

Original Research Article

Nurses' knowledge and attitude to the care of HIV/AIDS patients in South East, Nigeria

Pat U. Okpala^{1*}, Rebecca Uwak¹, Ada C. Nwaneri¹, Jane-lovena Onyiaapat¹,
Anthonia Emesowum², Eunice O.Osuala³, Florence O. Adeyemo⁴

¹Department of Nursing Sciences, University of Nigeria, Enugu Campus, Enugu, Nigeria

²Department Nursing, Imo State University, Orlu Campus, Owerri, Nigeria

³Department of Nursing Science, Nnamdi Azikiwe University, Nnewi Campus, Awka, Nigeria

⁴Department of Nursing, College of Health Sciences, Ladoke Akintola University of Technology, Osogbo, Nigeria

Received: 09 October 2016

Accepted: 04 November 2016

*Correspondence:

Dr. Pat U. Okpala,

E-mail: pat.okpala@unn.edu.ng

Copyright: © the author(s), publisher and licensee Medip Academy. This is an open-access article distributed under the terms of the Creative Commons Attribution Non-Commercial License, which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

ABSTRACT

Background: HIV/AIDS pandemic has brought huge demands on the healthcare workforce worldwide. Nurses play a critical role in caring for persons living with HIV/AIDS (PLWHA). Inadequate care and discrimination due to negative attitudes of nurses caring for persons living with HIV/AIDS will not only affect the patients, but will adversely affect the fight to halt the pandemic. The objective of this study was to determine nurses' knowledge and attitude to the care of HIV/AIDS patients in South East, Nigeria.

Methods: Descriptive survey design, with the aid of five-point Likert questionnaire administered on 240 nurses caring for PLWHA in University of Nigeria Teaching Hospital Enugu, Nigeria was used.

Results: Majority of the respondents had good knowledge of HIV/AIDS. There were significant relationships between the age ($P < 0.05$), marital status ($P < 0.05$), professional cadre of the respondents ($P < 0.05$) and their level of knowledge. 227 (94.6%) of the respondents had positive attitude towards the care of PLWHA. Factors that negatively influenced nurses' attitude in caring for PLWHA include fear of contagion 56 (82.4%), social stigma 10 (14.7%), culture/religion 6 (8.8%). There were significant relationships between the professional cadre of nurses ($P < 0.05$), knowledge about HIV/AIDS ($P < 0.05$) and their attitude towards the care of HIV/AIDS patients. However, there were no significant relationships between the nurses' marital status ($P > 0.05$), religion, ($P > 0.05$) and their attitude towards the care of HIV/AIDS patients.

Conclusions: The study suggested the need for more in-service trainings on HIV/AIDS for nurses to improve nurses' knowledge and positive attitude towards the care of PLWHA.

Keywords: Attitude, HIV/AIDS, Knowledge, Nigeria, Nurse, PLWHA

INTRODUCTION

The Human Immunodeficiency Virus (HIV)/Acquired Immunodeficiency Syndrome (AIDS) epidemic have become one of the most important public health problems

in recent years, with Sub Saharan Africa carrying the heaviest burden of the epidemic in terms of new infections.¹ The emergence of the Acquired Immunodeficiency Syndrome on the global scene has been a major source of concern worldwide.² Since its

discovery in 1981, HIV has spread to almost every country in the world. Sub-Saharan Africa has about 25.6 (23.1–28.5) million people living with HIV in 2015.³

Nigeria accounts for about eight percent of the global burden of HIV/AIDS.⁴ Efforts in combating the scourge of HIV/AIDS in Nigeria has reduced the 2013 national HIV prevalence to 3.4% as compared to 3.6% reported in 2007.⁵ However, as at 2015, HIV population in Nigeria was estimated at 3.5million, with about 180,000 deaths from AIDS.⁶

Human Immunodeficiency Virus (HIV) is usually found in the body fluids like blood, semen, vaginal fluid and breast milk of infected persons, hence it can be transferred from one infected person to another, mostly from a mother to unborn child, through sexual intercourse and sharing of unsterilized instruments like knives and syringe which had once been used by infected persons.^{7,8}

Staff caring for PLWHA need to acquire new attitudes, knowledge and skill as they confront the multi-disciplinary problems of AIDS care and prevention.⁹ This is much as it has been reported that some nurses have reported in the past to experience nightmares and increased anxiety levels while nursing HIV/AIDS patients, while others have been known to request for transfer or even leave the profession.^{10,11}

An important issue that has emerged is how nurses adapt to these challenges in order to care for PLWHA.¹² Similarly, the attitudes of Nurses towards these patients have long been under scrutiny since has the potential to affect the quality of care rendered and possibly quality of life of these patients.¹³

Attitude can be positive or negative and can affect the behaviour of an individual. Previously in Nigeria, HIV/AIDS has been treated by some as a moral rather than a medical issue.¹⁴ The manner in which the disease is been described and classified reflects the same sociocultural prejudices that made the disease shameful in the first place.¹⁵ Stigma spreads to the whole person, debases the person, leading to discrimination and utter rejection, which ultimately will result in reduced opportunities.¹⁶ Attitude is gained through experience and contact with the world around us.¹⁷ It may be changed by new experiences and information. Extensive stigmatizing attitudes and discrimination among the general population have been found to cut across countries of the globe as reported by various surveys.^{18,19}

Unfortunately, various studies have also identified among nurses same compromising and discriminatory attitudes towards patients with HIV and AIDS.^{12,20,21}

Similarly, studies from several countries identified the various factors affecting stigmatized and discriminatory attitudes toward PLWHA among Health Care Workers to include level of irrational fear of HIV transmission, level

of education, gender, stage of the disease, high-risk taking behaviour, individuals related to stigmatized identities, sources of HIV infection, relationship with an infected person, type of hospital, ethnicity and urban-rural locality.^{22,23}

To date, with the increasing knowledge of modes of transmission and infection-control measures, guidelines have now been established to ensure that staff and patients are adequately protected within the last decade. Unfortunately, it is believed that much fear and ignorance still exist.²¹ This paper seeks to verify this in Nigeria.

The assessment of knowledge and attitude of nurses toward the care of HIV/AIDS patients in University Teaching Hospital (UNTH), Enugu; one of the major tertiary health facilities in Nigeria that also function as an AIDS screening centre, is thus vital. The study was thus, conducted to empirically ascertain Nurses' knowledge and attitude to the care of HIV/AIDS patients in South East Nigeria.

METHODS

This is a descriptive survey of Nurse's knowledge and attitudes to the care of HIV/AIDS in UNTH, Enugu. A sample size of 240 nurses working in UNTH Enugu was used for the study. This was calculated using Taro Yamane statistical formula.²⁴ Ethical approval was obtained from the ethical committee of the University of Nigeria Teaching Hospital Enugu. Instrument for data collection was researcher designed questionnaire. The questionnaire consisted of a five-point Likert scale, with close ended questions. Data was collected with the assistance of trained research assistants. The Questionnaires were shared and collected immediately and this facilitated 100% return rate. Data generated from the instrument was analysed with the aid of Statistical Package for Social Science Version 19.0.²⁵

For the attitudinal scale, nine terms were selected from the original scale and their scores were summed up in such a way that a mean score of 3 and above reflected a more positive attitude (non-discriminatory attitude towards the care of PLWHA) while a mean score below 3 reflected a negative (discriminatory attitude towards the care of PLWHA).

Chi-square (χ^2) tests were used to examine statistical differences in the distribution of the variables.

RESULTS

Demographic profile of participants

Most of the respondents were female 213(88.8%), between 30 to 49 years old (50.4%), and married (59.6%). Regarding professional cadre, 55 (22.9%) were nursing officers, 51(21.3%) principal nursing officers,

while least 25(10.4%) were the chief nursing officers (Table 1).

Table 1: Demographic profile of respondents (N=240).

Demographic profile	N (%)	
Age	20-29	121 (50.4)
	30-39	90 (37.5)
	40-49	24 (10.0)
	50 and above	5 (2.1)
Gender	Male	27 (11.3)
	Female	213 (88.8)
Marital status	Single	97 (40.4)
	Married	143 (59.6)
Religion (Denomination)	Anglican	99 (41.3)
	Pentecostal	66 (27.5)
	Catholic	64 (26.7)
	Others specify	11 (4.6)
Professional cadre	Chief Nursing Officer(CNO)	25 (10.4)
	Principal Nursing Officer(PNO)	29 (12.1)
	Senior Nursing Officer(SNO)	51 (21.3)
	Nursing Officer 1(NO1)	43 (17.9)
	Nursing Officer 11(NO11)	37 (15.4)
	Nursing Officer(NO)	55 (22.9)

Knowledge of HIV/AIDS

Majority of the respondents 222 (92.5) knew that HIV/AIDS stands for Human immunodeficiency virus and Acquired Immunodeficiency syndrome and 225 (93.8%) of the respondents strongly agreed that AIDS is caused by a virus, 188 (78.3%) of the respondents strongly agreed that HIV is transmitted through unprotected sexual intercourse. About three-quarters of the respondents strongly agreed that HIV is transmitted through blood transfusion while of the respondents strongly agreed that HIV is transmitted through mother to child 185 (77.1%) and 173 (72.1%) respectively.

About two-thirds of the respondents strongly agreed that HIV is prevented through prevention of mother-to-child transmission and that HIV destroys the CD4 cell of the body's immune system 152 (63.3%) and 156 (65.0%) respectively. Similarly, 128 (53.3%) strongly agreed that antiretroviral drugs do not cure HIV/AIDS but treat it (Table 2). Respondents' overall knowledge of HIV/AIDS was good.

Relationship between respondents' knowledge and demographic profile of participants

There were significant relationships between the age ($P=0.001<0.05$), marital status ($P=0.00<0.05$) and professional cadre ($P=0.00<0.05$) of the respondents and their level of knowledge (Table 3).

Table 2: Nurses' knowledge of HIV/AIDS.

Variable	SA (%)	A (%)	U (%)	D (%)	SD (%)	Mean	Std. D
HIV/AIDS stands for human immunodeficiency virus and acquired immunodeficiency syndrome	222 (92.5)	17 (7.1)	1 (4.6)			4.92	0.29
AIDS is caused by a virus	225 (93.8)	14 (5.8)	1 (0.4)			4.93	0.27
HIV is transmitted through blood transfusion	185 (77.1)	33 (13.8)	1 (0.4)	11 (4.6)	10 (4.2)	4.55	1.02
Mother to child	173 (72.1)	42 (17.5)	6 (2.5)	16 (6.7)	3 (1.3)	4.53	0.92
Sexual intercourse without using a condom	188 (78.3)	43 (17.9)	7 (2.9)	2 (0.8)		4.74	0.55
Not transmitted through mosquito bite	150 (62.5)	39 (16.3)	4 (1.7)	11 (4.6)	36 (15.0)	4.07	1.48
Not transmitted through shaking hands with an infected person	138 (57.5)	27 (11.3)	2 (0.8)	33 (13.8)	40 (16.8)	3.79	1.61
Prevented by: reducing unnecessary blood transfusions and injections	146 (60.8)	58 (24.2)	15 (6.3)	18 (7.5)	3 (1.3)	4.36	0.98
Prevention of mother-to-child transmission	152 (63.3)	72 (30.0)	10 (4.2)	6 (2.5)		4.54	0.72
Using a condom during sexual intercourse	120 (50.0)	60 (25.0)	32 (13.3)	18 (7.5)	10 (4.2)	4.09	1.14
HIV destroys the CD4 cell of the body's immune system	156 (65.0)	62 (25.8)	17 (7.1)	5 (2.1)		4.54	0.72
Anti-Retroviral drugs do not cure HIV/AIDS but treat it	128 (53.3)	62 (25.8)	17 (7.1)	18(7.5)	15(6.3)	4.13	1.21

SA: strongly agree, A : agree, U : undecided, D: disagree, SD: strongly disagree, Std D: standard deviation.

Table 3: Relationship between the level of nurses' knowledge and their demographic profile.

Demographic profile	Knowledge		X ² (P value)
	Good	Poor	
Age	20-29	120	1
	30-39	78	12
	40-49	24	0
	50 & above	5	0
Marital status	Single	85	12
	Married	142	1
Professional cadre	Chief Nursing Officer (CNO)	24	1
	Principal Nursing Officer (PNO)	29	0
	Senior Nursing Officer (SNO)	51	0
	Nursing Officer 1 (NO1)	43	0
	Nursing Officer 11 (NO11)	37	0
	Nursing Officer (NO)	43	12
Attitude	Positive	197	30
	Negative	0	13

Attitudes of Respondents to People Living with HIV/AIDS

The majority 86 (35.8%) of the participants agreed that they are comfortable caring for PLWHA while 148 (61.7%) of the respondents strongly agreed that the PLWHA deserve not to die. . Similarly, 133 (55.4%) of the respondents strongly agreed that PLWHA should

receive care just like other patients while 74 (30.8%) agreed that the care for PLWHA should not be optional. However 116 (48.3) agreed that they hate to work in any ward that has HIV/AIDS patients. Seven (7) of the nine items on the attitudinal scale had mean scores of 3 and above reflecting a more positive attitude towards the care of PLWHA (Table 4). Cumulatively, majority 227 (94.6%) of the respondents had positive attitude towards the care of PLWHA (Table 4).

Table 4: Nurses' attitudes towards the care of HIV/AIDS patients.

Variable	SA (%)	A (%)	U (%)	D (%)	SD (%)	Mean	Std.D
Comfortable caring for HIV/AIDS patients	57 (23.8)	86 (35.8)	25 (10.4)	50 (20.8)	22 (9.2)	3.44	1.30
Care for HIV/AIDS patients should not be optional	60 (25.0)	74 (30.8)	24 (10.0)	63 (26.3)	19 (7.9)	3.39	1.39
Will provide care for HIV/AIDS patients if given a choice	68 (28.3)	94 (39.2)	18 (7.5)	42 (17.5)	18 (7.5)	3.63	1.28
Feel empathetic towards PLWHA	101 (42.1)	93 (38.8)	17 (7.1)	20 (8.3)	9 (3.8)	4.07	1.08
People with HIV/AIDS deserve not to die	148 (61.7)	68 (28.3)	11 (4.6)	3 (1.3)	10 (4.2)	4.42	0.96
People with HIV/AIDS should not be nursed in a separate ward	41 (17.1)	73 (30.4)	11 (4.6)	65 (27.1)	50 (20.8)	2.96	1.45
HIV/AIDS patients should receive care just like other patients	133 (55.4)	79 (32.9)	6 (2.5)	16 (6.7)	6 (2.5)	4.32	0.99
Can work in any ward that has HIV/AIDS patients	13 (5.4)	29 (12.1)	22 (9.2)	116 (48.3)	60 (25.0)	3.75	1.12
Care for the patients should be for nurses who are specially trained to render such care	78 (32.5)	70 (29.2)	28 (11.7)	40 (16.7)	24 (10.0)	2.43	1.35
Attitude	N (%)						
Positive	227 (94.6)						
Negative	13 (5.4)						
Total	240 (100)						

SA: strongly agree, A : agree, U : undecided, D: disagree, SD: strongly disagree, Std D: standard deviation.

Factors affecting attitude of nurses towards the care of HIV/AIDS patients

The majority 172 (71.7%) of the respondents would like to nurse HIV/AIDS patients. Factors that negatively influence nurses' attitude in caring for PLWHA included fear of contracting the disease 56 (82.4%), social stigma 10 (14.7%) and discrimination attached to HIV/AIDS patients, culture/religion 6 (8.8%), fear of losing one's job if one contract HIV/AIDS and lack of knowledge 6(8.8%) (Table 5).

Relationship between nurses' attitude towards the care of HIV/AIDS patients and their demographic profile

There was a significant relationship between the professional cadre of nurses and their attitude towards the care of HIV/AIDS patients ($P=0.018<0.05$).

However, there were no significant relationships between the marital status of nurses ($P=0.883>0.05$), religion, ($P=0.431>0.05$) and their attitude towards the care of HIV/AIDS patients (Table 6).

Relationship between knowledge and attitude of respondents towards the care of HIV/AIDS patients

There was a significant relationship between the attitude of nurses and their level of knowledge about HIV/AIDS ($P=0.000<0.05$) (Table 3).

Table 5: Factors that influence respondents' attitude towards the care of PLWHA (N=240).

Variable	n (%)
Would you like to nurse HIV/AIDS patients	172 (71.1)
Fear of contracting the disease	56 (82.4)
Social stigma and discrimination attached to HIV/AIDS patients	10 (14.7)
Fatal outcome of the disease	13 (19.1)
Fear of losing one's job if one contact HIV/AIDS	9 (13.2)
Culture and religion	6 (8.8)
Lack of Knowledge	6 (8.8)

Table 6: The relationship between nurses' attitude towards the care of HIV/AIDS patients and their demographic profile (N=240).

Demographic profile		Attitude		X ² (P-value)
		Positive	Negative	
Marital status	Single	92	5	0.02 (0.88)
	Married	135	8	
Religion	Anglican	91	8	2.76 (0.43)
	Pentecostal	63	3	
	Catholic	62	2	
	Others	11	0	
Professional cadre	Chief Nursing Officer(CNO)	23	2	13.63 (0.02)
	Principal Nursing Officer (PNO)	29	0	
	Senior Nursing Officer (SNO)	48	3	
	Nursing Officer 1(NO1)	41	2	
	Nursing Officer 11(NO11)	31	6	
	Nursing Officer(NO)	55	0	

DISCUSSION

Majority of the respondents had good knowledge of HIV/AIDS, which is similar to the findings of previous studies done among health care workers in Nigeria.^{10,14, 20} Though this contradicts the findings of a South African study which found poor knowledge of HIV/AIDS among Nurses.¹² This may be as result of various in-service trainings on HIV/AIDS that are being carried out in urban areas of Nigeria recently thereby increasing awareness about HIV/AIDS and the difference in location since the latter study was done in a rural area of South Africa.

Regarding relationship between respondents' knowledge of HIV/AIDS and their demographic profile of participants; there were significant relationships between the age, marital status and professional cadre of the respondents and their level of knowledge. This is in agreement with previous studies where high levels of HIV/AIDS knowledge were found among higher occupational categories.^{9,26,27} This can be explained the fact that knowledge and attitudes are gained through experience and contact with the world around us.

Study findings revealed significant positive relationship between nurses' knowledge and their attitude toward

PLWHA. In the same context, Meisenhelder found that higher education for nurses was correlated with less fear of HIV/AIDS contagion while Highriter, et al reported that favourable HIV/AIDS attitudes were correlated with higher HIV/AIDS knowledge.^{28,29} This further supported the need for in-service training and continuing medical education.

227 (94.6%) of the respondents had positive attitude towards the care of PLWHA which agrees with the findings of a similar study done in South Africa which found that three-quarters of nurses in the study (75.8%) had a positive attitude toward caring for patients with HIV/AIDS.¹²

However, this is at variance with various studies done in Nigeria which found that there is high prevalence of negative, stigmatizing and discriminatory attitudes to the care of PLWHA among health care workers in Nigeria including nurses.^{10,20,21,30} The difference may be attributed to various in-service trainings on HIV/AIDS and awareness campaigns that are being carried out in Nigeria recently, which has been shown to positively change attitudes and perceptions of people towards HIV disease.³¹ This may represent a new evidence suggesting recent change in the attitude of Nigerian Nurses towards the care of PLWHA.

In this study, fear of contracting the disease, social stigma, culture/religion, fear of losing one's job if one contract HIV/AIDS and lack of knowledge were identified as potential factors that negatively influence nurses' attitude in caring for PLWHA. This confirms the findings of previous studies and represent areas where further intervention strategies should be channelled.^{9,22,23,32} Interestingly, some respondents identified fear of losing one's job if one contract HIV/AIDS, this buttresses the call to make working environment safe and ensure job security for the staff taking care of PLWHA.³⁰

There was a significant relationship between the professional cadre of nurses and their attitude towards the care of HIV/AIDS patients. This is similar to the findings of A South African study done among nurses caring for HIV/AIDS patients at public hospitals.²⁷ As individuals develop, they acquire a set of beliefs and attitudes that influence how they interact. Hence, the attitude improved as the experience/career of nurses increased.

However, there were no significant relationships between the nurses' marital status, religion and their attitude towards the care of HIV/AIDS patients'. These partly agree with an Indonesian study where marital status but not religion was associated with significant difference in the levels of stigmatized attitudes.³² The possible reason for this similarity may be that in both studies majority of respondents were from a single religion which lead to the homogeneity of respondents.

CONCLUSION

The findings of this study have provided evidence that majority of nurses in UNTH have an in depth knowledge of HIV/AIDS and positive attitude towards the care of PLWHA. The major factor that influences the attitude of Nurses in caring for PLWA is fear of contagion, hence nurses should be equipped with protective measures while in-service training on all aspects of HIV/AIDS is continued. This will enhance a non-discriminatory attitude towards the care of HIV/AIDS patients, thus improve the quality of care for PLWHA.

ACKNOWLEDGEMENTS

Authors are grateful to Dr. Ikenna Okpala for his help in sourcing material for literature review, typesetting this work and for sourcing the suitable journal for publication. We thank all the participants for their time and cooperation throughout the duration of the study. We are grateful to the management of the hospital for giving us approval to embark on this study.

Funding: No funding sources

Conflict of interest: None declared

Ethical approval: The study was approved by the Institutional Ethics Committee

REFERENCES

1. Rekab S, Zadeh E. Knowledge and Attitude of Nurses towards Care of HIV/AIDS Patients. *J Academic and Applied Studies*. 2011;1(1):39-51.
2. Umeh CN, Essien EJ, Ezedinachi EN, Ross MW. Knowledge, Beliefs and Attitudes about HIV/AIDS related issues, and the Sources of Knowledge among Health Care Professionals in Southern Nigeria. *J R Soc Promot Health*. 2008;128(5):233-9.
3. WHO. HIV/AIDS Factsheet 2016. Available at <http://www.who.int/mediacentre/factsheets/fs360/en/> / Accessed 4 September, 2016.
4. Abdullahi, AA. The Political Economy of HIV/AIDS: A Challenge to Democracy and Development" In: Saliu HA, Amali E, Fayeye J, Orila, E. eds. *Democracy and Development in Nigeria*. Vol. 3. Lagos: Concept Publications.
5. NACA Nigeria. The HIV Epidemic in Nigeria 2016. Available at <http://naca.gov.ng/article/hiv-epidemic-nigeria> Accessed 29 August 2016.
6. UNAIDS. HIV and AIDS Estimates 2016. Available at <http://www.unaids.org/en/regionscountries/countries/nigeria/>. Accessed 29 August 2016.
7. WHO 2016. HIV/AIDS Factsheet. Available at <http://www.who.int/mediacentre/factsheets/fs360/en/> / Accessed 4 September 2016.
8. Arinola AA, Adegunjo OA. Analysis of HIV/AIDS Information awareness and effectiveness among artisans in Ogbomosho, Oyo State, Nigeria, 2012. Available at <http://www.webpages.com>

- uidaho.edu/~mbolin/arinolaadekunjo.htm Accessed 28 February 2014
9. Adeyi O, Kanki P, Odutolu O, Idoko J. *AIDS in Nigeria: A Nation on the Threshold*, Cambridge, Ma, Harvard Centre for Population and Development Studies, 2006.
 10. Rekab Z, Suzan B, Zaleha I. Knowledge and Attitude Related to Caring for HIV/AIDS Patients among Nurses at Golestan Hospital, Iran. *Research J Biological Sciences*. 2011;6:446-52.
 11. Effa-Heap G. The attitude of nurses to HIV/AIDS patients in a Nigerian University Teaching Hospital 1997. Available at <http://www.codesria.org/IMG/pdf/30LEFHEAP.pdf?1030/10a115ffae669aad2dbe067472f65a2580c2242d>. Accessed 29 August 2016.
 12. Juan CW, Siebers R, Wu FF, Wu CJ, Chang YJ, Chao C. The attitudes, concerns, gloving practices and knowledge of nurses in a Taiwanese hospital regarding AIDS and HIV. *Int J Nurs Pract*. 2004;10(1):32-8.
 13. Mulaudzi MV, Pengpid S, Peltzer K. Nurses' Knowledge, Attitudes, and Coping Related to HIV and AIDS in a Rural Hospital in South Africa. *Ethno Med*. 2011;5:25-32.
 14. Pickles D, King L, Belan I. Attitudes of nursing students towards caring for people with HIV/AIDS: thematic literature review. *J Adv Nurs*. 2009;65(11):2262-73.
 15. Adebyo, S. Bamgabala, A, Oyediran, M. Attitude of health care providers to persons living with HIV/AIDS in Lagos State, Nigeria. *African J of Reproduction Health*. 2003;7(1):103-12.
 16. Barnett T, Blaikie P. *AIDS in Africa: its present and future impact*, London: Bellhaven Press; 1992.
 17. Goffman E. *Stigma*, Prentice Hall: Englewood Cliffs; 1963.
 18. Davis R, Houghton P. *Mastering psychology*, London: MacMillan; 1995.
 19. Babalola S, Fatusi A, Anyanti J. Media saturation, communication exposure and HIV stigma in Nigeria. *Social Science and Medicine*. 2009;68(8):1513-20.
 20. Visser MJ, Makin, Vandormael A, Sikkema KJ, Forsyth BWC. HIV/AIDS stigma in a South African community. *AIDS Care*. 2009;21(2):197-206.
 21. Aisien AO, Shobowale MO. Health care workers' knowledge on HIV and AIDS: Universal precautions and attitude towards PLWHA in Benin-City, Nigeria. *Niger J Clin Pract*. 2005;8(2):74-82.
 22. Reis C, Heisler M, Amowitz LL, Moreland RS, Mafeni JO, Anyamele C, et al. Discriminatory attitudes and practices by health workers toward patients with HIV/AIDS in Nigeria. *PLoS Med*. 2005;2(8):e246.
 23. Hossain MB, Kippax S. HIV-related discriminatory attitudes of healthcare workers in Bangladesh. *J Health Popul Nutr*. 2010;28:199-207.
 24. Wong LP, Syuhada ARN. Stigmatization and discrimination towards people living with or affected by HIV/AIDS by the general public in Malaysia. *Southeast Asian J Trop Med Public Health*. 2011;42:1119-29.
 25. Yamane T. Elementary sampling theory. In: Osuala EO, editor. *Research and Statistics in Nursing and Related Fields: A Practical Approach*. Nimo, Anambra State, Nigeria: Rex Charles and Patrick publishers: Nimo, Rex Charles and Patrick Ltd.; 2005; 65-70.
 26. IBM Corp. Released 2010. *IBM SPSS Statistics for Windows, Version 19.0*. Armonk, NY: IBM Corp.
 27. Walusimbi M, Okonsky JG. Knowledge and attitude of nurses caring for patients with HIV/AIDS Nursing in Uganda. *J Appl Nurs Res*. 2004;17(2): 92-3.
 28. Omari S. Knowledge, attitudes, practice and behaviour of nurses caring for HIV/AIDS patients at public hospitals in the Tshwane Metropolitan area. An unpublished Thesis. Africa Centre for HIV/AIDS Management, University of Stellenbosch, 2011.
 29. Meisenhelder J. Contributing factors to fear of HIV contagion in registered nurses. *IMAGE. J Nursing Scholarship*. 1994;26:65-9.
 30. Highriter ME, Tessaro I, Randall-David E, Quade D. HIV-related concerns and educational needs of public health nurses in a rural state. *Public Health Nursing*. 1995;12(5):324-34.
 31. Saob AE, Fawole AO, Sadoh WE, Oladimeji AO, Sotiloye OS. Attitude of healthcare workers to HIV/AIDS. *Afr J Reprod Health*. 2006;10:3946.
 32. Ezedinachi ENU, Ross MW, Meremikwu M, Essien EJ, Edem CB, Ekure E, et al. The impact of an intervention to change health workers' HIV/AIDS attitudes and knowledge in Nigeria: a controlled trial. *Public Health*. 2002:116.
 33. Harapan H, Feramuhawan S, Kurniawan H, Anwar S, Andalas M, Hossain MB. HIV-related stigma and discrimination: a study of health care workers in Banda Aceh. *Indonesia Med J Indones*. 2013;22 :22-9.

Cite this article as: Okpala PU, Uwak R, Nwaneri AC, Onyiaapat J, Emesowum A, Osuala EO, et al. Nurses' knowledge and attitude to the care of HIV/AIDS patients in South East, Nigeria. *Int J Community Med Public Health* 2017;4:547-53.