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Nurses' Knowledge, Attitudes, and Coping Related to HIV and AIDS in a Rural Hospital in South Africa

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ABSTRACT The aim of this study was to determine nurses' knowledge, attitudes, and coping related to HIV and AIDS in a rural hospital in South Africa. A randomly selected sample of 222 nurses was asked to respond to a self-administered questionnaire. Results indicate that the majority (83.8%) of the sample had a medium level of HIV knowledge and had a positive attitude towards caring of HIV/AIDS patients (75.8%), while a minority had negative attitudes toward caring of patients with HIV/AIDS. Regarding coping, 71.2% of the nurses had a medium level of coping in caring for patients with HIV/AIDS. Attitudes towards caring of HIV/AIDS patients was significantly associated with coping ($r = .31$, $p < .05$). Female nurses displayed a more positive attitude towards caring of HIV/AIDS patients than male nurses ($t = 1.89$, $p < .05$). Nurses who had more than 10 years working experience had a significantly more positive attitude ($t = 2.16$, $p < .05$) and coping ability ($t = 2.35$, $p < .05$) than nurses who had less than 10 years of working experience. In conclusion, nurses had insufficient knowledge about HIV/AIDS, one in four nurses had negative attitude and one in five nurses had low coping ability toward caring HIV/AIDS patients. Therefore, in-services training to update on HIV/AIDS knowledge to modify attitudes towards caring of HIV/AIDS patients should be implemented.

INTRODUCTION

There is an estimated 5.5 million people living with HIV in South Africa (UNAIDS 2008). In South African hospitals, almost half of admitted patients (46.2%) were found to be HIV infected and health care providers reported an increased workload, low morale and stressful working conditions (Shisana et al. 2002; Shisana et al. 2004). Hospitals are one of the workplaces, which are faced with double burden of problems related to HIV/AIDS. Hospitals are not only struggling to cope with the number of HIV-related patients that they have to care for, but also the stigma, discrimination and HIV infection amongst the staff. At the beginning of HIV/AIDS epidemic, health-care workers reacted with alarm, fear, over-protectiveness and over-stringent infection control. To date, with the increasing knowledge of modes of transmission and infection-control measures, guidelines have now been established which ensure that staff and patients are adequately protected. Unfortunately, much fear and ignorance still exist.

Various studies identified among nurses compromising and discriminatory attitudes towards patients with HIV and AIDS (Aisien and Shobowale 2005; Delobelle et al. 2009; Ehlers 2006; Lehmann and Zulu 2005; Marchal et al. 2005; Reis et al. 2005; Robinson 1998; Sadob et al. 2006; Zelnick and O'Donnell 2005), misconceptions and lack of HIV knowledge (Aisien and Shobowale 2005; Chen et al. 2004; Delobelle et al. 2009; Ehlers 2006; Niven and Knussen 1999; Rondahl et al. 2003; Sadob et al. 2006), increased work load and stress (Delobelle et al. 2009; Niven and Knussen 1999; Mzolo, 2004), and fear of contracting HIV (Ehlers 2006; Mbanya et al. 2001). Van Dyk (2001) summarises the causes of stress and burnout among nurses who care for patients with HIV/AIDS as follows: HIV/AIDS stigmatises both infected and uninfected individuals working in the field; secrecy and fear of disclosure among people with AIDS make the task of caring for AIDS patients very difficult; over-involvement with people with AIDS and their

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families; moody, uncooperative and hostile AIDS patients; lack of medication and health-care materials and demanding workload. In some district hospitals, HIV-positive patients are initially hospitalized for an average of twenty days and HIV-negative people for five days. Health-care workers feel "exhausted and stressed" from dealing with AIDS patients who need a high degree of attention and care. They feel helpless since they cannot prevent the spread of HIV. The fact that a patient's status of HIV/AIDS may not be disclosed means that health workers do not know which patients pose a risk. In not disclosing the status, they cannot protect innocent people from infection (Mafalo 2003).

Moderates in poor attitudes and care of people living with HIV and AIDS have been identified as occupational characteristics (Knussen and Niven 1999; Pita-Fernández et al. 2004), working experience, HIV knowledge and in-service training (Chen et al. 2004; Delobelle et al. 2009; Mbanya et al. 2001; Walusimbi and Okonsky 2004). Little is known about nurses' coping related to HIV and AIDS (Makoae et al. 2008).

The aim of this study was to determine nurses' knowledge, attitudes, and coping related to HIV and AIDS in a rural hospital in South Africa.

METHODOLOGY

The study employed a cross-sectional descriptive methodology. It was conducted amongst 511 nurses at one rural hospital in Vhembe District in Limpopo Province. The hospital is a regional hospital with six hundred beds and is a referral hospital for seven community hospitals. Simple random sampling was used to select the study subjects. The sample size was calculated by using Yamane formula, $n = N/ 1+ (Ne^2)$, when n = sample size, N = population size, e = significant level (Reid and Boore 1991). The minimum sample size was 224 nurses. After informed consent was obtained, the researchers distributed questionnaires to 250 nurses, and got 222 completed questionnaires back, which was a 89% response rate.

A self-administered questionnaire was used to collect data. The questionnaire was designed and developed based on literature review with four major parts: socio-demographic characteristics of nurses (6 items), knowledge about HIV/AIDS (22 items) (van Dyk 2001; van Rensburg et al. 1992) attitude towards caring for HIV/AIDS patients (22 items) (Check 1998; Painter 1994; Robinson, 1998) and coping (10 items) (van Dyk 2001). The questionnaire was pretested and piloted with the overall *Cronbrach alpha* for HIV knowledge .61, attitude questions .74 and coping .81. The study was granted ethical clearance from the University Health, Safety and Research Ethics Committee and permission to conduct the study was obtained from the Limpopo Provincial Department of Health and management of the study hospital. The data were analysed by using SPSS programme Version 13. Descriptive statistics, Pearson's correlations and t-tests were used to analyse data at significant level at p-value < .05.

RESULTS

Sample Characteristics

Most nurses were female (91%), between 30 to 49 years old (83.3%), and married (59.4%). Regarding professional rank, 52.8% were professional nurses, 25.5% enrolled nurses and 19.8% assistant nurses, about two-thirds of them (61.7%) had more than 10 years work experience as a nurse (see Table 1).

Table 1: Sample characteristics

Variables		*N*	*Percent*
Sex	Male	20	9.0
	Female	202	91.0
Age in years	20-29	22	9.9
	30-39	95	42.8
	40-49	90	40.5
	50-59	15	6.8
Marital status	Single	73	33.3
	Married	130	59.4
	Separated/ Divorced/ Widowed	16	7.3
Rank	Assistant nurse	42	19.8
	Enrolled nurse	54	25.5
	Professional nurse	112	52.8
	Midwife	4	1.9
Work experience	1-10 years	84	38.4
	11-20 years	93	42.5
	More than 20 years	42	19.2

HIV Knowledge

Nurses were not very sure how HIV can be transmitted. They scored a mean of 5.5 (SD=1.4)

of 7), they were also not correct enough on HIV prevention, with a mean score of 7.3 (SD=1.1) of 9 and their knowledge on the nature of HIV was also only moderate, with a mean of 4.3 (SD=1.0) of 6 (see Table 2).

Attitudes towards Caring of HIV and AIDS Patients

Nurses were asked "When they saw an HIV/AIDS patient for the first time, what was your reaction?" Results indicated that 21.3% were shocked, 52.0% felt empathy for the patient, 22.3% feared infection and 4.0% blamed the patient.

Although most nurses agreed with non-stigmatizing attitudes and caring of AIDS patients, a sizable minority had stigmatizing attitudes and non-caring behaviours for AIDS patients, e.g. 12.1% blamed patients for their HIV status, 29.4% felt they were responsible for their disease because of immoral and deviant behaviour, 16.3% said that AIDS patients should not be mixed with HIV negative patients, 19.9% felt that they should not share eating utensils, bathrooms and toilet facilities with other family members, and 59.4% believed that AIDS patients always want to infect others by neglecting themselves.

More than half of the nurses (55.1%) agreed

Table 2: HIV knowledge

Statements	*n*	*Percentage of correct answer*
Transmission Methods of HIV		
1. Sharing needles: Drug users who share needles and syringes are at high risk of HIV infection. [True]	198	89.2
2. Sexual intercourse: HIV is transmitted through sexual intercourse only. [False]	196	88.3
3. Casual contact with HIV positive person [False]	186	83.8
4. Blood transfusion: Blood transfusion cannot transmit HIV infection. [False]	180	81.1
5. Maternal transmission: HIV infection cannot be transmitted from mother to child during pregnancy and delivery. [False]	177	79.7
6. HIV infected people are most infectious soon after becoming infected with virus (i.e. the first 4-8 weeks during sero-conversion) and during the AIDS phase when the symptoms of full-blown AIDS appear. [True]	144	64.9
7. Oral transmission: There is low risk of HIV infection during mouth to mouth ventilation [True]	120	54.1
HIV Prevention		
1. People with HIV/AIDS should have different waiting rooms before admission to the ward.	217	97.7
2. Needles and sharp instruments should be disposed properly in a container to prevent needle stick. [True]	212	95.5
3. All donated blood must be screened for HIV, Hepatitis B and Syphilis [True]	208	93.7
4. People with HIV/AIDS should have separate bathrooms and toilet facilities. [False]	207	93.2
5. BCG is a vaccination for HIV. [False]	207	93.2
6. HIV is preventable through vaccination [False]	201	90.5
7. Gloves are not necessary when handling specimen of a patient with HIV/AIDS. [False]	193	86.9
8. Gloves and gowns are required for any contact with patients with AIDS. [False]	89	40.1
9. HIV virus is very difficult to kill with disinfectant in the environment. [False]	79	35.6
Nature of HIV		
1. Persons with HIV can be asymptomatic but still infectious. [True]	191	93.2
2. People with AIDS died 5 years after the diagnosis. [False]	205	92.3
3. There are more people infected with HIV than actual AIDS. [True]	182	82.0
4. Incubation period for HIV/AIDS is 5 weeks.[False]	168	75.7
5. Suspect the diagnosis of HIV/AIDS in young persons who present with Kaposi Sarcoma. [True]	160	72.1
6. HIV is caused by a retrovirus known as HTL VII/LAV. [True]	47	21.2

that caring for AIDS patients is more stressful than caring for other patients, and 59.4% felt that nurses need an (extra) allowance for caring for AIDS patients, 34.5% agreed that nurses should reduce some procedures with AIDS patients, and most (82.9%) said that AIDS patients must try to help themselves as much as possible (see Table 3).

Coping with Caring of HIV and AIDS Patients

The majority of nurses agreed that it was more demanding for them to care for AIDS than for other patients (68.3%) and more than half (52.7%) felt that their work situation had become worse since the AIDS epidemic. At the same time more than half felt supported in caring for AIDS patients, e.g. "my family members support me in caring for AIDS patients" (59.1%). A minority of the nurses (less than 10%), however, would prefer to change their job because of AIDS (see Table 4).

Correlation of Level of Nurses' Knowledge, Attitude and Coping

The score of knowledge, attitude and coping was categorized into different levels (<60%=low; 60-80%=medium, >80%=high). The results revealed that the majority (83.8%) of the sample had a medium level (score 60 -80%) of knowledge about HIV/AIDS, while 4.5 % was in the categories of high (score > 80%) and 11% had low level of knowledge (score less than 60%).

The results revealed that about three-quarters of nurses in this study (75.8%) had a positive attitude toward caring for patients with HIV/AIDS (means + SD), while only 5.9% was in the categories of very negative attitude (means

Table 3: Attitudes towards caring of HIV and AIDS patients

Statements	*Rating*				
	SA	*A*	*U*	*D*	*SD*
1. HIV/AIDS patients should be blamed for their status.	3.4	8.7	5.3	25.2	57.3
2. Making any physical contact with AIDS patients without wearing gloves is a high risk of getting HIV.	26.1	20.7	2.0	30.0	21.2
3. Performing mouth-to-mouth resuscitation on a patient who is HIV positive is a high risk.	32.8	38.4	6.6	15.2	7.1
4. HIV/AIDS patients are responsible for their disease because of immoral and deviant behaviour.	9.3	20.1	16.0	23.7	30.9
5. Mechanical resuscitation is needed for a critically ill patient with cerebral malaria who is also HIV positive.	21.4	28.4	18.9	19.4	11.9
6. Address HIV/AIDS patients by their diagnosis.	4.0	3.0	3.5	11.1	78.3
7. AIDS patients should be nursed in their own separate wards and not mixed with other patients who are HIV negative.	8.4	7.9	0.5	20.7	62.6
8. AIDS patients should share eating utensils, bathrooms and toilet facilities with other family members.	44.7	33.5	1.9	8.7	11.2
9. AIDS is a disease resulting from self-destructive behaviour, so the patients deserve no sympathy.	5.9	3.0	5.0	21.8	64.4
10. If my friends know that I care for AIDS patients they will avoid contact with me.	4.9	13.3	10.3	31.5	39.9
11. If my family members know that I care for AIDS patients, they will avoid me.	4.9	12.7	12.3	31.4	38.7
12. I feel upset all the time that I have to care for AIDS patients.	7.1	12.6	8.6	36.9	34.8
13. If you were to choose between caring for AIDS patients and patients who are sero- negative, you will choose not to care for AIDS patients.	11.1	13.6	12.6	28.6	34.2
14. Caring for AIDS patients is more stressful than caring for other patients.	29.1	26.0	4.1	16.3	24.5
15. AIDS patients demand more of the nurse's attention.	15.8	11.3	14.0	33.3	25.7
16. If not necessary, I try to avoid every contact with AIDS patients.	11.1	15.8	6.3	36.3	30.5
17. AIDS patients always want to infect others by neglecting themselves.	27.7	31.7	14.9	14.9	10.9
18. Nurses need an allowance for caring for AIDS patients.	42.6	24.2	4.1	12.9	16.0
19. If AIDS patients do not request it, the nurse does not need to give any care.	8.4	8.4	8.4	32.1	42.6
20. AIDS patients must try to help themselves as much as possible.	38.2	44.7	3.0	7.0	7.0
21. Nurses should reduce some procedures with AIDS patients.	15.3	19.2	5.9	28.6	31.0
22. AIDS patients should receive services from other hospitals.	12.9	15.3	3.5	16.8	51.5

SA = Strongly Agree, A = Agree, U = Unsure, D = Disagree, and SD = Strongly Disagree

Table 4: Coping with caring of HIV and AIDS patients

Statements	*Rating*				
	SA	*A*	*U*	*D*	*SD*
1. Caring for AIDS patients is more demanding than caring for other patients.	37.6	30.7	3.9	19.5	8.3
2. I can tell my family members that I provide care for AIDS patients	22.5	43.6	5.9	11.8	15.2
3. My family members support me in caring for AIDS patients	20.7	38.4	17.2	15.3	8.4
4. If I have to care for AIDS patients every day I will resign	4.9	3.9	6.8	40.0	44.4
5. I want to change my job because of AIDS	4.0	3.5	2.0	41.6	49.0
6. If possible, I would change my work station to another section that will have low risk of contact with AIDS patients	6.0	12.0	5.0	47.0	30.0
7. After caring for HIV/AIDS patients I become worried that I might get HIV	9.3	17.6	7.4	41.2	24.5
8. I felt stressed after caring for AIDS patients	15.8	29.1	3.6	31.6	19.9
9. I must use all personal protective equipment to be able to care for AIDS patients	40.8	39.3	4.0	9.0	7.0
10. My work situation has become worse since the AIDS epidemic	24.6	28.1	6.9	23.6	16.7

SA = Strongly agree, A = Agree, U = Unsure, D = Disagree, and SD = Strongly Disagree

+ 2SD) and 18% had negative attitude (means + SD). For coping capabilities with stress and burnout from caring for patients with HIV/AIDS, about three-quarters of respondents had a medium level of coping capabilities in caring for patients with HIV/AIDS (score 50-75 %), while two out of five nurses had a low level of coping capabilities (score < 60%) and only 10.8% had a high level of coping capabilities (score < 75%).

Table 5 shows the relationship among knowledge, attitude, and coping, with age, sex, and work experiences of respondents. Knowledge had a positive low relationship with rank of position (r = .18), attitude towards caring for patients with HIV/AIDS had a positive low relationship with sex (r = .14), rank of position (r =.26) and coping (r =.31). Coping had a positive relationship with years of experience (r = .16).

Table 5: Correlation of level of nurses' knowledge, attitude and coping

Variable	*Knowledge*	*Attitude*	*Coping*
Sex	-.051	.142(*)	.033
Age	-.006	.052	.109
Rank of position	.181(*)	.259(*)	.113
Years of experience	.099	.117	.160(*)
Knowledge	1	.057	.131
Attitude	.057	1	.312(*)
Coping	.131	.312(*)	1

*Correlation is significant at the 0.05 level (2-tailed).

Table 6 found that female nurses (15.19) had a more positive attitude towards caring for patients with HIV/AIDS than male nurses (10.55) at P-value < .03. Nurses with more than 10 years' work experience had a more positive attitude towards caring for HIV/AIDS patients (15.88) than those with less experience (13.09) at P-value <.03. Also, nurses with more than 10 years' experience (5.59) were able to cope better when caring for HIV/AIDS patients than nurses with an experience of 1-10 years (4.13) at P-value < .02.

DISCUSSION

In this study, nurses were found to have inadequate knowledge about HIV and AIDS, which was also found among nurses in other studies (Aisien and Shobowale 2005; Chen et al. 2004; Delobelle et al. 2009; Ehlers 2006; Niven and Knussen 1999; Rondahl et al. 2003; Sadob et al. 2006). Possible reasons for the inadequate HIV knowledge in this study are that many nurses are aged and because of this, may not have received a curriculum with standardized HIV/AIDS information and may not have attended intensive HIV in-service programmes.

Although most nurses agreed with non-stigmatizing attitudes and caring of AIDS patients, a sizable minority had stigmatizing attitudes and non-caring behaviours for AIDS patients. Compromising and discriminatory attitudes towards patients with HIV and AIDS were also found in other studies (Aisien and Shobowale 2005; Delobelle et al. 2009; Ehlers 2006; Lehmann and Zulu 2005; Marchal et al. 2005; Reis et al. 2005; Robinson, 1998, Sadob et al. 2006; Zelnick and O'Donnell 2005). About a half of the nurses felt empathy for the patients, feared infection, were shocked and blamed the patient when they first saw an HIV/AIDS patient. This is similar to the study amongst nurses

Table 6: The mean comparison of knowledge, attitude and coping between two groups of nurses of different sex

Variables	*Socio-demographic variables*	*n*	*Mean*	*SD.*	*t-value*	*P-value*
Knowledge about HIV/AIDS	• Male	20	21.05	2.35	0.84	.41
	• Female	202	20.58	2.68		
	Assistant, enrolled nurse, midwife	158	20.56	2.78	-0.03	.98
	Professional nurse	54	20.57	2.36		
	• 1-10 years	84	20.38	3.09	-1.09	.28
	• > 10 years	135	20.78	22.84		
Attitude toward caring for HIV/AIDS patients	Male	20	10.55	10.52	-1.89	.03
	Female	202	15.19	9.11		
	• Assistant, enrolled nurse, midwife	158	14.94	9.73	0.71	.48
	• Professional nurse	54	13.89	8.55		
	• 1-10 years	84	13.09	9.86	-2.16	.03
	• > 10 years	135	15.88	8.89		
Coping with caring for HIV/AIDS patients	• Male	20	4.55	5.91	-0.49	.70
	• Female	202	5.06	4.35		
	Assistant, enrolled nurse, midwife	158	5.00	4.39	-0.07	.94
	Professional nurse	54	5.05	5.12		
	• 1-10 years	84	4.13	4.13	-2.16	.03
	• > 10 years	135	5.59	4.67		

and midwives in four Nigerian states, which showed disturbing findings where almost 40% of the subjects thought a person's appearance betrayed his or her HIV-positive status, and 20% felt that people living with HIV/AIDS had behaved immorally and deserved their fate. One factor fueling stigma among doctors and nurses is the fear of exposure to HIV (Frederickson and Kanabus 2004). The results of this study were further supported by other researchers where it was found that 74% of nurses judged the client to be personally responsible for contracting AIDS and 67% of them feared AIDS contagion from caring for AIDS clients (Wilson and Kniesl 1998).

More than half of the studied nurses agreed that caring for AIDS patients is more stressful than caring for other patients and that nurses need an (extra) allowance for caring for AIDS patients and to the extent that some would rather resign from their job. Increased work load and stress was also found among nurses in caring for AIDS patients in other studies (Adelekan et al. 1995; Delobelle et al. 2009, Niven and Knussen 1999; Lopez-Castillo et al. 1999; Mzolo 2004), and among Taiwanese nurses almost one in five seriously considered leaving nursing because of fear of contracting HIV/AIDS (Juan et al. 2004). More than half of the nurses believed that procedures with AIDS patients should be reduced. These findings were supported by the findings conducted in Western Reserve University School of Medicine in Cleveland where nurses exhibited the greatest caution when performing procedures with patients whose HIV status was unknown (Siminoff et al. 1998). These findings confirm that staff working with people with AIDS experienced psychological difficulties of the kind likely to respond to interventions aimed at improving their ability to cope with work-related stress (Catalan et al. 1996).

Professional nurses' medium level of HIV knowledge correlated with their high level of coping with HIV/AIDS patients and yet they showed negative attitudes towards caring for HIV/AIDS patients when compared to the positive attitudes demonstrated by assistant nurses, enrolled nurses and midwives. This is supported by the results of a previous study where high levels of HIV/AIDS knowledge were found among higher occupational categories (Walusimbi and Okonsky 2004). Nurses with more than 10 years' experience showed a high level of knowledge about HIV/AIDS, positive attitudes towards caring for HIV/AIDS patients and a higher level of coping capabilities such as family support and the use of protective equipment towards caring for HIV/AIDS patients than those nurses who had less experience in nursing. The results are confirmed by previous researchers (Chen et al. 2004; Delobelle et al. 2009; Mbanya et al. 2001; Walusimbi and Okonsky 2004).

CONCLUSION

The updates in HIV information, training, coaching and group discussions should be organized for female and male nurses. The expe-

rienced nurses could assist in counselling and giving guidance to the female and male nurses. Nurses should be counselled and given psychological support by for example supervisors. Staff rotation should be implemented to reduce or prevent burnout, together with interventions to improve family support to nurses and even to HIV/AIDS patients. An AIDS Care Centre should be built around Vhembe District as this could help to reduce the pressure and workload in hospitals. The suitable platform or forum should be organized for nurses to discuss about personal biases, preconceptions and their value judgments that can impede HIV/AIDS patients care.

Study Limitations

This study was based on a sample of nurses in a single hospital in Vhembe District in Limpopo Province, South Africa, which limits the generalisation of the results. Regardless, these findings raise concerns about nurses' knowledge, attitudes and coping in providing care to AIDS patients.

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