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Knowledge, perception and practice with regards to occupational risks of HIV/AIDS among nursing and midwifery students in Ibadan, Nigeria

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Summary

Nursing and midwifery students constitute a subgroup of health care providers exposed to occupational risk of HIV infection because of direct contact with blood and body fluids during clinical practice. The occupational risk faced by these students is of serious concern, given their limited experience and proficiency in nursing care skills. This study was carried out to provide important baseline data about knowledge, perception and practice with regards to occupational risks of HIV/AIDS among 359 nursing and 120 midwifery students (N = 479) in Ibadan, Nigeria. The study utilized both qualitative and quantitative methods to gather information from nursing and midwifery students. The result showed a poor knowledge of WHO recommended universal precaution for preventing HIV transmission among students in all the schools. Students of the schools of midwifery performed more highrisk occupational practices compared to those in the nursing schools, but received less supervision.

Keywords: HIV/AIDS, knowledge, perception, nursing, midwifery, students

Résumé

Les etudiants infirmiers et sage-femmes constituent un sousgroupe du personel de soins de sante expose aux risques d'infection au VIH a cause du contact direct avec le sang et les autres fluids an courant des pratiques cliniques. Le risqué du métier face a ces etudiants est d'une ampleur sericuse et inquiatante, etant donne leur experience limitee, competence et l' habilete en soins de sante .. Cette etude a ete faite dans le but de fournir des donnes importance de base a propos de la connaisance, perception et pratique en ce qui concerne les risques d'infection an SID/VIH parmi 359 etudiants infirmiers et 120 sage femmes (N =479) a Ibadan, Nigeria. Nous avons utilize les methods qualitative et quantitative pour rassembler les information des etudiants infirmiers et sage-femmes. Le resultat montre une connaissance mediocre des precautions universelles de l'OMS pour prevenir la transmission du VIH parmi les etudiants dans toutes les ecoles. Les etudiants des ecoles de sage-femmes pratiquent plus de risques eleves du métier compare a ceux dans les ecoles d'infirmerie, main recoivent moins de temps de supervision.

Introduction

Since the identification of Acquired Immune Deficiency Syndrome (AIDS) as a disease entity in 1981 [1,2] and its subsequent isolation, characterization in 1983 of what is presently known as the causative agent, the Human Immune Deficiency Virus (HIV) [3], series of studies have been conducted among various risk groups to improve understanding of risk behaviour and health education strategies that would be most adequate to meet the challenges this epidemic pose to most communities.

Acquired Immune Deficiency Syndrome (AIDS), at present, is an incurable disease that has special concern for the

Correspondence: Prof. O. Oladepo, Department of Health Promotion and Education, College of Medicine, University of Ibadan, Nigeria. health care provider. AIDS has continued to grow despite control measures. The current trend in HIV/AIDS in most communities especially in Africa presents additional burden on the already stretched health care system putting health care workers at additional risk. Nursing and midwifery students have been identified as a potential risk group among other health care providers [4], who are equally exposed to occupational risk of HIV because they come in direct contact with blood and body fluids during emergency situations while providing first aid services for accident victims or assisting in blood transfusion and performing other highrisk clinical procedures. A number of studies have been conducted involving nursing and midwifery students elsewhere to assess the extent to which knowledge and attitude may influence the care of patients. [5,6,7,8,9]. However, there is a dearth of information on nursing and midwifery students in Nigeria with respect to HIV/AIDS occupational risk of infection. The occupational risk faced by these students is of serious concern given their limited experience and proficiency in nursing care skills. This concern would further be intensified if the level of supervision provided during training were not adequate. These students may unwittingly be exposed to situations in which transmission of HIV would occur, such as in needlestick injury, percutaneous and mucous membrane exposure to blood and other body fluids from HIV infected patients.

In a number of studies conducted in Nigeria among health care providers, poor knowledge was blamed for the inappropriate attitude displayed towards patients with HIV/AIDS and the undue exposure to occupational hazards of HIV transmission observed, especially in procedures involving blood and body fluids [10,11]. For example Odujinrin and Adegoke (1995) acknowledged that Nigerian health care workers, like their counterparts elsewhere, are subjected to the risk of infection when caring for HIV-positive patients, especially within the context of a depressed economy and poor knowledge about AIDS and its preventive measures, thus, many preventive measures are compromised leading to unnecessary exposure to increased risk of HIV occupational infection. There has been continued expression of concern among health care providers over the potential risk they face of becoming infected with HIV through occupational transmission [11].

As health care providers in training, nursing and midwifery students are required to perform skills which may expose them to occupational risk of HIV infection such as giving injections to patients, dressing wounds in clinical or emergency settings, assisting in delivery of babies and handling various kinds of body fluids. This apprentice-type programme requires that students perform rudimentary skills under supervision of more experienced professionals. They and are progressively allowed to perform more complex procedures as they become more proficient. The practice of patient care in the context of possible risk of occupational HIV transmission provides the basis for an implication for nursing and midwifery training since they constitute the future work force in the health care industry. However, while they are in training, there must be a way to assure biosafety. Therefore it is the aim of this study to identify the level of knowledge about HIV/AIDS among nursing and midwifery students, their perception of occupational risk of HIV infections and clinical practices with respect to occupational risk of HIV/AIDS, which will be diagnostic in nature. Information obtained should provide a clearer understanding of the risk these students are exposed to and what strategies may be developed to address gaps observed in knowledge and clinical practice.

Method for data collection

This study was descriptive in nature and utilized qualitative and quantitative methods to gather information from 359 nursing and 120 midwifery students in Ibadan, Nigeria. The study was conducted in two nursing and three midwifery schools (involving all students) located in Ibadan, a metropolitan urban city of multiple ethnic expression, with an estimated population of 1,829, 187 [12]. Data regarding knowledge about HIV/AIDS, perception of occupational risk of HIV infection, supervision and occupational risk practices were collected using pretested semi-structured questionnaire which was developed from information obtained following Focus Group Discussion held with students. Respondents at the five schools located in Ibadan metropolis, were asked to complete the questionnaire without conferring with colleagues. It was emphasized that the questionnaire was not a class test or examination, even though the condition simulated such, but rather an information gathering exercise which would provide insight into individual knowledge levels and perceptions of occupational risk of HIV and clinical practice among nursing and midwifery students. The questionnaires were completed by respondents between a period of 45 minutes and one hour. The period for data collection lasted two weeks.

Results

Demographic characteristics

The results showed that most respondents were females 466 (97.3%). Respondents' ages ranged between 17 and 37 years (mean of 23.1 years) for nursing and 21 to 36 years (mean of 25.8 years) for midwifery students. Among surveyed respondents were 359 nursing students and 120 midwifery. The nursing students in the third year accounted for 21.9%; second year 21.1% first year 31.9% and the midwifery students 25.1%.

Knowledge about HIV/AIDS

The results presented (same) here considers prominent knowledge variables which may have some important bearing on perception of occupational risks of HIV infection and occupational practices. Considering mode of transmission of HIV, 348 (96.9%) nursing and 120 (100%) midwifery students were aware that unprotected sexual intercourse with a infected person would facilitate transmission of HIV. Similarly, nursing 341 (95.0%) and midwifery 117 (97.5%) students demonstrated knowledge that transfusion of unscreened and infected blood would facilitate transmission of the virus. However, knowledge of other means of transmission for both groups were low showing that only 5 (1.4%) nursing and 2 (1.7%) midwifery students are aware that breastfeeding by infected mothers can facilitate transmission of HIV to their infants (Table 1).

Furthermore, regarding WHO recommended precaution to prevent HIV transmission in clinical setting, 181 (50.4%) nursing and 95 (79.2%) midwifery students

Table 1: Knowledge about HIV/AIDS of nursing and midwifery students.

Knowledge variables	Students Nusing n=359 n(%)	Midwifery n=120 n(%)	
Causative agent of AIDS	344 (95.8%)	110/00 0	
General awareness	347 (96.7%)	119(99.2%)	
Mode of transmission			
Unprotected sex	348 (96.7%)	120/100 0	
Transfusion (unscreened blo	od) 341 (95.0%)	-20(100.0)	
Blood contact with mucous			
membrane	117 (32.6%)	41(34 2%)	
Use of unsterilized		(0 +.2/0)	
instruments	276 (76.9%)	95(79.1%)	
Organ transplant	4 (1.1%)	1(1.7%)	
Breast-feeding by infected		,,	
mother universal	5(1.4%)	2(1.7%)	
Universal precaution to			
prevent HIV infection in			
Clinical setting			
Hand wash	181 (50.4%)	95(79.2%)	
Use of gloves	128 (35.7%)	75(62.5%)	
Care in handling needles			
and not recapping	54 (15.0%)	33(27.5%)	
Use of protective mask	24 (6.7%)	9(7.5%)	
Use of gowns	12 (3.3%)	0(0.0%)	

*Mean on a 30-point scale for nursing students 17.5 ± 0.42 P<0.00001 and midwifery students 19.6±0.48 P<0.00001

identified hand washing after contact with patients as a measure to prevent occupational infection. Likewise, 128 (35.7%) nursing and 75 (62.5%) midwifery students were aware that gloves should be used for every procedure with potential risk of direct contact with blood or body fluids from patients. Another disturbing observation from this study is the level of knowledge about care in handling needles and sharp objects and recapping of needles after giving injections as only 15% of nursing and 27.5% midwifery students recognised that needles should not be recapped after injection (Table 1). Exploring the various dimensions of knowledge variables, with respect to HIV/ AIDS, this study showed that on a 30 point scale measuring knowledge about HIV/AIDS, nursing students scored a mean of 17.4 with a standard deviation of 4.1, while midwifery students scored a mean of 19.6 with a standard deviation of 2.7. Specifically, it was observed that knowledge of WHO recommended universal precaution to prevent HIV transmission in clinical setting were low for both groups, rated on a 5 point scale, scoring a mean of 1.1 (SD = 1.1) for nursing and 1.7 (SD)= 0.9) midwifery students. (Table 2).

Perception of Occupational Risk of HIV Infection

In respect of perceived susceptibility to occupational risk of HIV infection in clinical practice while in training measured on a 45 point scale, midwifery students with a mean score of 35.2 (SD = 10.9) and nursing students 31.0 (SD 14.9) perceived themselves at risk of HIV/AIDS (see Table 3).

For example, when asked about their perceived susceptibility to HIV infection, 309 (86%) nursing and 117 (97.5%) midwifery students were of the opinion that health

Table 2: Summary of descriptive statistics for variables of knowledge about HIV/AIDS

P-value	midwifery	oulev-q	Aursing Single Strang	XBM Inioq	Knowledge variable
10000.0>	(2.2)9.61 10	0000.0> ((1,4)£.71	30	HIV/AIDS Knowledge about
† 0.0	(16.0)7.1	£1.0	(1.1)1.1	s	Knowledge of universal precaution
					to prevent HIV in
				v	guittes lasinile
L000.0	(26.0)2.5	100.0	(0.1)1.5	8	Mode of transmission
7£0.0	(8.1)2.8	1000.0	(2.2)4.T	01	procedure
600.0	(9.0)£.2	10.0	(8.0)2.2	3	Symptomatology
					Knowledge of cause,
£000.0>	(6.0)8.E	2000.0	(6.0)9.£	t	awareness and cure
					SULA 10

Table 3: Summary of descriptive statistics for variables of occupational risk of HIV/AIDS

X (SD) x (SD)	Vursing n=359 (D2) x	tnio9 xsM	Perception
(6.01) 2.25	(6.41)0.15	54	Perceived Perceived
(4.2) 9.8	(2.E) 7.7	01	seriousness
(1.4) 2.11	(4.2) 1.01	۶ı	Perceived Perceived
(8.2) 9.51	(1.2) 2.11	\$1	Perceived Penefits

workers are at high risk and further, 287 (79.9%) nursing and 107 (89.2%) midwifery students viewed themselves also at high risk of occupational HIV infection. (see Table 4). The students perceived the disease as so serious that 286 (79.7%) nursing and 104 (86.7%) midwifery students were of the view that it is one of the most deadly diseases without cure known.

to such samples. (see Table 5). and 104 (29%) nursing students reported having been exposed or body fluids during clinical practice, 79 (65.8%) midwifery the other with regards to accidental splashes from blood samples having recapped needles after giving injection at one time or 213 (59.32) nursing and 70 (5.82) (15 midwifery students reported nursing students claimed sustaining needlestick injuries, while to possible HIV infection, 57 (47.5%) midwifery and 99 (27.6%) 5). In occupational risk practices which exposed respondents oldeT oos) (8.6 = neom) students violiwbim neht (0.0=neom) clinical procedures, nursing students received more supervision a 12-point scale for supervision while carrying out high risk wound dressing, etc, than midwifery students. For example, on procedures with high risk of HIV infection such as injection, students consistently received supervision for various clinical In this study, it was found that a higher percentage of nursing Clinical supervision and occupational risk practices.

In respect of occupational risk practices measured on a differential scale of 41points for nursing and 65points for midwifery students, respondents from the midwifery schools performed more occupational risk practices mean (score = 32.5) compared with those from the schools of nursing (mean score=12) see Table 5.

Table 4: Summary distribution of nursing and midwifery students who expressed appropriate responses for perception of occupational risk of HIV infection while in training

Midwifery n = 120 n(%)	e25 = n gniz (%) n	Perception variable Nur
(%5'.26) 211	(0.98) 60£	Perceived susceptibility health worker are at high
(6.97) 782	(2.78) 701	risk Nursing and midwifery students are also at high
(2 98) 101	(2 62) 980	risk Perceived seriousness
((disease HIV/AIDS has not
(5.29) 111	(£.28) 862	known cure
(2.68) 701	(2.77) 772	Perceived self-efficacy
		infection if gloves are used
(8 3)/ 62		Certain to avoid accidental
(8.00) 6/	(0.00) 212	need/stick injury if needles
(5.79) 71	(£.28) 662	Perceived benefits use
(8 56) 511	(28) 100	of latex gloves
	(70) + (7	needles and blood

Table 5: Summary of descriptive statistics for clinical super vision and occupational risk practices of nursing and midwifery students

19 7 -1	ພຣອເມ			mean			-
	9.0	3.8	21	1.1	9.9	21	Clinical supervision
	8.71	32.5	\$9	2.6	0.21	14	practices Occupational risk

Discussion

This study on level of knowledge, perception and practice with regards to occopational risks of HIV/AIDS among nursing and midwifery students in Ibadan, is of immense value considering that hitherto no such study has been published. In this case AIDS is a serious disease that has special concern for health care providers because they are subjected professionally to an being cared for. As long as various health care providers, including nursing and midwifery students, the risk of becoming frontline care providers for AIDS patients, the risk of becoming exposed to HIV while performing clinical procedures exists.

The observed levels of knowledge about HIV/AIDS among nutsing and midwifery students, though moderate, were unacceptably inadequate for students in a medical science programme. The study however, revealed a disturbing low level of knowledge regarding WHO recommended universal precaution for preventing HIV transmission in the clinical setting among students in all the schools. This observation is rather

Thus, a need for these vulnerable students to be assured biosafety

in the clinical setting cannot be overemphasized.

surprising considering that these students would naturally be expected to have abundant and more current information through literatures to compliment curriculum contents, but this is not so. This finding, regarding knowledge expected of health personnel, is similar to the observation of Oladepo and Brieger (1994) who reported an unsatisfactory level of knowledge, attitude and personal behaviour among medical science students surveyed with other university students [13]. Similarly, reports emerging from a study conducted in Sokoto, Nigeria expressed disappointment that none of the health workers surveyed mentioned any occupational source of HIV infection. This would seem to reflect certain deficiencies in the training curriculum with regards to knowledge about HIV/AIDS, which is urgently needed to be addressed. Again, previous studies have blamed poor knowledge about HIV/AIDS for certain observed highrisk exposures and inadequate application of protective procedures in clinical settings by health care providers [9,10,14]. Consequently, providing adequate information to nursing and midwifery students as envisaged would naturally facilitate risk reduction practices, especially knowledge about universal precaution protocol introduced by WHO.

The fairly high perception of occupational risk of HIV infection observed among the students which failed to generate the appropriate clinical practice may probably be due to the combined effects of the disappointingly low knowledge of universal precaution and inadequate supervision received by both midwifery and nursing students. It would appear on the whole that the observed occupational risk practices could be reduced if knowledge of WHO universal precaution and clinical supervision received are improved tremendously. It is evident from this study that a high proportion of students are exposed to needle-stick injury and risk practice of recapping injection needles after use. Even though the clinical risk of occupational HIV is low [15], nevertheless, there is documented evidence of cases of sero-conversion resulting from occupational exposure from needle stick injuries.

In a focus group discussion conducted with midwifery students prior to developing the survey instrument, the students claimed that most often they were allowed to perform a large proportion of the clinical procedures unsupervised because they we regarded as having acquired sufficient experience from previous training. This presumption invariable places the students at the risk of unnecessary occupational exposure to HIV infection.

Implication for Nursing and Midwifery Training

As health care providers in training, nursing and midwifery students must perform skills which may expose them to occupational risk of HIV infection such as giving injections to patients, wound dressing in clinical or emergency settings, assisting in delivery of babies, handling various kinds of body fluids, etc. This apprentice-type training requires that students perform rudimentary skills under supervision of more experienced professionals and they are encouraged to perform more complex procedures as they become more proficient. The practice of patient care, in the context of possible risk of occupational HIV transmission, provides the basis for an implication for nursing and midwifery training because these students constitute the future work force in the health care industry. In this study it has been recognized that for nurses to be adequately equipped to meet the challenges of the AIDS epidemics, educational programmes for nurses must be properly designed to meet the needs of current health workers. One study

observed that an educational programme involving only one or limited training session on AIDS organised for nursing students would not bring significant change in their knowledge about HIV/AIDS and therefore suggests that such programmes should be organized at regular intervals from the onset of training to run throughout the programme [16]. Emerging from the foregoing considerations and the results of this study is an implication for modifying nursing education programme to integrate key issues involved in knowledge about HIV/AIDS. perception of occupational risk of HIV infection and attitudes in order to generate greater impact on clinical practice which would produce desired results.

Schools of nursing and midwifery should develop a curriculum which ensures protection of the students in the clinical setting through adequate supervision by competent professional clinicians. The HIV/AIDS content of the microbiology, communicable diseases and clinical nursing courses, which hitherto have been superficially treated, should be adequately integrated and suitably expressed in the curriculum. For routine procedures, clinical instructors should insist on strict compliance with guidelines stipulated in the WHO recommended universal precaution to prevent HIV transmission in the clinical setting in order to ensure safe practice.

Conclusion

This study on level of knowledge, perception and practice with regard to occupational risk of HIV/AIDS among nursing and midwifery students in Ibadan, Nigeria is of immense value considering that this category of health care providers continues to remain potentially the future workforce in providing nursing care to patients In view of this, the issue of biosafety for trainee nurse-practitioners is critical as the occupational risk faced by these students is of serious concern. However, data suggest a poor knowledge of WHO recommended universal precaution for preventing HIV transmission among students in all the schools. Moreover, students of the schools of midwifery performed more high-risk occupational practices compared to those in the nursing schools, but received less supervision. Based on the findings from this study, knowledge of WHO universal precaution should be improved for both nursing and midwifery students while more supervision should be given during clinical practice.

Such changes needed to achieve an improved level of professional competence in health care require support from policy makers within the Nursing and Midwifery Council of Nigeria, where effective changes can be made in the curriculum for training and midwives integrating HIV/AIDS issues discussed here.

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