clinically diagnosed and 2,000 deaths had been reported to the Ministry of Health. According to Mukoyogo and Williams (1991), 21,000 children under the age of 16 have lost one or both parents, with AIDS being the major cause of death.

It is well established that AIDS is a disease that affects mainly the sexually active members of the Tanzanian public: people who are 15-44 years of age constitute 87.7% of all cases. However, data collected from blood testing from individuals for blood donation indicate an alarming increase among the 15-19 and 20-24 year age-groups. For example, the percentage seropositives among the 15-19 year olds increased from 0.0% in 1987 to 7.2% by 1990 (TNACP, 1990).

Tanzania has a population of 23 million people and covers 945,000 square kilometres had reported a total of

16,250 people with AIDS. By comparison, Canada with a population of about 27 million people and 9,976,000 square kilometres, reported 4,768 people with AIDS and about 2,859 deaths by March 1991 (Federal Centre for AIDS). Comparing the figures of cases of AIDS of the two countries, Tanzania has a higher incidence of infected people with AIDS (see Table 1).

Table 1

Comparison of Number of People With AIDS by Country

Country	Population (million)	Area (sq.km)	Cases of AIDS Reported	AIDS Deaths	Projections of cases of AIDS
Tanzania	23	945,000	16,250 (1990)	>2,000 (unknown)	872,482
Canada	26	9,976,000	4,768	2,859	10,067
U.S.A	250	9,363,405	164,129	102,803	>600,000
Worldwide	5,300		600,000		500,000 to 3,000,000

Adapted From:
Tanzania National AIDS Control Programme (1990)
Federal Centre for AIDS, Canada (1991).
The World Almanac:Book of Facts (1991).
David, S. (1989).
US Centre for Disease Control

A general hysteria began to develop in Tanzania in the late eighties as magazines, journal and newspapers published AIDS information, most of which was misleading. The public perception that scientists knew little about AIDS fuelled

the hysteria.

Tanzania is a country with varied communicable diseases. Thus Tanzanian nurses are familiar with the practice of isolation technique or barrier nursing; still, there is great fear among nurses who care for patients with HIV/AIDS.

In contrast many North American nurses are not as currently familiar with isolation procedures or barrier nursing because hospitalized communicable diseases have ceased to be a major problem in North America. A few nurses who work in the infectious disease clinics are comfortable with this isolation technique. The lack of knowledge of barrier nursing or isolation techniques may cause anxiety, distress and fear among nurses who care for patients with AIDS (Simmons-Alling, 1984). For Tanzanian nurses AIDSphobia may be a major contributing factor to their caring for patients with AIDS. The nurses' own pre-existing cultural and normative values may result in aversion toward patients with AIDS perhaps predisposing nurses to providing inadequate care. The following Table has been extrapolated from readings and observation.

Table 2

Differences Between Tanzanian Nurses and North American Nurses Regarding AIDS.

Tanzania	North America
Little knowledge about AIDS	Little knowledge about AIDS pre 1988
Patients originally heterosexuals, (prostitutes and users of prostitutes?) now:anyone	Patients first identified were male homosexuals, IV drug users, blood transfusion recipients and now: anyone
Current knowledge about many communicable diseases. Very familiar with isolation technique	Less current knowledge about communicable diseases due to infrequency and isolation Less familiarity with isolation/ barrier nursing
Fear of and negative attitudes toward patients with AIDS (AIDSphobia)	Fear of and negative attitudes toward patients with AIDS (AIDSphobia, homophobia)

Nurses, being part of the health care system, play a major part in the treatment and care for those who have contracted AIDS. Much is known about the levels of knowledge and the attitudes of this group of nurses in North America. However, although a few studies showing the public's awareness of and attitudes toward AIDS and people with AIDS have appeared recently in Tanzania, there are no documented studies on nurses and other health care workers from Tanzania, or indeed, other African countries. The puzzling question has been: why would Tanzanian nurses with high knowledge of communicable diseases, isolation technique, and a heterosexual patient group display a similar reaction to working with patients with AIDS as did nurses in western countries, who initial patient groups were

mainly homosexuals and intravenous drug addicts.

Many conflicting study results have been reported. Some trends which have appeared in the literature are (1) that nurses with good knowledge and positive attitudes experience less stress when working with people with AIDS; (2) that there is a direct correlation between knowledge and attitudes; (3) that positive attitudes have been correlated with a willingness to care for people with AIDS; (4)that fear of transmission is still high among nurses; and (5) that the media remains one of the largest single sources of information for health care professionals (Barrick, 1988; Douglas, Kalman & Kalman, 1985; Pellegrino & Spicehandler, 1988). It is apparent from the literature that nurses who care for patients with AIDS require support, which can be in the form of informal peer support, specific support groups, family, friends and professional counsellors (Stewart, 1989). Systematic research was needed to explore Tanzanian nurses' levels of knowledge of, and attitudes toward AIDS, and their perceived support when caring for patients with HIV/AIDS, in order to instill the underlying attitudes and knowledge that enable a nurse to be positive in her/his attention in caring for patients with AIDS.

Purpose of the Study

The purpose of this study was to explore Tanzanian nurses' attitudes toward patients with HIV/AIDS and to understand better the nurses' level of knowledge about AIDS and the available support. The study findings will establish data for nursing education and other health disciplinaries to meet the nurses' needs effectively by (a) providing required educational information about AIDS, (b) changing negative attitudes to positive attitudes toward patients with HIV/AIDS, and (c) providing and encouraging the supportive environment the nurses require. The long-term objective of this study is to improve the quality of care of patients with AIDS.

Research Questions

1. What are the attitudes of Tanzanian nurses toward AIDS and patients with AIDS?
2. What is the level of knowledge about AIDS among the Tanzanian nurses in the four sample hospitals?
3. What are the available types of social support for Tanzanian nurses caring for patients with AIDS?

Chapter 2

Literature Review and Theoretical Framework

The spread of HIV, the causal agent of AIDS, is a grave threat to the health of the world's population and poses a major constraint to social and economic development in many countries (WHO, 1989). Health care-givers require efficient health education to educate and to care for patients with various health problems, especially AIDS, which is a fatal disease.

People with AIDS are rarely hospitalized with only one problem. These patients often present with multi-system diseases and/or multi-system failure. The hospital staff can expect to care for patients with multiple illnesses -- pneumonia, meningitis, malignant lymphoma, disseminated herpes simplex infection, cytomegalovirus retinitis -- or a myriad of other "opportunists" that attack the patients' collapsed immune system (Gee & Moran, 1988; Nelson, 1987).

Knowledge of the modes of transmission of AIDS and knowledge of caring for patients with AIDS seem to be important factors in determining the attitudes of health care providers.

Knowledge Studies About AIDS

In October 1983, a 14-item questionnaire was mailed to all primary care physicians (257 in family and general

practice, 198 in internal medicine and 104 in adolescent paediatrics) in San Diego, California by Barrett-Connor (1984). The response rate was 49% (260/529 -- 104 were family physicians, 103 internists and 53 paediatricians). Three percent of family practitioners or internists and no paediatricians reported great or moderate concern about acquiring AIDS from a patient. Nearly 100% in each group knew that AIDS affected homosexual men, drug users, Haitians and haemophiliacs, and that these patients had the highest risk. Ninety-two percent knew that a gay man with pneumocystis carinii pneumonia probably had AIDS, and 87% to 88% knew that AIDS is characterized by multiple opportunist infections, has a poor prognosis, and is not contracted by casual contact. More than two-thirds knew that Kaposi's sarcoma was not the most common presenting complaint and that health professionals were not in the increased-risk groups. This survey suggested that primary care physicians in this study had a good knowledge about the most important known factors of AIDS, including the population at risk, disease presentation and prognosis (Barrett-Connor, 1984). However, only 49% of the participants responded -- perhaps only the most knowledgeable, as this study was contrary to all of the other studies. The majority of studies, prior to about 1989, found that the levels of knowledge of hospital workers about AIDS were low and attitudes very negative.

Valenti and Anarella (1986), for example, distributed a

survey to hospital employees (hospital personnel from faculty in the school of medicine, house staff in departments of medicine and surgery, medical, surgical, and psychiatric staff nurses, third and fourth-year nursing students, blood-bank personnel, microbiology laboratory clinical chemistry technicians, radiology department, patient transportation and equipment centre and admitting services) so that the hospital Employees' Infection Control Program could assess the hospital employees' level of understanding regarding AIDS. Surveys were collected for a three week-period after distribution. The results revealed that, although understanding of the disease and its transmission generally increased with the level of education, there was concern that several aspects of disease transmission still evoked anxiety, even among some well-educated physicians and professional nurses. There was some uncertainty regarding the need for routine use of masks, gowns and gloves, and uncertainty concerning the use of public facilities and common waiting rooms (Valenti & Anarella, 1986).

Stanford (1988) conducted a survey to determine the knowledge and attitudes of 170 British qualified nurses up to sister/charge in two different health authorities. He found knowledge was generally unsatisfactory. Questions concerning nursing care and legal aspects showed the least amount of knowledge. Such a level of knowledge implies that

the quality of nursing care that these nurses would be able to offer could be far from satisfactory. Nurses had generally positive answers to questions that measured attitudes toward patients with AIDS, but experience with actual patients did not appear to increase knowledge. However, less than a third of the respondents from one authority had attended a lecture on AIDS while two thirds of those in the other authority had attended a lecture, and in-service education did seem to have an effect on improved knowledge. Similarly, findings from Armstrong-Esther and Hewitt's (1990) study, indicated that direct education on AIDS with post-registered and bachelor of nursing student nurses led to increased knowledge and understanding of AIDS. The education also contributed to more liberal attitudes about the disease and patient care generally. Yet another study found that a short term in-service education (two hours to full day) had increased knowledge but attitudes did not change (Kerr & Horrocks, 1990). These studies illustrated that knowledge about AIDS, and support means to change attitudes are vital if the quality of nursing care is to be improved. More planning, updating and evaluation of in-service education on AIDS should be carried out.

Incidents of suboptimal care being rendered to patients with AIDS have been documented. Using a voluntary anonymous questionnaire, Gordin, Willoughby, Levine, Gurel and Neil (1987) surveyed nearly 2000 hospital employees (nurses,

doctors, laboratory workers, professional support staff, non-professional support staff and office personnel) including students and residents, of a large urban hospital in order to evaluate the staff's knowledge, attitudes and professional behaviour regarding AIDS. Responses were obtained from 1194 (60%) of the participants. Poor knowledge of the transmission of AIDS was documented (no percentages were given), with 50% of workers stating that AIDS can be spread through ordinary non-sexual contact and 23% through the air by cough or sneeze. The level of knowledge was demonstrated to be a predictor of positive attitudes. The authors recommended that hospital education program on AIDS must ensure the incorporation of accurate information into the belief system of hospital workers.

A survey conducted to assess the knowledge, values, attitudes and behavioural intent of Nova Scotia nurses toward AIDS and patients with AIDS. Questionnaires were sent to a random sample of 400 general- duty nurses. After analyzing the 179 returned questionnaires (45%) the authors suggested that although 88% of the nurses stated that they intended to nurse patients with AIDS, the quality of the nursing care might be inadequate because of the negative attitudes and the lack of knowledge about AIDS, especially outside urban Halifax. Furthermore, nurses used media sources of information about AIDS more often than professional sources (Kerr & Horrocks, 1990).

Morgan and Treadway's (1989) study of the knowledge of the nursing staff about AIDS and attitudes toward AIDS indicated that many (no percentages given) participants strongly agreed that it was more hazardous to use toilet facilities used by people with AIDS and that some (no percentages given) participants disagreed that condoms can help prevent AIDS. (The researcher recommended that the participants' knowledge about the transmission of AIDS be investigated). Eight percent of diploma nurses agreed that donating blood may increase the chances of contracting AIDS, compared to 4.6% of associate degree nurses, 6.1% of bachelor of science nurses and none of the master's level nurses. The statement that "AIDS can be transmitted through breast feeding" was recommended to be examined because of the level of disagreement on that point (Morgan & Treadway, 1989). Some (no percentages given) participants believed that mosquitoes transmit AIDS. The researchers concluded that, since currently there is no vaccine or cure for AIDS, the best defense against AIDS is information and education.

A study was conducted by Armstrong-Esther and Hewitt (1989) comparing AIDS-related knowledge and attitudes in a non-probability sample of 125 nurses taking a post-RN bachelor's degree program (post-RN/BN) at a Canadian university. A 150-item questionnaire solicited information about various aspects of AIDS symptoms, mode of transmission, risk associated with sexual practices,

precautionary measures when handling blood, blood products and body secretions, and attitudes toward clinical and societal care for patients with AIDS. The research findings showed that the post-RN/BN nurses, while generally knowledgeable about AIDS, were somewhat misinformed about key symptoms and showed specific conservatism about contact with and care of patients with AIDS, both within and outside the health care system. The findings of knowledge were replicated with the basic student group, but these students exhibited somewhat more liberal attitudes toward contact with and care of patients with AIDS.

Armstrong-Esther and Hewitt (1990) later conducted a survey to examine the effects of education on nurses' perception of AIDS and the care for patients with AIDS as part of a semester class in epidemiology. The post-test results indicated the following: (1) Eighty-five percent indicated that there was some chance that they might catch the disease. (2) Eighty percent showed fear of being infected. (3) There was a dramatic decrease in concerns about nursing patients with AIDS, 83% to 53%. (4) There was a drop from 17% to 14% on dislike for patients infected with HIV. (5) Seventy-three percent (post-test) asserted that patients should be treated no differently from others in hospital while the pre-test was 63%. (6) They proposed that patients with AIDS should be protected from the general patients (reversed barrier) because of the risk of

opportunistic infections. (7) There was a complete reversal in the proportion of nurses claiming that nurses should have the right to choose whether they wish to work with patients with AIDS; on the pre-test 83% upheld this right, but by the end of the study, only 27% did so. (8) Similarly, the percentage of nurses stating that they would work with patients with AIDS if given a choice increased from 58% to 71%.

Hospital staff from three Toronto, Canada hospitals were surveyed for knowledge, attitudes and concerns about AIDS by Gallop et, al. (1991). Seventy percent of the 1366 respondents had direct clinical experience with persons with AIDS. A 51-item self-administered questionnaire tapping AIDS-related knowledge, attitudes and concerns of health care professionals was used. The results revealed that lower knowledge on AIDS was associated with more extreme attitudes supporting more negative feelings about homosexuality. Also, there was no statistically significant difference in the variables between professional groups -- physicians, nurses, technologists and supervisory staff. Multivariate analysis demonstrated that knowledge and concern about contagion were the important mediating variables (multiple $\underline{r}$ = .40) for other attitudes and concerns.

According to Servellen, Lewis and Leake (1987), nurses who were more comfortable with patients with AIDS and those

who had greater experience with them were less likely to be overly cautious. But those nurses who were more knowledgeable about AIDS signs and symptoms and who had attended more lectures on the subject were not necessarily more comfortable about caring for these patients.

AIDS-related knowledge, attitudes and behaviours were studied in a sample of college students in the Rocky Mountain region by Kinnick et, al. (1989). This included 834 students enroled at five colleges and universities in Colorado and Wyoming. The results revealed that AIDS-related knowledge was high for both male and female participants, each averaging almost 70% correct responses for the knowledge item-test. However, the authors report that a pilot study of the survey indicated that the knowledge section was too easy.

Unlike in western countries, where both health care workers and the public's knowledge of and attitudes toward AIDS have been much studied, in Tanzania a few studies have been documented on the public's knowledge of and attitudes toward AIDS.

A study on people in the community concerning knowledge, attitude, practices and beliefs (KAPB) survey on HIV/AIDS was conducted in a northwest region of Tanzania by Ndeki and Mliga (1991). This study, financed by the World Vision International (WVI) Tanzania, was meant to provide some information which would be useful in planning health

education strategies, and some baseline-information which could be the basis for evaluating the impact of the health education strategies to be undertaken by the WVI and its collaborating local agencies.

The participants of the study were randomly selected from primary/elementary school children in class 5 to 7 (age 11-13 years), primary school teachers, community leaders and the general adult population. (Questionnaires were given to primary school pupils, teachers and the community leaders; adults in the community were interviewed by the research assistants, perhaps because of lower reading ability). Pertaining to knowledge, the study findings revealed the following. (1) The community considered the problem of AIDS to be a serious one now and in future and one that needs the concerted efforts of everyone to combat. (2) Community adults at large lacked knowledge about routes of HIV transmission apart from sexual intercourse and blood transfusion, ways through which HIV infection is not transmitted, the fact that one can have HIV infection but look healthy and still be capable of infecting others, and the effectiveness of condoms and how to use them. (3) Primary school pupils, teachers, leaders and villagers supported the idea of including education on AIDS in primary schools. (4) Teachers and leaders were seen as capable of educating others on AIDS. The researchers recommended (1) concentrating health-education messages on AIDS in areas of

lack of knowledge to be identified; (2) using teachers and leaders as facilitators of health- education campaigns after training them; (3) promoting condom use and making them available to adults in the community and educating them on how to effectively use them and dispose them safely.

Joint knowledge, attitude, beliefs, practices (KABP)/partner relationships (PR) surveys were conducted by Muhondwa, Leshabari and Batwa (1991). The target population was people aged 15 to 49 years for the PR survey and people aged 15 to 64 years for the KABP survey. The sample was randomly selected from the list of clusters used in the centennial national demographic surveys, and the data base consisted of 50 rural villages and 120 urban clusters drawn from that list of clusters. The entire sample responses were as follows: 83.8% knew that "one can get AIDS by having sex with prostitutes"; 84.5% knew that "one can get AIDS by having sex with many people"; 78.8% knew that a "a person can be infected and have the virus that causes AIDS but not have any symptoms". But 24% thought that one can get AIDS by sharing food or cups with a person who has HIV/AIDS; 32.4% indicated that "one can get AIDS by being bitten by a mosquito or other blood sucking insects"; 31.8% indicated that "one can get AIDS by wearing clothes used by a person who has HIV/AIDS virus"; and 12.5% of the respondents stated that "one can get AIDS by touching a person who has HIV/AIDS virus"; 97% of the participants were aware of AIDS as a

major public health problem in the country. Urban residents were found to be more knowledgeable than rural residents. The differences were greatest between urban females and rural females. Urban females were more knowledgeable than both urban and rural males on most transmission aspects.

Overall, Swai and Asten's (1991) update report on the epidemiology of HIV-1 infection in Tanzania revealed that various surveys conducted in different parts of Tanzania since 1988 revealed that public awareness on AIDS is quite high.

The literature on knowledge studies prior 1989 have revealed low levels of knowledge of most hospital workers about AIDS especially on the transmission and risk aspects of AIDS. Nurses, like anyone else, want more information about AIDS. Hospitals must do what they can to keep their staff who care for patients with this deadly disease informed. Hospital workers with higher knowledge were personnel with more positive attitudes and lower anxiety in dealing with patients with AIDS. Some hospitals have used the traditional teaching method of in-service education as a means of alleviating the fears and anxieties that AIDS evoked in health care workers, to improve the quality care of patients with AIDS.

Casual Contact

AIDSphobia, the fear of catching AIDS, can be alleviated through education and through contact with patients with AIDS (Diaz, Hart & So'Brian Putten, (1989). The persistent fear that HIV can be transmitted through casual contact has sometimes led to "specimen" suits being worn by ambulance workers and others whose work brings them into contact with people who are seropositive (Dossier, 1990). Health care workers should protect themselves against contracting the virus by using the "universal safety precautions" (Panos Dossier, 1990). However, using these precautions need not prevent health care workers from rendering competent and compassionate care.

Gallop, Lancee, Taerk, Coates and Fanning (1992) used findings from a recent survey of nurses to illustrate the complex nature of fear of contagion. Their findings revealed that the nurses' fear of contagion when caring for people with AIDS remains high despite increased levels of knowledge.

To determine the risk of transmission of human T-cell lymphotropic virus type III/lymphadenopathy-associated virus (HTLV-III/LAV) to close but nonsexual contacts of patients with AIDS, Friedland et, al., (1986) studied the non-sexual household contacts of patients with AIDS related-complex with oral candidiasis. Detailed interviews, physical examinations, and tests of serum antibody to HTLV-III/LAV

were performed on 101 household contacts (68 children and 33 adults) of 39 AIDS patients. All contacts had lived in the same household with an index patient for at least three months, sharing items such as, razors, toothbrushes, combs, towels, and eating utensils. Household facilities shared were beds, toilets, baths or showers and kitchens, for a median of 22 months during the period of presumed activity. They had close personal interaction with the patient: shaking hands, hugging, kissing on the cheek, kissing on the lips and helping to dress. Only one of 101 household contacts -- a five-year-old child -- had evidence of infection with the virus, which had probably been acquired perinatally rather than through horizontal transmission (Friedland et al. (1986). This study indicates that household contacts who are not sexual partners of patients with AIDS are at a minimal or no risk of infection with HTLV-III/LAV.

Further, Fischl, Dickinson, Scott, Klimas, Fletcher and Parks (1987) studied 45 adults with AIDS and their 45 spouses, 109 children, and 29 household contacts for evidence of heterosexual, perinatal, and household spread of human HIV-infection. Of the 45 spouses enroled, 26 (58%) had antibody to HTLV-III, including 12 of 17 male spouses and 14 of 28 female spouses, four females were seropositive at enrolment and ten seroconverted. Lack of contraceptive use and oral sex were associated with seroconversion. Of

the 101 children enroled, 15 had AIDS or AIDS-related illness, two had evidence of passive transfer of maternal antibodies and two had HTLV-III infection acquired outside the household. None of 90 seronegative children seroconverted. Of 29 household contacts studied, none developed antibody to HTLV-III.

The data continue to support the concept that HIV infection is not spread through close contact other than intimate sexual or blood exposures. These observations are important and suggest that in other settings, such as schools, HIV is not likely to be transmitted. However, the results reveal that the nurses' fear of contagion when caring for patients with AIDS remained high despite increased levels of knowledge.

Attitudes Toward People With AIDS

According to Ajzen (1988), an attitude is the predisposition to evaluate some symbol or object of one's world in a favourable or unfavourable light. Some of the characteristics of attitudes are that they are derived from underlying beliefs and values.

A ten-item questionnaire was given to nurses to measure their attitudes about caring for patients with AIDS. This research was conducted at a large teaching hospital in New York area in July 1983 and January 1984 (Blumenfield, Smith, Milazzo, Seropian & Wormser, 1987). Two thirds of the

nurses reported that family and friends had expressed concern about associating with hospital staff who had contact with patients with AIDS. One half believed that AIDS can be transmitted to health care personnel because of contact with patients with AIDS, despite precautions. Eighty-five percent (85%) of the respondents believed that pregnant nurses should not care for patients with AIDS. Although it is true that patients with AIDS with cytomegalovirus (CMV) infection may theoretically pose a risk for pregnant women, there are no reported cases of transmission of CMV from a patient with AIDS to a pregnant hospital worker (Blumenfield et al., 1987).

In comparison of fear of patients with AIDS and for patients with infective hepatitis, which is a more contagious but less serious disease than AIDS, it was interesting but unexplained fear of AIDS against hepatitis was significantly higher among intensive care unit (ICU) staff than among other groups of nurses. (The researchers noted that it may be that ICU staff nurses are more frequently exposed to body secretions and thus have more reason to fear a fatal infection). Half of the respondents indicated that they would ask for a transfer if they had to care for patients with AIDS on a regular basis. Nurses on the prison service were more comfortable working with patients with AIDS than were nurses assigned to other areas. (The researchers explain that these prison nurses are used

to dealing with structured situations, often with dangerous patients. They generally believe that if they follow the guidelines [safety precautions] they will not be in any serious danger). Most respondents indicated that they would be reluctant to perform mouth-to-mouth resuscitation on patients with AIDS and those with infective hepatitis. About half of the nursing staff felt that they were likely to have AIDS transmitted to them if they had contact with clinical specimens.

Gordin et al., (1987) study on urban hospital employees' attitudes toward AIDS, revealed that one-third of the employees believed that they should be able to refuse to care for patients with AIDS. Extreme anxiety in dealing with patients with AIDS was noted by 25% of the employees, and only 16% of the employees would volunteer to work on an AIDS ward.

Brennan (1988) mailed surveys to 18 hospitals which were already caring for patients with AIDS, and received responses from 346 nurses from 15 institutions. These 346 respondents had been taking care of patients with AIDS for an average of three years. The study revealed that 73% were concerned for their safety, 42% had an accepting attitude, 36% felt challenged, 27% felt frightened, and 19% were angry about caring for patients with AIDS. When asked how their families felt about their caring for patients with AIDS, 80% of the respondents said their relatives were concerned about

the nurses' safety. Some 36% said their families were frightened; and 32% said they were concerned about their own safety. About 20% said their families were accepting of their work (Brennan, 1988).

Morgan and Treadway (1989) surveyed nursing staff's attitudes about AIDS. The 120 subjects in this study were registered nurses employed in Tennessee at a modern teaching facility associated with a school of medicine. The nurses held master's (4), baccalaureate (49) and associate nursing (44) degrees and Diplomas (23). There were 120 participants participated, both female and male. A 42-item AIDS inventory -- was administered anonymously in which 20 items addressed attitudes and 22 items tested knowledge. The study findings were as follows: (1) Sixty-eight percent (68%) of the participants who considered themselves religious agreed with the statement "it was generous for hospital workers to care for patients with AIDS". (2) Forty-five percent of the sexually active participants responded that anal sex is against the law of God. (The authors did not give figures on the non-sexually active participants' responses on this aspect but they reported that there was no significant differences in responses between females and males, sexually active and non-sexually active $P < 0.05$). (3) In regard to whether health personnel such as physicians, dentists, and nurses with AIDS should be allowed to practice, five diploma nurses, one associate-

degree nurses and six bachelor of science nurses strongly agreed that they should not be allowed to practice. (4) seven diploma, six associate-degree, five bachelor of science and one master's level nurses agreed that "it was dangerous for hospital workers to care for patients with AIDS"; and (5) Fourteen (60%) diploma nurses, 33 (75%) associate degree nurses, 43 (83.7%) of bachelor of science nurses and 4 (100%) of master's level nurses agreed strongly that the government should be putting more money into research to develop a vaccine against AIDS.

Wiley, Heath, Acklin, Earl and Barnard (1990), conducted a survey at a medical centre in a large mid-western United States city in order to describe nurses' concerns, opinions, and precautions related to nursing patients infected with HIV. Of special interest was a comparison of responses by nurses who reported exposure to the HIV through broken skin or mucous membranes with the responses of nurses who reported no such exposure. A 15-item Likert-type scale was used. The sample included all staff nurses employed in the ambulatory/home health care unit and all staff nurses employed in the seven inpatient critical care units of the medical centre. Approximately 600 nurses who received the survey responded. Regarding the statement "in my work as a nurse, I have been exposed, through broken membranes or broken skin, to blood or body fluids of an HIV-seropositive patient" 20% replied "yes" 24%

replied "no", and 56% said "I don't know". It seems unlikely that all nurses who responded "yes" were recently exposed through needlesticks or mucous membrane splashes to HIV-infectious body fluids. However, these findings raise questions regarding the actual exposure rate for nurses working in emergency rooms, operating rooms, labour and delivery units, or critical care units. Sixty-six percent of the respondents said that they had adequate information about HIV-infection control to provide quality nursing care to HIV-seropositive patients. Almost all respondents agreed that as soon as HIV-antibody test results are available, nurses who give direct care to a patient should be informed of that patient's HIV-antibody test results. Fifty-five percent said that if the hospital gave them an option, they would refuse assignment to HIV-seropositive patients.

This study indicated that HIV-exposed nurses may need support in dealing with their concerns resulting from HIV exposure, and they may need more information about HIV-infection control and seroconversion rates of HIV-exposed nurses.

Lynch's (1990) study looked at a sample of 52 nurses in one hospital in Worcester, Massachussets, to determine how nurses who cared for people with AIDS regularly and those who did so intermittently, compared with respect to their knowledge, attitudes and support when caring for patients with AIDS. Thirty questionnaires were returned. A strong

finding in this study was that no nurses in the sample would refuse to care for patients with AIDS. Two-thirds of the nurses stated that they had friends or family who expressed concern about associating with hospital personnel who had contact with patients with AIDS. More than half (58.3%) of the nurses in the AIDS unit believed that pregnant nurses should care for patients with AIDS, 82.4% of the nurses in the intermittent group believed otherwise. All AIDS-unit nurses and 83.3% of the nurses from the intermittent group stated that they would not ask for a transfer if they had to care for a patient with AIDS on a regular basis. This may indicate that an increasing trend among nurses toward willingness to care for patients with AIDS.

The findings of the knowledge, attitudes, practices and beliefs survey on members of the community in north-west region of Tanzania by Ndeki and Mliga (1991) were as follows: (1) the participants indicated that not much sexual behavioural changes had taken place to control AIDS in the community; (2) use of alcohol tends to induce people to increase sexual intercourse; (3) primary pupils start sexual intercourse early (no age given), (4) primary pupils (age 7-13 years) were seduced by male adults to engage in sexual intercourse; and (5) adults (not specified) under utilized the use of condoms. The researchers recommended that counselling services be introduced to individuals, spouses, families and relatives of people with HIV/AIDS.

The results from the KABP survey conducted by Muhondwa et al. (1991) showed that 44.9% of the respondents reported that their friends had changed behaviour; 71.4% said that they themselves had changed their behaviour; 73% indicated that they knew about condoms; and 11% reported as having ever used condoms. This indicates that the rate of condom use is low. The rising trend in the prevalence of HIV infection in different sections of the population suggests that such changes have not been far-reaching in their impact or perhaps the respondents did not necessarily indicate what they did.

Homophobia

Homophobia, the fear, dislike, and hatred of gays and lesbians and of homosexuality, is another attitude that prevents some health care workers from completely caring for patients with AIDS (Diaz et al., 1989; Mar & Armstrong, 1989). AIDS was often referred to in North American popular magazines as the "gay plague" and the "new killer disease". There was much concern and confusion created for both the general population and health care givers by the frightening publications on AIDS (Valenti & Anarella, 1986).

Douglas et al. (1985), in a large urban teaching hospital (New York), surveyed the attitudes about homosexuality among 37 medical house officers and 91 registered nurses. The response rate did not differ

significantly between physicians and nurses or between men and women. Doctors and nurses had mean Index Homophobia (IHP) scores that fell in the low grade homophobic range (50.84 and 55.60, respectively). However, having a close friend or relative who was gay significantly reduced personal anxiety about homosexuals. Religious affiliation and degree of religiosity had no apparent bearing on level of personal anxiety about homosexuality. The items on the IHP were designed to specifically investigate this dimension of personal anxiety about homosexuals rather than cognitive attitudes and opinions about homosexuality. Thirty-one percent of the respondents admitted they had felt more negatively about homosexuals since the emergence of AIDS, but 91% disagreed with the statement that homosexuals who contract AIDS are "getting what they deserve".

Similarly, a survey of attitudes of nurses working with patients with AIDS, conducted by Blumenfield et al. (1987), revealed that between one-quarter and one-half of the respondents showed fear of caring for homosexual men and male prisoners because of nurses' awareness of AIDS. The research has shown that the best way to combat stereotypes is to have contact with people about whom one holds such stereotypes (Diaz et al., 1989).

Lynch's (1990) research findings showed that 100% of nurses working in the AIDS unit and 81.2% of nurses who care for patients with AIDS intermittently did not fear caring

for homosexual male prisoners. It was more significant that the nurses in the AIDS unit supported the concept of increased comfort in the care of homosexual male patient prisoners.

There is no citation of literature on Tanzanian or African nurses' attitudes toward AIDS and patients with AIDS as regards homosexuality and patients with AIDS in this section, because there is no documentation on these nurses to date.

It is certainly clear from the studies cited that nursing personnel caring for patients with AIDS have emotional concerns and fears in regard to their work with these patients. The findings from the review of the literature to 1990 on attitudes reveal (1) AIDS is thought of as a dreadful disease which ravages the bodies of its victims and instills fear and prejudice; (2) there have been reports of intense fear and general hysteria throughout North America; (3) adequate knowledge is needed to help establish a positive attitude toward nursing the patient with AIDS, but it is not sufficient to remove all anxiety and fear; (4) health care workers in various clinical settings held negative attitudes to caring for those who have AIDS; (5) some nurses and other health professionals before 1989 have refused to provide care to persons with AIDS; (6) AIDSphobia is compounded by homophobia (an unreasonable bias and suspicion toward homosexuality that is

perhaps based more on personal morality and religious beliefs) and often affects the medical treatment people with AIDS receive. Parallel to homophobia as a moral and cultural view, the bias toward prostitution, promiscuity and adultery compound the nurses' AIDSphobia. All these factors-- fear, hostility, denial, condemnation-- add up to the stigma of AIDS.

Concept of Support for Care-givers

Nurses have long been recognized as the health care professionals who spend the most time with patients. AIDS, with its high mortality rate and necessary skilled care, exposes nurses to a tremendous amount of stress. Specific characteristics that contribute to increased stress may be fear of contagion, stigma, and exposure to alternate lifestyles. Strategies that can help prevent burnout in nurses are education, staff support, spiritual support, and clear nursing administration policies and practices (Bolle, 1988; Valenti & Anarella, 1986).

Professional care givers respond to the challenge of caring for patient with AIDS according to their own values, experiences, and beliefs. Demands of other patients as well as the personality of the patients with AIDS, his or her family support, and the patient's own physical needs contribute to the staff's response to the patients with AIDS (Morgan & Treadway, 1989).

Simmons-Alling (1984) used the AIDS acronym to identify the four main areas that affect health care workers: Anxiety, Isolation, Drain and Stress. Anxiety is related to issues of transmission, the right to refuse to deliver care, and facing the loss of clients. Nurses felt isolated by having to defend their reasons for caring for these patients, with possible risk to themselves and their families. Drain resulted from nurses' having to deal with patient anger directed toward themselves, yet feeling that they had to conceal their own reactions of anger. Stress results from dealing with life-and-death situations and suffering. The author suggested that resources (for example, mental health counsellors and staff groups) can be utilized by health care workers to relieve stress or burnout. Ross and Seeger (1988) surveyed two teaching hospitals in Australia to determine 180 health professionals' level of stress, the predictors of burnout, and methods of coping with stress. They found that much (33.9% or 42%) stress and overwork are associated with caring for AIDS-related patients. The aspects that caused the greatest amount of stress were the youth of the patients, neurological aspects, and dying patients. One in five professionals were still anxious about infection. The correlations between anticipated and current burnout suggested that the emotional needs of patients and the staff's inability to deal with them may be a useful area to

support staff in order to reduce burnout and suggesting that it is situational rather than personality-based. Responses suggested peer support groups are likely the most useful way to help staff relieve stress.

A survey of Nova Scotia nurses' knowledge, values, attitudes and behavioural intent toward AIDS and patients with AIDS, indicated that, although nurses perceived staff in hospitals as reflecting positive attitudes toward the care of patients with AIDS, those closest to the nurse (spouse, family and friends) were perceived as being opposed to caring for patients with AIDS (Kerr & Horrocks, 1990).

Lynch's (1990) study revealed that 42% of nurses who cared for patients with AIDS intermittently and 61.1% of nurses on the AIDS unit stated that they had a support group at work. Equal numbers of nurses in both groups had attended in-service education on HIV/AIDS. All nurses attempted to keep up to date with the latest information about AIDS. Half of the intermittent group and 83.3% of nurses on AIDS unit indicated that they got a sense of satisfaction from caring for patients with AIDS. Both groups indicated having had adequate opportunity to express their feelings and access to the information they required.

In summary, fear generated by misunderstanding and uncertainty is a common response to AIDS from nurses and other health care staff. Fear of contagion is well documented. The literature has shown that to adequately

support staff (health care-givers), it is important to be aware of their attitudes and the level of knowledge. Involvement in support groups can prove very helpful.

Since there was no literature regarding Tanzanian health care workers' level of stress or methods of coping with stress and available resources to support them in order to reduce burnout, it was useful investigating the available resources for their support when caring for patients with AIDS. According to Nyamuryekunge's (1991) report on achievements, constraints and future perspectives of the Tanzanian National AIDS Control Program, there is no special counselling and social-support programme for health care workers. However, because of the increasing need for psychosocial support to those already suffering from AIDS and to their relatives, (this support programme) was established.

Definition of Terms

AIDS

Acquired immunodeficiency syndrome means infected with the human immunodeficiency virus (HIV) accompanied by symptoms of disease. Individuals with AIDS have to meet the diagnostic criteria of the Centre for Disease Control's case of definitions.

HIV

Human immunodeficiency virus was the first virus responsible for AIDS to be isolated. HIV is an extremely small particle (1 ten thousandth of a mm) that is composed of a protein coat that surround the RNA molecule, which carries the genetic code (Panos, 1990).

Attitude

A disposition to respond favourably or unfavourably to an object, person, institution, or event (Ajzen, 1988).

Theoretical Framework

The Theory of Reasoned Action

The theory of Reasoned Action (Ajzen, 1988) was used to provide the major conceptual guide to this study.

According to Ajzen (1988) "an attitude is disposition to respond favourably or unfavourably to an object, person, institution, or event" (p.14). The theory emphasizes highly specific attitudes, subjective norms, intentions and behaviour. Attitudes follow reasonably from the beliefs people hold about the object of the attitude, just as intentions and actions follow reasonably from attitudes. Information and reflection, involvement, and confidence have all been found to increase the attitude's predictive validity (Ajzen, 1988; Hintika, 1967; Jones, 1984; Powell, 1967; Taft, Dawson & Beasley, 1970).

Further, Johnson and Johnson (1984) say that an attitude object is at the centre of the network of thoughts and some degree of emotion, positive or negative, associated with it. The common element in all attitudes is that they imply an evaluation of some object. Thus, when nurses believe that AIDS is likely to be transmitted to hospital personnel because of contact with clinical specimens despite precautions, the more likely nurses' evaluation regarding this factor would be that it is dangerous to handle these patients' specimens. The nurses perceive that they are more prone to contracting the disease from the patients'

specimens. To prevent contagion, their behaviours might be to avoid caring for patients with AIDS despite their high level of knowledge.

"Attitudes help people in many ways, such as understanding the world around them by organizing the very complex array of stimuli in the environment" (Triandis, Adamopoulos & Brinberg, 1984, p.29). Further, attitudes help people to protect their self-esteem and to adjust to a complex world so that they will do the right (rewarding) things at the right time. Attitudes can also help people to express their fundamental values (Jones, 1984; Lehrer, 1974).

A person forms an intention to engage in a certain behaviour. Intentions are assumed to capture the motivational factors that affect behaviour; they are indications of how hard people are willing to try and of how much effort they are planning to exert in order to perform the behaviour (Fishbein & Ajzen, 1975).

The second determinant of intention is the person's perception of social pressure to perform or not to perform the behaviour under consideration. Since it deals with perceived normative prescriptions, this factor is termed the subjective norm. People tend to perform a behaviour when they evaluate it positively and when they believe that others important to them think they should perform it. Thus, when Tanzanian nurses indicate that "anyone practising

anal sex deserves to get HIV/AIDS", they may be reflecting their culture/norms. In this case, a nurse's deserting a patient with AIDS who practices anal sex reflects perception of what other significant others think she/he would do.

Subjective norms are assumed to be a function of beliefs, but beliefs of a different kind, namely the person's beliefs that specific individuals or groups-- for example, a person's parents, spouse, close friends, and co-workers, depending on the behaviour involved-- approve or disapprove of the behaviour.

In comparison with other studies which used a theory of reasoned action, Pender and Pender (1986) conducted a study on attitudes, subjective norms and intentions to engage in health behaviours using the theory of reasoned action of Ajzen and Fishbein (1980), to analyze the relationships between the above mentioned-variables. The findings of this study provided limited support for the theory of reasoned action. For example, weight was mediated by either component of the model, indicating that biological variables may influence intention to exercise independent of attitudes and subjective norms. The authors reported that intentions to control weight by dieting and by avoiding highly stressful situations were associated with positive attitudes toward these behaviours.

Similarly, Lierman, Young, Kasprzyk and Benoliel's (1990) study on predicting breast self-examination (BSE)

using a theory of reasoned action (TRA) revealed that TRA can be an effective model for understanding intention to perform BSE and actual BSE performance. Also, only the attitudinal component of the model significantly contributed to the prediction of intention to perform BSE.

According to the literature, there is a reason to believe that the theory of reasoned action might be applicable to attitudes, knowledge and support of nurses caring for patients with AIDS (Kerr & Horrocks, 1990; Jemmont & Jemmont III, 1991). From previous studies, the theory has shown utility in predicting a broad range of health-related behaviours, including breast self-examination, smoking cessation, weight control, infant feeding and contraceptive utilization (Davidson & Jaccard, 1979; Fishbein, 1982; Jorgensen & Sonstegard, 1984; Lierman et al., 1990; Manstead, Proffit & Smart, 1983; Pender & Pender, 1986; Schifter & Ajzen, 1985)

The following hypothesis were generated for this study.

Hypotheses

1. The nurses' attitudes about caring for patients with AIDS may be predicted by the nurses' knowledge about AIDS and available support to them.
2. The nurses in the teaching hospitals have higher knowledge about AIDS than nurses in the regional hospitals.
3. The nurses in the teaching hospitals have more support

than those in the regional hospitals.

4. The nurses in the teaching hospitals have more positive attitudes toward patients with HIV/AIDS than do those in the regional hospitals.

Chapter 3

Methodology

Design

The design of this study was descriptive and comparative. The purpose of using this design was to collect and compare information from Tanzanian nurses who care for patients in two teaching hospitals and in two regional hospitals. The three variables that were measured were knowledge, attitudes and support.

The theory of reasoned action (Ajzen, 1988) provided a conceptual framework for this study within which knowledge, attitudes and support of nurses caring for patients with HIV/AIDS were considered. The theory emphasizes highly specific attitudes, subjective norms, intentions and behaviours.

Setting

The study took place in four sites in Tanzania: two teaching hospitals and two regional hospitals. The first teaching hospital (A1) was selected in the city. As the major teaching and referral hospital for the country, it receives HIV patients from all the regional hospitals in the country. This means that there are almost always patients who have AIDS or who are HIV seropositive. From 1983 to June 1990, 6,063 patients with AIDS had been treated at this

hospital, which by 1991 had 671 registered nurses.

The second teaching hospital (A2) is a referral hospital for the Lake regions. The cumulative AIDS cases in this region from 1983 to 1990 was 720 (TNACP, 1990). There were 206 registered nurses in this hospital by 1991.

The first regional hospital (B1) lies in the heart of the country and receives many patients/travellers who have to connect different routes through this town. The cumulative number of AIDS cases in this region from 1983 to 1990 was 248 (TNACP, 1990). In 1991 this hospital had 203 registered nurses

The second regional hospital (B2) is located in the north-western part of Tanzania. This region is along the border of Tanzania with Rwanda and Burundi in the west and Uganda in the north. This region has the second highest incidence of AIDS -- (from 1983 to June 1990 2,656 patients) in the country. By mid-1991 there were 214 registered nurses in this hospital.

Instrumentation -- Questionnaire

The data were collected using a questionnaire (see Appendix A). The questionnaire was adapted from Lynch's (1990) questionnaire which consisted of 73 questions about attitudes, knowledge, support and demographic factors (see Appendix B). The researcher received permission from Lynch

to use and modify her questionnaire (see Appendix C). The researcher removed some questions which did not pertain to the situation in Tanzania, for example, most questions pertaining to homosexuals, since homosexuality is not a major factor in AIDS incidence in Tanzania. The researcher also modified 10 questions -- (25, 37, 40, 46, 53, 75, 85, 86, 87 and 91).

In addition, four questions-- three knowledge questions, (72, 78, 83) and one attitude question, (84) were adapted from Armstrong-Esther and Hewitt's (1989) questionnaire. Permission to use the four questions was granted by Armstrong-Esther (see Appendix D).

The researcher also developed twenty-seven questions that she thought were important to reflect Tanzanian nurses' attitudes and knowledge about heterosexual patients with HIV/AIDS.

In all 43 knowledge questions, 41 attitude questions, eight support questions and 11 demographic factors were constructed and used. The questionnaire was accompanied with an informational sheet (see Appendix E).

The knowledge questions were made up "true" or "false", and some questions were on 5-point scales where 1 =strongly agree, 2 =agree, 3 =no opinion, 4 =disagree, and 5 =strongly disagree. The attitudes questions were in the same format as the knowledge questions. The support questions were all

"yes" or "no" questions. Subjects indicated whether they thought each statement was true or false, or they rated how much they agreed or disagreed with it. Open-ended questions were asked and the respondents were asked to describe the situations accordingly.

For descriptive and statistical analysis purposes, for the true and false knowledge questions, the correct knowledge answers were coded as 1 and the incorrect answers were coded as 0. Knowledge questions on the Likert scale were also given a code of 1 if answers for five or four were correct and a code of 0 was given if answers two or one were wrong; reverse scoring was applied accordingly.

For the attitude questions, the same procedure was applied except that a positive attitude answer was given a code of 5 and a negative attitude answer was given a code of 1; Reverse scoring applied accordingly. For support questions, a code of 5 was given for available support and a code of 1 for no available support.

All data were coded by the investigator and analyzed using the Systems for Applied Statistics (1990).

Validity and Reliability

Lynch (1990) did not establish the reliability for her questionnaire but did establish content validity. The tool was pre-tested by a panel consisting of three expert

general-staff nurses. The tool was tested for clarity, length, completion time and specificity of the variables to be measured.

The content validity of this thesis questionnaire was established by a panel of six Tanzanian nursing students attending Dalhousie University. They completed the questionnaires and later discussed them with the researcher. The instrument was tested for clarity, length of completion time, specificity of the variable to be measured, and relevance to Tanzanian culture. Reverse scoring was utilized accordingly. For example, a high score means having knowledge and a low score means lacking knowledge. The reliability for this study's instrument was not established until completion of this study.

Sample Selection Criteria

1. General duty nurses.
2. Registered grade A and B nurses
3. Working areas -- medical, surgical, paediatric, maternity and psychiatric wards/units.
4. Both female and male nurses.
5. Chosen randomly using a table of random numbers.

Ethical Considerations

The research proposal was reviewed by the Thesis

Advisory Committee of the School of Nursing at Dalhousie University. As well, it was reviewed by the Human Ethics Committee of the Faculty of Graduate Studies at Dalhousie University. In Dar-es-Salaam, it was reviewed by the Human Ethics Research Committee of the Muhimbili University College of Health Sciences (MUCHS).

Confidentiality was guaranteed through the following actions: (1) Participants were ensured that no names would be mentioned, thus responses were anonymous; return envelopes were coded to maintain anonymity (see Appendix E). (2) No names were necessary on the questionnaire. Completion and return of the questionnaire was considered as informed consent. The questionnaire itself was uncoded. The questionnaire was sent in a larger sealed envelope and returned in the smaller sealed envelope. The questionnaires were given to the ward/block administrators to distribute to the participants. The participants were asked to mail the questionnaire directly to the researcher, using postage stamps included in the return envelope. (3) Data were stored within the confines of the researcher's reading room at home. (4) Participants were informed of their right to refuse to answer any questions or withdraw from the study at any time. No health risks to the nurses were anticipated in the study.

Consent and Confidentiality

A letter with information about the study was written to inform the subjects and heads of institutions who were to participate (see Appendix F & G). Permission to conduct research in Tanzania was granted to the researcher by the Ministry of Health and the Director General of MUCHS (see Appendix H & I). Participants were ensured that no names would be mentioned. The return envelopes had a code number in order to contact nurses who had not responded. All registered nurses were given an information sheet prior to becoming involved in the study in order to ensure voluntary participation.

Subject Profile

The participants in the study were randomly selected from a list of names from the four sample hospitals; 180 nurses were randomly selected from a table of random numbers, 45 from each hospital. Thus, 180 questionnaires were distributed to the randomly selected nurses from the four hospitals. One hundred seventy-two nurses completed and returned the questionnaires, a response rate of 95.5%.

Chapter 4

Results

This chapter presents the results of the study, including the demographic characteristics of the sample, knowledge of. attitudes toward AIDS and perceived support of Tanzanian nurses.

Demographic Factors

Seventy-nine point seven percent of the participants were females and 14.5% were males. Male nurses were worked in all areas except maternity.

Participants were asked to specify areas of their education other than those listed on questionnaire, no one specified any other further education. A few participants indicated as nurse/psychiatric A and nurse/paediatric A which is equivalent to nurse/midwife A.

Further, participants were asked to state the duration they cared for patients with AIDS per day and 71% of the nurses cared for HIV/AIDS patients for 8 hours per day; 23% less than eight hours per day; and 5% more than eight hours per day.

Table 3 summarizes the participants' working areas by gender according to hospitals and the full demographic data can be found in Appendix J.

Table 3

Ward/Unit by Gender per Hospital

Hospitals	A1		A2		B1		B2			
Gender	F	M	F	M	F	M	F	M	Total	%
Medical	17	1	18	7	14	3	16	4	80	49
Surgical	5	0	0	0	0	1	9	2	17	10
Paediatrics	6	1	5	1	5	0	3	0	21	13
Maternity	12	0	7	0	9	0	8	0	36	22
Psychiatry	0	0	0	1	3	4	0	0	8	5
Unknown	1		1		5		1	1 1	10	5.8
Total	40	2	30	9	36	8	37	7	172	100

Summary

Registered A and B nurses participated in this study. More than four fifths of the participants were females; three quarters of them were presently married or had been. The number of their children ranged from 0-8. Most of them had 0-4 children. Most (58%) of the participants had more than ten years of experience in nursing. One hundred forty-five (89%) of the participants had two to ten years of experience in caring for patients with HIV infection. Most of the participants had cared for between 0-49 patients with AIDS. Most of the participants worked in the medical wards, where most patients with HIV/AIDS were found.

Knowledge

The knowledge questions were analyzed by means of frequency distributions, means, and standard deviations, t-test, and ANOVA procedures (see Appendix K for the percentage of correct answers, and Appendix L for correct scores responses by gender of nurses from the four sample hospitals).

Table 4

Descriptive Statistics of Responses to the Three Scales of the AIDS Questionnaire

Variable	Mean	SD	Minimum	Maximum
Knowledge score (Maximum score=43)	33.0	3.8	23	43.0
Attitudes scores (Maximum score = 205)	128.6	20.9	60	173.0
Support score (Maximum score=40)	24.2	8.6	3	36.0

Table 5

Means Scores by Hospital

Hospitals	A1	A2	B1	B2
Knowledge Score	33.1	33.6	32.8	32.6
Attitudes score	130.0	127.0	126.0	130.0
Support score	25.2	24.5	23.2	24.8

Ninety-eight percent of the participants knew that the typical patient with AIDS has multiple opportunistic infections. Further 98.2% of the participants knew that HIV/AIDS cannot be transmitted through kissing, touching, shaking hands, personal belongings and food. All participants knew that AIDS can be transmitted through blood and semen. 95% of the participants knew that women who have HIV/AIDS can transmit it to the fetus. Seventy-eight point six percent of the participants knew that a previously healthy homosexual man who develops pneumocystis pneumonia has a high probability of having AIDS, but only 74.4% of the participants knew that a previously healthy heterosexual man who develops persisting diarrhoea has a high probability of having AIDS. Ninety-five point three percent of the participants knew that prostitutes may be a source of

contracting HIV/AIDS.

The participants' knowledge was generally satisfactory except for certain areas. When subjects were asked whether female homosexuals are at high risk, only 15% correctly answered this question. Forty-nine percent incorrectly stated that casual contact with people who have HIV/AIDS places one at risk of getting the illness.

Forty-six percent knew that HIV/AIDS cannot be transmitted through contact with saliva (e.g. kissing). When participants were asked how HIV/AIDS patients in the hospital should be treated, 45.5% indicated that patients should be barrier nursed, and 44.8% said that patients should be reverse-barrier nursed. Male participants seemed to be less knowledgeable than female nurses, especially in the areas regarding the transmission and risks of AIDS.

The participants were asked to indicate which sources had contributed to their knowledge of AIDS. Further, nurses were asked to specify any other sources which they thought/found contributed to their knowledge of AIDS (Table 6). Newspapers, booklets and pamphlets were major sources of information

Table 6

Sources of AIDS Information

Newspapers, magazines, booklets/pamphlets	95%	(out of 167 respondents)
Radio	99%	(out of 167 respondents)
Friends and family	88%	(out of 165 respondents)
School - primary, secondary	51%	(out of 159 respondents)
School - institution, university	69%	(out of 161 respondents)
Seminars/workshops by health professions	92%	(out of 168 respondents)
Other sources:		
Audio-visual/cinema video cassettes, film actors and drama	17%	(out of 147 respondents)
Religious gatherings	2.7%	(out of 147 respondents)
The nature of the nurses' job/occupation	26.5	(out of 147 respondents)

The participants indicated that the sources which had provided them with the most information were newspapers, magazines and books on AIDS, and that friends and family had provided them with the least information on AIDS.

Research Questions

"What is the level of knowledge about AIDS among the Tanzanian nurses in the four sample hospitals?" Sixty-one percent of the participants had satisfactory knowledge;

35.1% had passing knowledge and 4.1% had poor knowledge. The Analysis of variance (ANOVA) revealed no significant difference in knowledge among the four hospitals ($F_{3,168}$ = 0.83, P =.47). Table 7 summarizes the findings of knowledge among participants in the four hospitals.

Table 7

Nurses' Knowledge Scores, by Hospital

Hospitals	n	Mean	SD	Minimum	Maximum
A1	43	33.2	3.9	26	43
A2	40	33.6	3.6	26	42
B1	44	32.8	3.1	26	40
B2	54	32.6	4.0	23	40

Hypothesis two stated that "The nurses in the teaching hospitals have higher knowledge about AIDS than nurses in the regional hospitals. Student's t-test analysis revealed no significant difference between the knowledge scores of nurses in the teaching hospitals and those of nurses in the regional hospitals (t = 1.47, P = .14); the former had a mean knowledge score of 33.4 (SD = 3.8), while the latter had a mean knowledge score of 32.7 (SD = 3.6). In general, the Tanzanian nurses have a satisfactory knowledge about AIDS (see Figures I and 2).

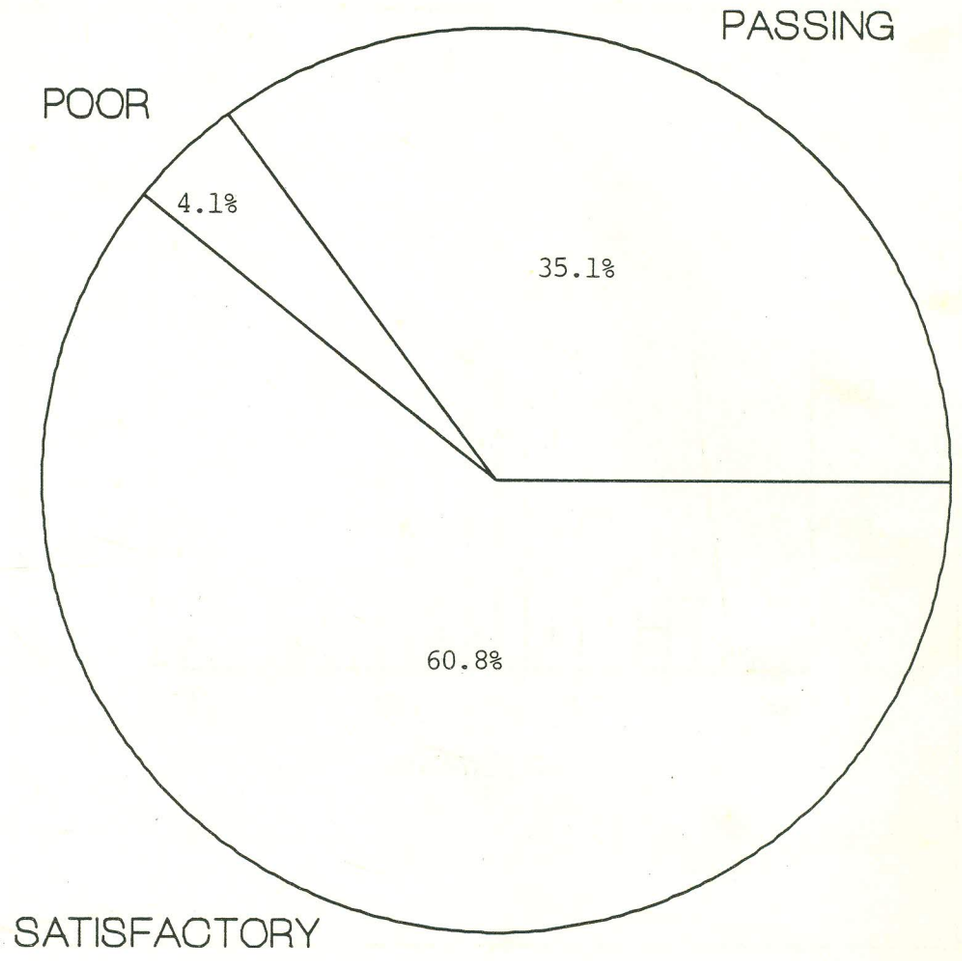


Figure 1

Levels of Knowledge About AIDS

* Satisfactory knowledge 60.8% (n = 104)
  (scored 33 to 43 points = 76 to 100%)
  Passing knowledge 35.1% (n = 60)
  (scored 27 to 32 points = 62.8% to 74.4%)
  Poor knowledge = 4.1% (n = 7)
  (scored ≤ 26 points = 58.1 and below)

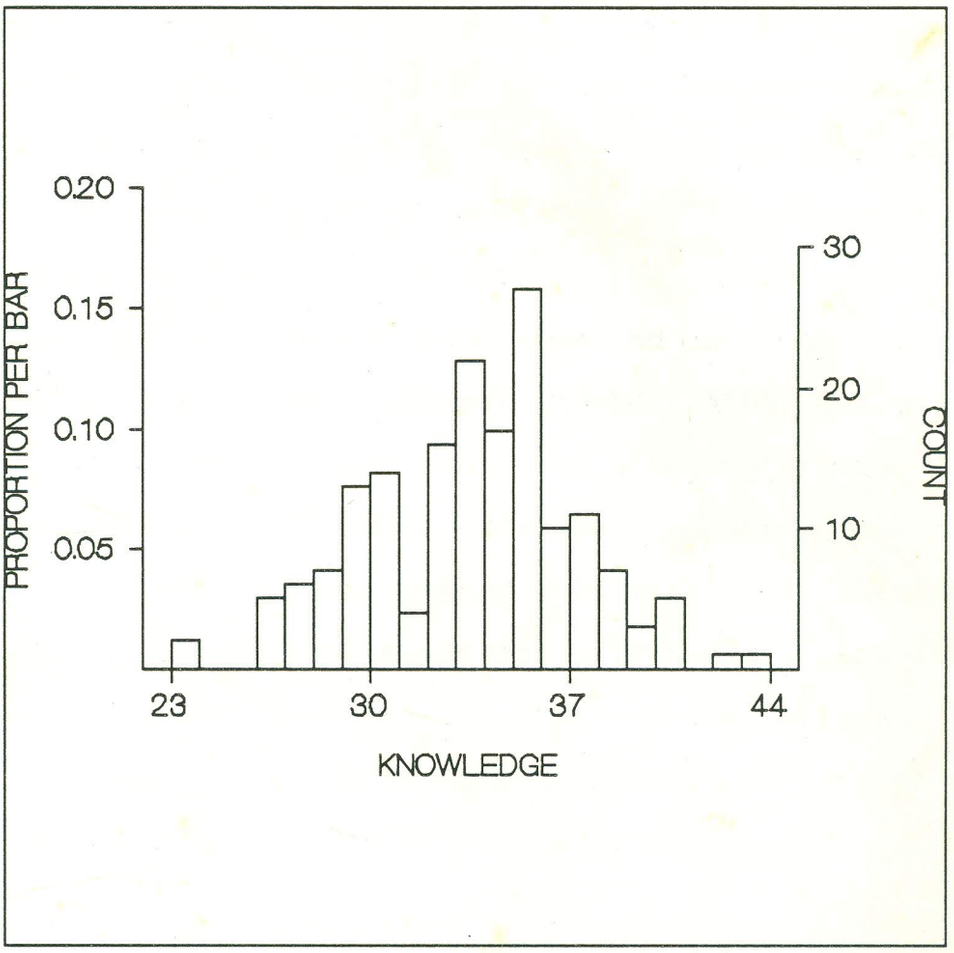


Figure 2

Profile of Knowledge Scores of Nurses

N = 171

There was no direct correlation for knowledge by the participants' age (r =.01, P =.26); academic background (r =.12, P =.11); experience with patients with AIDS (r..14, P =.06); years of experience in nursing (r=.05, P =.45), in-service education attendance (r =.02, P =.76) or the participants' working area (r =.07, P =.36).

Summary

The analysis of knowledge factors revealed that 60.8% of the participants have satisfactory level of knowledge, 35.1% have passing level of knowledge and 4.1% have poor knowledge about AIDS. A majority of the participants indicated that newspapers, magazines and books on AIDS provided them with most information about AIDS, but that audio-visual/cinema, video and drama also contributed to their knowledge of AIDS. In addition, the participants said that friends and family provided them with least information on AIDS. There was no statistical difference in knowledge between the participants in the teaching and regional hospitals, and in length of work experience or type of ward. Males appeared to have lower knowledge.

Attitudes

The attitudes questions were analyzed by means of frequency distributions, means, and standard deviations, t-test, ANOVA and multiple regression (see Appendix M for attitudes scores (responses), by item and Appendix N for positive attitudes score (responses) by gender of nurses from the four sample hospitals).

Question one asked "what are the attitudes of nurses toward AIDS and patients with AIDS?" The data indicate that Tanzanian nurses' attitudes toward patients with AIDS was more toward the negative in all four hospitals (Table 8 and

Figure 3).

Table 8

The Nurses' Attitudes Scores, by Hospital

Hospitals	n	Mean	SD	Minimum	Maximum
A1	43	130.0	20.5	60	163
A2	40	127.0	22.5	63	167
B1	44	126.0	25.4	69	173
B2	45	130.0	18.7	93	172

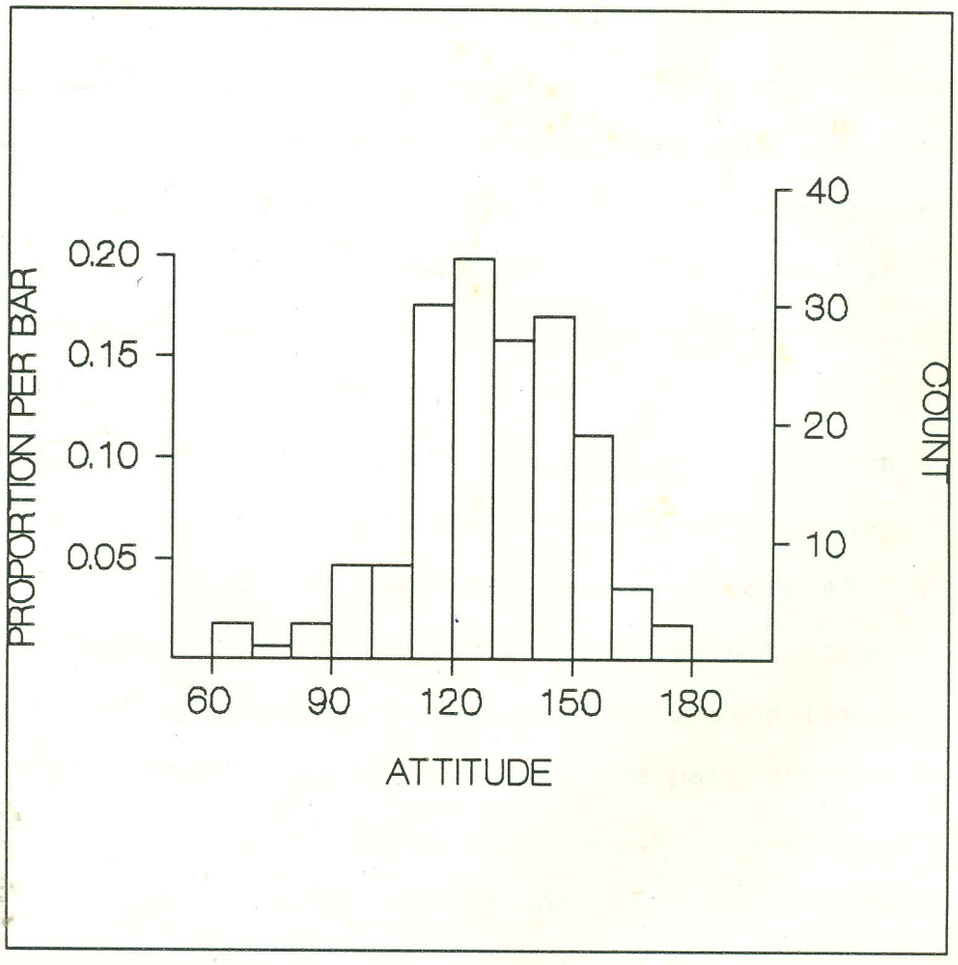


Figure 3

Profile of Attitudes Scores of Nurses
N = 171

Forty-three percent of the respondents indicated that they have had friends or family who expressed concern about association with hospital personnel who have contact with patients with AIDS. Forty- three percent of the participants agreed with the statement that "my awareness of AIDS has made me fearful about caring for homosexual male prisoners", 54% believed that it is likely that HIV/AIDS can be transmitted to hospital personnel because of contact with patients despite precautions. Fifty-six percent of the participants indicated that they would hesitate to do mouth-to- mouth resuscitation on a patient with AIDS for fear of contracting the disease. However, an almost equal number of participants (59%) indicated that they would hesitate to do mouth-to-mouth resuscitation on a patient with infectious hepatitis.

Regarding the statement that "I have never been worried that I might have the symptoms of AIDS", 65% of the participants indicated that they have been worried. Fifty-five percent of the participants disagreed with the statement that "I get satisfaction from caring for patients with AIDS". Ninety-five percent of the participants believed that anal sex is against the laws of God. Most, 93% of the participants, agreed that "sex outside marriage is against the laws of God". Regarding the statement that "AIDS is God's way of punishing promiscuous heterosexuals", 56% of the participants agreed.

Forty percent of the participants agreed (25% neutral) that people who have AIDS are promiscuous heterosexuals, 40% of participants believed that most people with AIDS have the disease through their own fault (15% were neutral) and 50% agreed with the statement that "people who have HIV/AIDS are immoral".

More than two-thirds (69%) of the participants believed that anyone practising anal sex deserves to get HIV/AIDS; Regarding the statement that "if I had a choice, I would refuse to care for patients with AIDS"; 68% of the participants indicated that they would not refuse to care for patients with AIDS (11% were neutral). Regarding the statement that "oral sex (mouth/genital contact) is against most government laws" 63% of the respondents agreed.

Participants were asked how they thought people with AIDS should be treated. Responses are indicated in table 9.

Table 9

Treatment of People With AIDS

No differently than other people with different diseases	87% agreed
Supported in the community	95% agreed
Prohibited from certain occupations	52% agreed
Should carry AIDS cards	40% agreed

Further, the participants were asked if they had any

comments besides what was listed as to how people with AIDS should be treated. Some of the participants' comments were as follows:

1. People with AIDS require human respect, that they should be respected by the community and by the health personnel.
2. They require counselling and health education sessions.
3. They require medical follow-up.

Asked to indicate who should receive special training to work with patients with AIDS, 99% of participants indicated nurses and doctors, 53% said members of rescue services (for example, police), 77% indicated priests/pastors, and 89% said social workers.

The participants were also asked to name any other person/group of people they thought should receive special training to work with patients with AIDS. They indicated the following people: (1) relatives/family, (2) party/government leaders, (3) the general public, (4) traditional medicine practitioners (for example, traditional birth attendants and traditional healers) and (5) skilled workers -- teachers, technicians, newsmen.

Hypothesis one stated that "the attitudes about caring for patients with AIDS may be predicted by the nurses' knowledge about AIDS and the available support". Multiple-regression analysis indicated that nurses' knowledge accounted for 8% of the variance in relation to their attitudes about caring for patients with AIDS ($\underline{F}_{1, 170}$ =

15.22, P-value =.0001)

Hypothesis four stated that the nurses in the teaching hospitals have more positive attitudes toward patients with HIV/AIDS than nurses in the regional hospitals. However, there was no significant differences between the attitude scores of nurses from the two sets of hospitals. Nurses in teaching hospitals had a mean score of 128.5 (SD = 21.5) and nurses from the regional hospitals had a mean attitude score of 120 (SD = 22.1); (t = .62, P = .53).

There was no direct correlation for attitudes by the participants' age (r =.06, P =.42); academic background (r =.14, P =.06), experience in nursing patients with AIDs (r =.10, P =.19); years of experience in nursing (r =.02, P =.76) and in-service education (r =.12, P =.11).

Summary

Although that the participants had a good understanding of AIDS, their attitudes toward caring for patients with HIV/AIDS were more toward the negative than the positive. For example, more than half of the participants indicated that they would not do mouth-to-mouth resuscitation on a patient with AIDS, that patients with AIDS should be barrier nursed, and that people with HIV/AIDS should be prohibited from certain occupations. Further, they indicated negative attitudes toward questions concerning sexuality, especially homosexuality. Interestingly enough, some participants did

indicate being supportive and comfortable in caring for patients with HIV/AIDS. They nevertheless showed fear of being in contact with these patients. For example, more than half of the participants believed that it is likely that HIV/AIDS can be transmitted to hospital personnel because of contact with patients, despite precautions. There was no statistical difference between the attitudes of nurses in the teaching hospitals and those of nurses in the regional hospitals.

Support

To analyze the support questions, frequency distributions, means, standard deviations, t-test, and ANOVA procedures were used.

The participants were asked whether their spouse/friends provided them with the most support when caring for HIV/AIDS individuals, and 71% of the subjects agreed. Asked to describe the type of support they received from their spouses and friends, participants indicated that they received moral support from them. Seventy-five percent of the participants indicated that they had a staff support group where they worked, with 88% indicating this was a formal support group. Eighty-two percent of the participants said that they felt they could discuss concerns or feelings at these support groups. Those who felt that they could not discuss concerns or feelings at these support

groups, indicated that they talked to their fellow staff, members of family and social workers. Support was not able to predict the participants' attitudes about caring for patients with AIDS ($F_{2, 168}$, 1.95, P =.16).

Of 164 participants who answered the question only 57% indicated that they had attended some in-service education on HIV/AIDS. The majority of these indicated that the programme was less than a day.

Approximately 44% of the participants indicated that where coordination of care of HIV/AIDS was discussed, multidisciplinary meetings were held regularly, 37% said that they were held occasionally and 19% said no such meetings were ever held.

Question three asked "what are the available types of support for Tanzanian nurses caring for patients with AIDS?" The majority of participants indicated that the type of support available for them was "moral support" from informal sources. Hypothesis three stated that "the nurses in the teaching hospitals have more support than those nurses in the regional hospitals". However, t-test analysis revealed no significant difference in the support available to nurses from the two sets of hospitals, (t = .26, P = .79) and the mean score of nurses in the teaching hospitals was 24.9 (SD = 8.0) while for the nurses in the regional hospitals, the mean was 24 (SD = 9.1) (Table 10 and Figure 4).

Table 10

The Nurses' Support Scores, by Hospital

Hospitals	n	Mean	SD	Minimum	Maximum
A1	43	25.2	7.5	10	36
A2	40	24.5	8.5	3	35
B1	43	23.2	9.2	4	35
B2	45	24.8	9.0	6	36

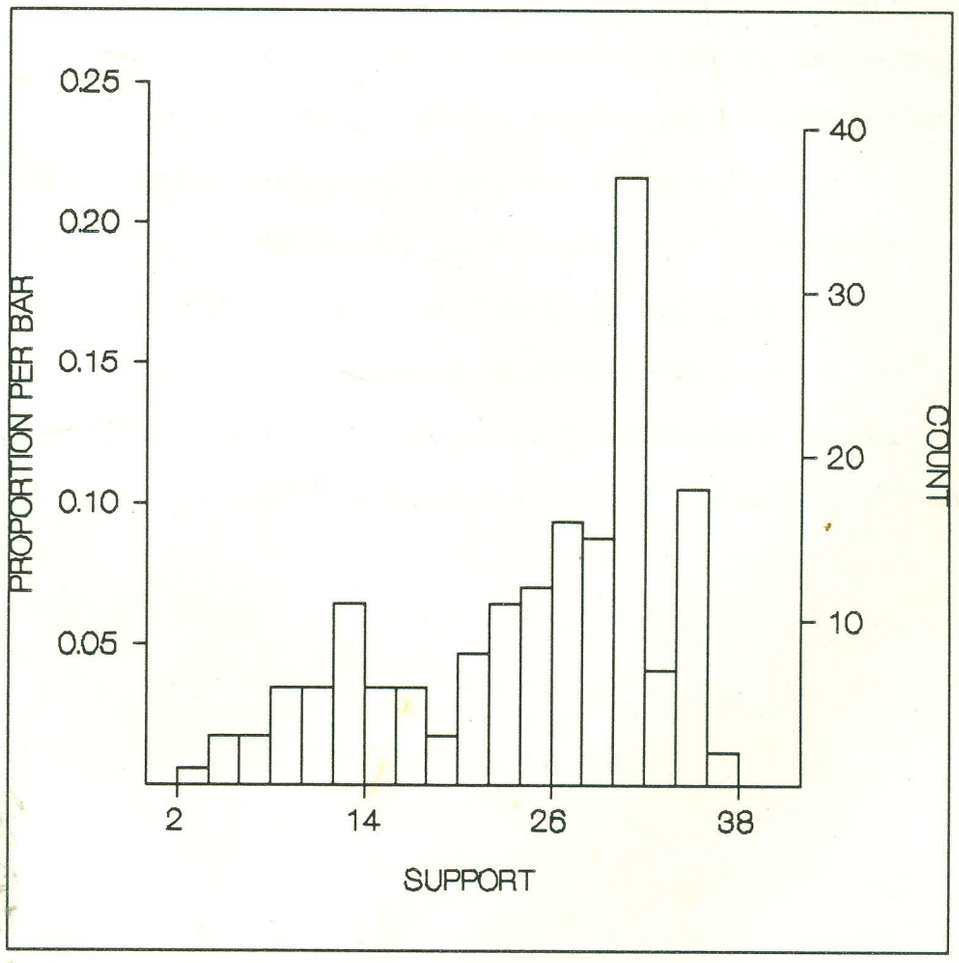


Figure 4

Profile of Support Scores of Nurses

N = 171

Summary

Most participants indicated that they had a staff support group where they worked. However, they indicated that they received most support from their spouses and friends. About 82% of the participants felt that they could discuss any concerns or feelings they had about caring for patients with HIV/AIDS at these support groups. Those participants who did not have support groups in their working areas talked to social workers, family members or to their fellow staff. Half of the participants indicated that they had attended in-service education on HIV/AIDS for less than a full day. There was no statistical difference in support between nurses in the teaching and regional hospitals. Overall, Tanzanian nurses seem to have a supportive working environment, with emotional (moral) support being the main type of support available to them.

Chapter 5

Discussion of the Results

The study was based on exploration of Tanzanian nurses' knowledge, attitudes and available support when caring for patients with HIV/AIDS. The researcher's assumptions were as follows:

1. Tanzanian nurses would have low levels of knowledge about AIDS and would fear contracting AIDS from patients with AIDS. Interestingly, most participants (60.8%) were found to have passing or satisfactory levels of knowledge about AIDS in this study except for transmission, and risk factors. Their knowledge level appeared to be more consistent with the knowledge of general public of Tanzania. One difference: in the general public males and urban residents were more knowledgeable than females (Muhondwa et al., 1991), in this study of nurses no difference urban to rural was found, and female nurses had more knowledge. From the fact that the participants in this study had no higher knowledge about AIDS than the general public, it may be inferred that the nurses' sources of information about AIDS are the same sources as those of the general public (newspapers, booklets and radio).
2. Tanzanian nurses would have negative attitudes about caring for patients with HIV/AIDS. The study results confirmed the assumption because nurses were found to have

negative attitudes about caring for patients with AIDS. This may be reflecting the general public's attitudes toward AIDS. Despite the public's high levels of awareness on AIDS, their high levels of knowledge of AIDS are not accompanied by the desirable changes in behaviour and practice regarding the prevention of AIDS (Swai, & Van Asten, 1991)). Also (although not documented) there has been some cases where people with AIDS have been discriminated by the general public, for example being fired from their jobs.

The results confirming the assumption were consistent with these from previous studies of hospital staff from Western countries in indicating low or negative attitudes toward patients with HIV/AIDS. Despite the Tanzanian participants' satisfactory levels of knowledge, they indicated fear of contracting the disease AIDS from patients with HIV/AIDS (AIDSphobia), just as previous surveys of nurses in Western countries have indicated. Similarly, Barrick (1988) found that there was a direct correlation between negative attitudes toward gay men and lesbians and unwillingness to work with patients with AIDS ($\underline{r}$ =.50, P<.01).

3. Tanzanian nurses, would not have a supportive working environment when caring for patients with AIDS. Although previous studies have found that nurses in Western countries did not have enough support (Ross & Seeger, 1988; Simmons-

Alling, 1984), and were not able to express their stress or burnout when caring for patients with AIDS, the Tanzanian participants indicated that they have a supportive working environment, although most of the support is informal. Because of high incidence of the disease AIDS, Tanzanian nurses indicated that they received informal support from their spouse, friends and working colleagues. Informal support is not sufficient because in theory people with good support tend to have more positive attitudes. Therefore for nurses to improve the quality care of patients with AIDS need a good supportive (formal support) working environment.

Factual Knowledge

Four hypotheses were generated for the study. The first hypothesis stated that "the participants' attitudes about caring for patients with AIDS may be predicted by the participants' knowledge about AIDS and available support". By using multiple-regression analysis, the researcher found that knowledge was able to predict the participants' attitudes about caring for patients with AIDS by only 8%. Support was not able to predict the participants' attitudes about caring for patients with AIDS. This means that 92% of the participants' attitudes about caring for patients with AIDS was predicted by other contributing factors which were not explored in this study. In the real world, 8% compared to 92% counts as nothing. Thus, it may be inferred that the

participants' satisfactory level of knowledge about AIDS did not influence the their attitudes about caring for patients with AIDS, which were found to be more toward the negative than the positive.

The acquisition of knowledge is intended to change behaviour. This is demonstrated by Gordin et al. (1987) study, which revealed that hospital workers (doctors, nurses, laboratory workers, professional support staff, and non-professional support staff) who had a higher knowledge score were those with positive attitudes, more acceptable professional behaviour, lower anxiety in dealing with patients with AIDS, and a greater willingness to work in the AIDS wards. In nursing, a desired change of behaviour following acquisition of knowledge is change of attitudes toward patient care, much more so in the care of patients with HIV/AIDS. However, this does not seem to be the case with Tanzanian participants. Nurses in North America may have acquired AIDS knowledge through formal education -- workshops conducted by health professionals, in-service education and conferences. Most workshops, seminars, in-service education and conferences include specific sessions designed to change attitudes. This contrasts with Tanzanian nurses whose major source of knowledge about AIDS is the same as the general public's. Therefore the nurses have retained the same cultural and religious views as the society at large. This portion needs to be examined, since

it plays a very important role in the quality of care which patients with AIDS receive from nurses in the four sample hospitals.

The second hypothesis, that "the nurses in the teaching hospitals have higher knowledge about AIDS than nurses in the regional hospitals", was refuted.

It was assumed in this study that participants in teaching hospitals would have had more access to seminars/workshops provided by health professions and to newspapers, magazines and books than would participants from regional hospitals. Usually teaching hospitals are more privileged to educational facilities, for example, having access to expertise in different fields, like AIDS specialists. The participants did comment that nurses were not given enough opportunities in regard to attending seminars or workshops on AIDS. They suggested that they should be given these opportunities or access to AIDS education/information, because they are a very important group of health care workers who work more closely and spend more time with patients with AIDS than any other health care worker groups.

Earlier studies in western countries have revealed that all media sources (TV, radio, news, newspapers and health units) provided more information about AIDS to participants than any other source (professional journals, educational sessions, co-workers, friends and family) (Armstrong-Esther

& Hewitt, 1989; Kerr & Horrocks, 1990).

The lack of correlation between level of knowledge about AIDS and participants' attending an in-service education on HIV/AIDS (r =.02, P =.8), shows that the in-service education on HIV/AIDS was not significant enough to increase the nurses' knowledge of AIDS. This may be indicating that there are very few workshops for them to attend and very few experts on AIDS travelling in the country helping them. This is confirmed by the fact that a majority (66%) of Tanzanian participants indicated that the sources which had provided them with most information on AIDS were newspapers, magazines, booklets and pamphlets.

One question this study was to examine was the level of knowledge about AIDS among Tanzanian nurses in the four sample hospitals. In general the knowledge about AIDS among nurses in both hospital settings was satisfactory. Utilizing a univariate analysis procedure, the mean was = 33 (SD= 3.8); the mode was 35, with the normal curve skewed to the left. The maximum and highest score was 43, the minimum score was 23. Sixty-point eight percent of the participants scored 33 points and above implying satisfactory knowledge about AIDS (of 60.8%, 51.5% of the participants scored 34 points and above or equivalent to $\leq$80% indicating high knowledge, a 34 score was chosen because it is the norm for most schools); 35.1% scored 27 to 32, points meaning passing knowledge; and 4.1% scored 26 points or less indicating poor

knowledge.

Although there was no significant differences in levels of knowledge among participants in the four hospitals, there were differences in hospitals on individual questions. For example, hospital A2 appeared to have incorrectly answered most questions regarding transmission of AIDS. Also, males in general appeared to have been misinformed about the transmission of AIDS.

This level of knowledge is demonstrated by the response to questions about prevalence, clinical manifestations, and prevention of AIDS.

In regard to prevalence 89% of the participants knew that HIV/AIDS is a major problem in their society (Tanzania), and 72% knew that HIV/AIDS is more prevalent in urban areas. In fact, the majority (57%) knew that since 1983 the number of diagnosed cases of AIDS in Tanzania is approximately 13,000, a figure which is not far from the most recent (August 1990) reported cases of 16,250. Further, not all AIDS cases are reported in the health facilities and so some patients with HIV/AIDS in the community are known by most people, regardless of the government's law concerning the rights of people with HIV/AIDS.

In addition, 91 of all participants agreed with the statement that AIDS is the leading cause of death in Tanzania. Comparing the hospital figures, 40% of those who

agreed were participants from regional hospital B2. This can be understood because in Tanzania the first clinical suspects of AIDS were reported from this region in 1983. By June 1990 the region had reported more cases of AIDS (2,658) than any region other than the national capital, Dar-es-Salaam. On the other hand, participants from hospital A1 did not think so perhaps, because this hospital accommodates patients with various diseases and many of these patients die from different problems, that patients dying from AIDS appear to be far fewer compared to all deaths which occur in hospital A1. Hospitals B1 and A2 have few patients with AIDS compared to hospitals A1 and B2. In this respect participants from these hospitals may not have experienced a big number of patients dying from AIDS.

The fact that two-thirds of the nurses responded to the statement that "the number of patients who have died of AIDS in Tanzania is about 2000" was not true may reflect their recognition of incompleteness of the current reporting system, which makes it difficult to estimate confidently the fraction of the epidemic and death rate (mortality) which has been documented by the hospital based-patient reporting. This problem is compounded by the fact that not all patients with AIDS report to health facilities.

However, participants had problems with the questions regarding modes of transmission and risk factors of AIDS. For example, only a few participants from hospital A2 and

from B2 knew that drooling children cannot transmit AIDS. In fact, only 23 participants from hospital B1 and 18 from B2 knew that transmission through casual contact has not been documented. Further, only about half of the participants from hospital A1, B1, and A2 knew that children who are household contacts of patients with HIV/AIDS are not at increased risk of developing AIDS. In addition only 23 participants from hospital A2 knew that HIV/AIDS cannot be transmitted through tears. Half of the participants demonstrated poorly regarding the statement that"HIV/AIDS can be transmitted through saliva". Although there was no significant difference in knowledge found among the participants in the four sample hospitals, it can be seen from the results that these participants have deficit of knowledge in areas of transmission and risk factors of AIDS, and that there are differences in knowledge levels. Therefore there is a great need for an effective AIDS education programme for Tanzanian nurses to bridge the major gaps on AIDS, and so improving the quality care of patients with AIDS.

When the participants were asked whether a nurse who is pregnant should care for a patient with AIDS, 95.5% of the nurses agreed that the nurse should care for a patient with AIDS. (This contrasts with the findings of Blumenfield et al. (1987) that 85% of the nurses they asked indicated that pregnant nurses should not care for a patient with AIDS).

This presumably reflects Tanzanian participants' knowledge that, although patients with AIDS with a cytomegalovirus (CMV) infection may pose a theoretical risk for pregnant women, there are no reported cases of transmission of CMV from a patient with AIDS to a pregnant hospital worker. Another possibility is that so many pregnant nurses have cared for patients with AIDS, that they have seen no risk of catching AIDS from these patients.

The fact that only 57% of the participants knew that HIV can be transmitted through breast-feeding is consistent with Armstrong-Esther and Hewitt's (1989) findings that only half of the nurses knew that HIV can be transmitted through breast-feeding. Morgan and Treadway (1989) recommended that breast-feeding be addressed because of the level of disagreement among their participants on that point. The controversy is that one has to weigh the benefits of breast-feeding a baby and the consequences of not breast-feeding especially in developing countries, where breast-feeding is common practice. A fact that many families are unable to afford artificial milk, breast-feeding is emphasized in Tanzania.

In addition, 40% of the participants knew that children who are household contacts of patients with HIV/AIDS were not at increased risk of developing AIDS. This may indicate some fear of contagion of AIDS among nurses who care for patients with HIV/AIDS. AIDS is a new disease and there is

much unknown about its transmission and risk factors. These unknown factors may contribute to health workers' not believing what researchers and AIDS experts report about AIDS. Many nurses may feel that scientific knowledge is not sufficient. In support, Servellen et al.'s (1987) study revealed that those nurses who were more knowledgeable about AIDS's signs and symptoms and who had attended more lectures on the subject were not necessarily more comfortable about caring for patients with AIDS.

In respect to clinical manifestations, most participants understood the signs and symptoms of HIV/AIDS. For example, 99% of the participants knew that the typical patient with AIDS has multiple opportunistic infections. Eighty-eight percent of the participants knew that the incubation period for AIDS is between four months and ten years. Interestingly, 78 % of the participants knew that a previously health man who develops pneumocystis carinii has a high probability of having AIDS. Pneumocystis carinii is a more common symptom in patients with AIDS in western countries than in Tanzania. In comparison only 74% of participants knew that a previously healthy man with a persistent diarrhoea has a high probability of AIDS. But diarrhoea is a common symptom for patients with many diseases in Tanzania. This may be indicating that the participants have acquired knowledge about AIDS through their own observations of patients with AIDS, though there

was no direct correlation for knowledge by the participants' years of experience with patients with AIDS. Also, the participants indicated that they gained AIDS knowledge from the nature of their work, caring for patients with AIDS and some participants had assisted in AIDS research. The participants being important members of the general public, also acquired knowledge of AIDS through the same sources (newspapers, booklets, pamphlets or radio) as the general population. About half of the participants indicated that they had attended in-service education on HIV/AIDS for less than a full day, which did not increase or influence (not statistically significant) the participants knowledge

In regard to the prevention of HIV/AIDS, the majority of participants had a good understanding; for example, 94% knew that using a condom for sex protects against the risk of getting HIV/AIDS. There was a nearly equal division of the participants with respect to whether patients with HIV/AIDS should be barrier nursed or reverse-barrier nursed: 45.5% knew that patients with HIV/AIDS should not be barrier nursed, while 44.8% knew that patients with AIDS should be reverse-barrier nursed, in order to protect them from the general patients because of the risk of opportunistic infections. But the participants' responses to this question may indicate their fear of contracting HIV/AIDS from patients with AIDS for whom they care. In fact, it may be that the participants did not understand or know the

meaning or the difference between barrier nursing and reverse-barrier nursing, due to English being their third or second language, even though English is the language used in higher education and in nursing schools. This may affect the quality of care provided by these nurses to the patients with HIV/AIDS. It may be valuable to examine the nurses' concerns about contagion of AIDS in order to improve the quality of care of patients with HIV/AIDS.

Despite the generally satisfactory level of knowledge, there were misconceptions or lack of knowledge. About half of the participants indicated that Kaposi's sarcoma was the most common presenting complaint of AIDS in Tanzania, which in fact is not the case. This difference in knowledge may be due to the different sources of information. For example, 69% of 161 participants indicated that they acquired AIDs education through schools and the rest did not indicate their sources of information. The participants might have read signs and symptoms information from AIDS booklets or pamphlets. Kaposi's sarcoma has long been shown to be strongly associated with immunodeficiency situations, and HIV in particular. Reports from Uganda and Rwanda have documented aggressive Kaposi's sarcoma to be strongly associated with HIV/AIDS. However in Tanzania, there is strong association between pulmonary tuberculosis which is then complicated by empyema and HIV/AIDS (Lema, 1991).

More than four fifths (86%) of the nurses did not know

that female homosexuals were at low risk. This may be due to the high risk in females in general or reflects the country's culture or norms that homosexuality is not accepted by the Tanzanian community, although it is believed that homosexuality does exist in small numbers. Further, more information about modes of transmission of AIDS and risk factors may be valuable for nurses in order for them to educate patients about AIDS effectively.

Attitudes

Previous surveys have found that levels of knowledge were associated with modification of attitudes about AIDS, but a few have found that, despite good knowledge scores, negative attitudes toward people with AIDS have persisted (Gallop et al., 1991; Gallop et, al., 1992). The findings in this study reveal similar trends of low positive attitudes of nurses caring for patients with HIV/AIDS.

In theory, that nurses with adequate support should be more positive about caring for patients with HIV/AIDS; in fact, this was not the case in this study. Informal support did not seem to play a part in the participants' positive attitudes about caring for patients with HIV/AIDS. This may be due to lack of formal support, hospital facilities, and a lack of incentives nurses believe should be provided to them because of the risks they take in caring for patients with AIDS.

The fourth hypothesis, that "the nurses in the teaching hospitals have more positive attitudes than those nurses in the regional hospitals", was not supported by a statistical analysis of the data. It is assumed that hospital workers in teaching hospitals which tend to be well equipped with caring facilities and workers exposed to numerous educational facilities should have liberal attitudes toward AIDS and patients with AIDS.

Considering the general attitudes of Tanzanian nurses toward AIDS and patients with AIDS, a univariate analysis procedure indicated the mean attitude to be 128.6 (SD = 20.9); the mode was 120; with the normal curve being skewed slightly to the right, 48% of the participants were above the mean, up to 173 points the highest observed score. Overall, the attitudes of the participants in this study about AIDS and patients with AIDS were more toward the negative than the positive. Further, nurses in this study demonstrated fear of contracting the disease AIDS (AIDSphobia), and negativism toward most sexuality or moral aspects against the culture norms. In fact, a few moral questions were not answered by many participants compared to non-moral questions. It may be inferred that the participants did not want to commit themselves especially when it touched personal feelings, perhaps because they found it painful or difficult to answer. For example, only 156/172 participants responded to "I get satisfaction from

caring for patients with AIDS". The possible explanation for a number (27%) of the participants not getting satisfaction in caring for patients with AIDS, may be that because most of these patients die, while the nurses (care-givers) would like to see these patients recovering from an illness. in addition, only 157/172 participants responded to "people who have AIDS are immoral".

Almost 56% of the participants indicated that they would hesitate to do mouth-to-mouth resuscitation. The participants' hesitation to do mouth-to-mouth resuscitation on a patient with AIDS may be due to the patients presenting clinical signs and symptoms (for example, presence of herpes simplex). As well 58% of the participants also indicated that they would hesitate to do mouth-to-mouth resuscitation on a patient with infectious hepatitis, so there seems to be no difference in this regard in participants' attitudes toward patients with AIDS and toward patients with infective hepatitis, which is a more contagious but a less serious disease than AIDS. Participants' attitudes equally point to the negative. In the case of AIDS a possible explanation may be due to the stigma attached, in that, if for instance, a Tanzanian nurse contracts AIDS the society would attribute it to promiscuous heterosexual behaviour which might not be the case. Living with probabilities can create a big dilemma in a person's attitude. However, given the gaps in knowledge regarding transmission and risk factors of AIDS,

the more likely explanation is that the participants may be indicating genuine fear of catching AIDS. Similarly, 44% agreed with the statement that "most people with AIDS have the disease through their own fault".

The theory of reasoned action (Ajzen, 1988) describes intentions as a function of two basic determinants, one personal and the other reflecting social influence. The personal factor is the individual's attitude toward the behaviour; the other is the person's perception of social pressure to perform or not to perform the behaviour under consideration (that is, the subjective norm). For example, previous studies have revealed that close family members were perceived as negative to a nurse giving care to the patient with AIDS. Fifty-five percent of Tanzanian participants indicated that their friends and family expressed concern about associating with hospital personnel who have contact with patients with AIDS. Earlier studies indicated that 40% of nurses perceived their spouse as negative rather than positive, and 32%, other family members. Their friends, neighbours and church members were considered more negative than positive (Kerr & Horrocks, 1990).

This is further reflected in the fact that, of 169 participants, 161 (95%) indicated that "anal sex (penis in anus) is against the laws of God". Other consistent findings were those from a statement of "oral sex

(mouth/genital contact) is against most government laws": 62% of the participants agreed. Participants believe that anyone practising anal sex deserves to get HIV/AIDS. The fact that 49.7% of the participants agreed with the statement that "people who have HIV/AIDS are immoral" may indicate that participants have strong feelings for religion. This finding is consistent with the fact that 93% of the participants agreed with the statement that "sex outside marriage is against the laws of God". The participants' religious background was not explored, however, in retrospect, it would have been of interest to do so. Antecedents of subjective norms are also assumed to be a function of beliefs, but beliefs of a different kind, namely the person's beliefs that specific individuals or groups approve or disapprove of performing the behaviour (Ajzen, 1988). In this case, Tanzanian participants' beliefs about sexual lifestyles may be due to the individual's beliefs in religion or ethnic customs/culture. Religious beliefs is further indicated by some participants' specifying that religious gatherings were among the sources that contributed to their knowledge of AIDS. Further, these participants' responses toward sexuality may reflect how likely it is that most people who are important to them would approve of their performance given a behaviour. Responses to all these questions would indicate attitudes outside their culture of norm. Moreover, these participants

belong to the community group with a strong tradition culture and religious beliefs. Apparently, the findings of this study did not support the theory of reasoned action because the theory emphasizes highly on behaviour and specific attitudes. The questionnaire for this study did not emphasize on behaviour, nor attitudes regarding the participants' religious beliefs.

In spite of this, when participants were asked whether they would ask for a transfer to another ward if they had to care for HIV/AIDS patients on a regular basis, 95% said no. This indicates reality of the situation whereby there are too many patients with AIDS that there is no place to transfer to. However, this does not mean that all patients with AIDS are well cared for. In Tanzania, patients with AIDS are cared for in all units depending on the reasons for their admission.

This is consistent with Lynch's (1990) findings, where 83% of the nurses indicated that they would not ask for a transfer. Similarly, the fact that 68% of respondents said that they would not refuse to care for patients with AIDS if they had a choice and that 87% said that they would not refuse to take care of patients with AIDS if assigned to do so. (In contrast, however, Blumenfield et al., 1987) results showed that half of their respondents would ask for a transfer if they had to care for patients with HIV/AIDS on a regular basis).

Servellen et al., (1987) study revealed that nurses who were more comfortable with patients with AIDS and nurses who had experience with patients with AIDS were less likely to be overly cautious. There was no correlation between the nurses's attitudes and their years of experience in caring for patients with HIV/AIDS in this study. Although 38% of the respondents agreed with the statement "it is dangerous for hospital workers to care for HIV/AIDS patients", 74% indicated that they would not disown a family member who had AIDS, and 85% said they would share a house with a person who had HIV/AIDS. This is consistent with the fact that 99% of respondents knew that the statement "AIDS can be transmitted through kissing, touching, shaking hands, personal belongings and food" was wrong. This positive response may be due to the fact that in Tanzania many patients with HIV/AIDS are supported and cared for in the community. Also, Tanzanian nurses do care for patients with various infectious diseases and they may feel comfortable and efficient with barrier nursing and [universal safety precautions] methods, unlike nurses from North America and Western countries, where only the few nurses care for patients with infectious diseases such as infective hepatitis and HIV/AIDS are up to date with barrier nursing and universal safety precautions.

From the findings of this study it may be inferred that Tanzanian nurses are homophobic of AIDS and patients with

AIDS, but this is not the fact because too few questions on homosexuality were asked in this questionnaire. However, when the participants were asked whether their awareness of AIDS had made them fearful about caring for homosexual male prisoners, 57.4% of the respondents disagreed and 43% of the respondents agreed. Forty-three percent is quite a large number compared to 57%. In Tanzania, it is assumed that male prisoners do tend to practice homosexuality in prisons, and this aspect has to be explored further. Douglas et al., (1985) results revealed that nurses and physicians who acknowledged having a gay friend or relative had significantly lower index of homophobia scores than those nurses and physicians who did not have a gay friend or relative.

The results of this study reveal that Tanzanian nurses are fearful of AIDS and patients with AIDS. For example, although 48% of the respondents indicated that people with AIDS should not be prohibited from certain occupations. It may be worthwhile investigating what types of occupations these nurses think patients with AIDS should be prohibited from, because the participants were not asked to specify in the questionnaire.

Support

Consistent with the findings of early studies that hospital staff tend not to have formal support groups in

their working areas (Ross & Seeger, 1988; Simmons-Alling, 1984), Tanzania nurses also were found not to have formal support in their working areas but informal support groups. Moreover, the vast majority (82%) of participants indicated that "moral support" was the available support they received, especially from their spouses and families. According to Nyamuryekunge (1991), due to the increasing need to offer psychological and social support to those already suffering from AIDS and to their relatives, the Counselling and Social Support Unit was created by the Ministry of health, under the Tanzanian National AIDS Control Programme. Counselling is also increasingly being used as an effective strategy in effecting behaviour change. However, there is no counselling or special support programme established yet for health personnel caring for patients with HIV/AIDS in Tanzania.

Regarding hypothesis three, which stated that "the nurses in the teaching hospitals have more support than those nurses in the regional hospitals", no significant difference in support was found between the teaching and regional hospitals. The support mean for the teaching hospital was 24.4 (SD = 8); the support mean for the regional hospital was 24 (SD = 9). When a univariate-analysis procedure was used, the support mode was 31, the mean 24 and the sample was skewed to the left, 72% of the 172 participants were above the mean. Thus, from these

findings it would be inferred that Tanzanian nurses have adequate informal support in their working areas. However, there were several questions which were not answered, perhaps the participants chose not to answer for their own reasons.

Results regarding in-service education was inconclusive although 93 participants indicated that they had had attended some form of in-service education. For most participants this was less than a full day, and a large number had received no in-service education.

Among the participants' comments were that they should receive extra allowance on top their regular salaries. They indicated that nurses who care for patients with AIDS are more prone to catching AIDS from patients with HIV/AIDS. They also suggested that the government should supply adequate hospital facilities in all wards, -- for example, gloves, antiseptics, disposable syringes and needles -- in order to minimize the risks of contracting HIV infection.

Reliability

Cronbach's alpha was used to establish the reliability for the instrument. The coefficient alpha for this instrument was .66. The coefficient alpha for the knowledge questions was .31; the coefficient alpha for attitude questions was .66; and the coefficient alpha for support questions was .46.

Chapter 6

Conclusion and Recommendations

This chapter will discuss study's limitations and its implications for nursing practice and research, and will state recommendations and conclusion.

Limitations of the Study

1. English, being the nurses' second or third language, may have been a barrier to understanding some of the questions and thereby explain why some of the questions were left blank.
2. The data are based on the participants' perceptions/beliefs and interpretations of their situations and experience. This approach relies on honesty and willingness of each subject to share information.
3. There is some tendency of some subjects to misrepresent their attitudes by giving answers that are consistent with prevailing social views (subjective norms). This is known as the "social desirability response bias" (Polit & Hungler, 1987). Many participants may have answered according to social acceptable fashion because they thought this was the expected. There were also numerous blanks to some of the questions -- some nurses may have chosen not to answer.
4. Since the questionnaires were distributed to the participants in their working areas, some participants may

have shared ideas with each other while completing the questionnaire.

Implications for Nursing Practice

Based on the baseline data findings of this study, it would appear that there is a definite need for in-service education and formal support for nurses caring for patients with AIDS. Therefore, nursing administration and the ministry of health should be approached to provide the required resources. Nurses have a responsibility to educate the public, they need to be able to identify which behaviours may pose a threat to people's health and well-being. For nurses to give accurate information, they must be well informed, both in giving health information and delivering nursing care. Thus, nurses need both a sound knowledge base and a positive attitude to provide quality care to patients with HIV/AIDS.

Implications for Nursing Education

The data collected in this study have highlighted that nurses need formal education regarding all aspects of AIDS and particulary transmission and risk factors. Despite of a satisfactory working level of knowledge in many areas about AIDS, nurses have low positive attitudes toward patients with HIV/AIDS. The Tanzanian schools of nursing must incorporate AIDS education in the curriculum, be supportive

to the nurses caring for patients with HIV/AIDS.

Meanwhile, Tanzania's nursing services or nursing administration must be approached to initiate in-service, seminars and workshops on AIDS.

Implications for Nursing Research

Nursing education and nursing services may need to carry out more studies on AIDS in order to meet effectively nurses' needs in caring for patients with AIDS. The main objective of intensive research on AIDS is ultimately to improve the quality of care given to patients with AIDS. Some of the topics recommended below could be examined.

Further Research

1. Explore nurses' beliefs/attitudes toward AIDS and patients with AIDS in relation to religion and culture.
2. Examine nurses' fear (AIDSphobia) of contagion and other concerns about AIDS when caring for patients with AIDS.
3. In-depth qualitative research (interview) on nurses' levels of knowledge of and attitudes toward AIDS and on the type of support required in their caring for patients with AIDS. An in-depth qualitative research (interview) on nurses' knowledge of and attitudes toward AIDS, and the required support, may be necessary before Tanzania's Nursing schools can plan appropriate education programs on AIDS for these nurses. The interview should be conducted in Swahili

which is a national language, to make to sure that all participants understand the questions. One study is not enough to provide adequate information that is needed to plan an education program on AIDS.

5. Replicate this study and in the Likert scale include "I do not wish to answer" in order to allow those participants who do not wish to say anything to say so.

Recommendations

1. Nurses should be more involved or allowed to attend seminars/workshops regarding studies on AIDS within and outside the country.
2. Formal counselling and support groups for health care workers are required to create a supportive working environment and ultimately to improve the care of patients with HIV/AIDS.

Conclusion

AIDS is a global epidemic. In Tanzania, as in other African countries, AIDS is a major problem, and the country is facing an increasing number of infected people. Nurses throughout the country are challenged by the care of HIV/AIDS patients in hospitals and in the community. This study's findings revealed that 96% of the nurses had satisfactory level of knowledge. However, nurses need more information on casual contact with AIDS. Despite the

satisfactory level of knowledge of AIDS, the nurses' attitudes were still more on the negative than the positive side. The type of social support available to nurses was mainly emotional (moral) support. Nurses require more supportive working environment in order to provide quality care to patients with AIDS.

There was not a statistically significant difference in knowledge, attitudes and support between nurses in the teaching and regional hospitals.

Until a cure or vaccine against AIDS is discovered, prevention stands to be the best solution in preventing the rapid increase of AIDS. Education programs on AIDS must try to incorporate accurate information into the belief system of hospital workers in order to encourage the change of negative attitudes to positive attitudes.