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Original Research Article

Knowledge, Attitude and Practice of Cervical Cancer Screening among Human Immunodeficiency Virus Patients Attending a Tertiary Health Centre in North-Central Nigeria

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Abstract: Globally, an estimated 5% of all cervical cancer cases are attributable to HIV, with a five-fold higher risk of occurrence in HIV-positive women. This study aimed at assessing the knowledge, attitude, and practice of cervical cancer screening among HIV patients at Federal Medical Centre Makurdi, North-central Nigeria. This cross-sectional study involved 123 HIV-positive women recruited by systematic random sampling over twelve weeks. Data was collected using an interviewer-administered questionnaire. The study revealed that the mean age of participants was 44.93±10.00 and 38(28.1%) had HIV infection between 11-15 years duration. Less than half of the participants 59(43.7%) had good knowledge of cervical cancer screening, while the majority 102 (75.6%) had a positive attitude towards cervical cancer screening and 76(56.3%) had undergone cervical cancer screening. The study concluded that the majority of HIV-positive women had poor knowledge of cervical cancer screening; however, most of them had positive attitude concerning cervical cancer screening. This calls for a scale-up of health education programs.

Keywords: Cervical cancer, Human immunodeficiency virus, Human papillomavirus, Screening, Knowledge, Attitude, Practice.

INTRODUCTION

Cervical cancer remains a significant public health concern, particularly among women living with Human Immunodeficiency Virus (HIV), who are at an increased risk for both the disease and its complications [1]. It is the fourth most common cancer among women worldwide, with an estimated 569,847 new cases and 311,365 deaths with 119,284 cases and deaths 81,687 in Africa [2]. Furthermore, the incidence of cervical cancer in Nigeria is about 18.4 per 100,000 women, with an estimated 12,075 women diagnosed every year [3].

Women living with HIV present a 5.4-fold higher risk of developing cervical cancer than HIV-negative women and are at high risk of precancerous lesions of the cervix and invasive cervical cancer due to immune suppression by HIV infection [4]. HIV also contributes substantially to the stark geographic disparities seen in cervical cancer burden. This is

because in countries with high HIV prevalence, the proportion of cervical cancer attributable to HIV is 40% or higher, whereas it is less than 5% in countries with much lower HIV prevalence [5]. Since the countries with high HIV burden have some of the highest cervical cancer rates, many efforts are needed to achieve cervical cancer elimination in these settings and this includes focusing on the prevention and treatment of both cervical cancer and HIV. Hence, the emphasis for regular cervical screening for HIV-infected women.

Despite advancements in screening technologies and awareness campaigns, disparities in knowledge, attitudes, and practices related to cervical cancer screening persist in this vulnerable population [6, 7]. Therefore, knowledge and attitudes toward cervical cancer screening are crucial in determining the screening intervention's uptake among women [8]. Increasing the knowledge, attitude and practice (KAP) of cervical cancer screening and prevention among females is a part of a comprehensive approach to cervical cancer prevention and control strategy. This might play a pivotal role in the controlling strategy on the issue [2]. This study explores the knowledge, attitudes, and practices surrounding cervical cancer screening in this demographic, highlighting the challenges and opportunities for enhancing healthcare access and education.

MATERIAL AND METHODS

Study Design, Setting and Population

It was a cross-sectional study carried out at Federal Medical Centre Makurdi, Benue State, among female patients with Human Immunodeficiency Virus/Acquired Immunodeficiency Syndrome (HIV/AIDS). The study included all adult female patients (18 years and above) diagnosed with HIV/AIDS attending HIV clinic at Federal Medical Centre Makurdi while severely ill female HIV patients, female HIV patients who have had a total hysterectomy, history of cervical cancer and those who were pregnant were excluded from the study.

Sample Size and Sampling

The minimum sample size required was calculated using the Leslie and Kish formula for descriptive studies [9].

$$N = \frac{Z^2pq}{\delta^2}$$

Where

N = Minimum sample size

Z = A constant at 95% confidence level = 1.96

p = Proportion in the target population estimated to have a particular characteristic of interest (cervical cancer screening) in another study from Enugu, Nigeria 9.1% [10] = 0.0091 Prevalence of Cervical cancer screening among HIV positive women in Enugu.

q = 1-p (i.e 1-0.09) = 0.909

δ = Desired precision of 5% = 0.05

$$N = \frac{(1.96)\ (1.96) \times (0.091)\ (0.909)}{(0.05) \times (0.05)}$$

= 127 patients.

However, the study population for this study was less than 10,000. Hence, the final sample estimate, nf, for proportions with population less than 10,000 was calculated using the formula given below [9]

$$nf = \frac{n}{1 + (n) / (N)}$$

Where,

nf = desired sample size when population is less than 10,000

n = the desired sample size when the population is more than 10,000 = 127

N = the estimate of the study population for the period of study =3744 (Number of adult female HIV patients expected to visit within a period of three months).

Hence nf = 127/1+127/3744=122.8

This was approximately 123.

When the 10% of the sample size for estimated non-response and missing questionnaire was included, the sample size was 135 female HIV patients. Therefore, a total number of 135 patients were recruited for the study.

A systematic sampling method was used in recruiting participants for the study. The approximate clinic attendance per day was 104. The sampling frame was the total number of clinic attendance on a given day. The number of respondents recruited on each day were five (5). The sampling interval was determined as:

$$\text{Sampling interval} = \frac{\text{The clinic attendance per day}}{\text{The number of respondents to be recruited on each day}}$$

This was approximately 21 (104/5)

Simple random sampling was used to choose the first patient recruited into the study, using the balloting technique. A number was selected between one (1) and twenty-one (21). These numbers were written on pieces of paper and put into a bowl from which an independent observer, a nurse picked one of the papers from the bowl. The number picked, was used as the random starting point (n). For example, if 2 was picked, the second female patient at the clinic was recruited and then the sampling interval (21) was added to the nth number to identify the next subject to be picked, in this example, that was 2 + 21, then 2 + 21 + 21 and so on. This process was repeated every day until the required sample size was attained.

Data Collection Methods

An interviewer administered questionnaire adapted from a study done in Ethiopia on the knowledge about cervical cancer and barriers towards screening among women living with HIV infection [11] was used in this study. The first section (Section 1) obtained information about the socio-demographics of the subjects (i.e., age, marital status, educational status, duration of HIV/AIDS infection, employment status, approximate income per month, religion, ethnic group).

The second section (Section 2) of the questionnaire assessed the knowledge of cervical cancer screening among the study participants. Participants' knowledge about cervical cancer screening was measured by eighteen (18) questions. Each question contains three responses, "Yes", "No" and "I don't know" and coded as 1 for correct (Yes) and 0 for incorrect (No/I don't know). The average of the scores was taken which is 9. Scores above the average score were categorized as good knowledge and scores below average were categorized as poor knowledge.

The third section (Section 3) of the questionnaire assessed the respondents' attitude towards cervical cancer screening. It is participants' attitude towards cervical cancer screening and was measured by six (6) items with the response of each item indicated on a three-point Likert scale (i.e., 1 = Disagree, 2 = Undecided, and 3= Agree). The total score was calculated by summating the raw scores of the six items ranging from 0 to 18, with an overall cut-off score of (18) indicating attitude towards cervical cancer screening. Those respondents who scored above the mean value (9) were considered as having a positive attitude towards cervical cancer screening, whereas, below the mean value labeled as having negative attitude.

The fourth section (Section 4) assessed the practice (uptake) of cervical cancer screening among the study participants. This was assessed by asking the participants if they had been screened for cervical cancer. Consent was obtained as a signature or thumb print below the consent form attached to the information sheet

Data collected on each clinic day from the participants was processed and kept in a safe place. Non-response was mitigated, as the questionnaires were Interviewer administered. With the aid of the serial numbers allocated (1-135), the questionnaires were arranged serially to aid easy access to relevant information.

Data Analysis

Data obtained using the questionnaire was analyzed with the Statistical Package for Social Science (SPSS v 23). Analysis was done in line with the aim and objectives of the study. Descriptive analysis was used for socio-demographic variables e.g., age, sex, etc., and were presented as summary indices e.g., mean, and standard deviation. Qualitative/Categorical variables were presented as frequency tables and proportions. All statistical values was set at 5% level of significance ($P<0.05$).

Ethical Considerations

Approval and ethical clearance were obtained from the Federal Medical Centre, Makurdi Health and Research Ethics Committee. Informed written consent was obtained from the participants prior to enrollment into the study. Participation was voluntary maintaining confidentiality.

RESULTS

This study was conducted among one hundred and thirty-five (135) women living with HIV attending the AIDS prevention initiative (APIN) Clinic of the Federal Medical Centre, Makurdi. The study took over 12 weeks with a response rate of 100 percent (135).

Table 1: Sociodemographic characteristics of the participants

Socio-demographic	Frequency	Percent
Age (in years)		
27-36	26	19.3
37-46	54	40.0
47-56	40	29.6
57-66	11	8.1
67-76	4	3.0

Socio-demographic	Frequency	Percent
Mean=44.93±10.00		
Marital status		
Single	17	12.6
Married	69	51.1
Others	49	36.3
Educational status		
Primary	21	15.6
Secondary	64	47.4
Tertiary	39	28.9
Non-Formal	11	8.1
Duration of HIV infection (in years)		
1-5	25	18.5
6-10	36	26.7
11-15	38	28.1
16-20	19	14.1
>20	17	12.6
Employment status		
Government employee	6	4.4
Non-government employee	12	8.9
Self-employed	110	81.5
Student	6	4.5
Retired	1	0.7
Religion		
Christianity	129	95.6
Islam	4	3.0
Traditional	1	0.7
Other	1	0.7
Ethnic group		
Tiv	119	88.1
Idoma	4	3.0
Igede	4	3.0
Others	8	5.9
Income (in Naira)		
30,000	37	27.4
30,000 – 40,000	81	60.0
40,001 – 50,000	6	4.4
>50,000	11	8.2

Table 1 shows that majority (40%) of participants were in the age group 37-46 years. More than half (51.1 %) were married. Almost half of the participants (47.4%) had secondary education, this was followed by participants with tertiary education (n=39, 28.9%) while the least were those who had non-formal (n=11, 8.1%). Vast majority of the participants in this study (95.6%) were Christians with monthly income of most participants between 30,000 and 40,000 (61%).

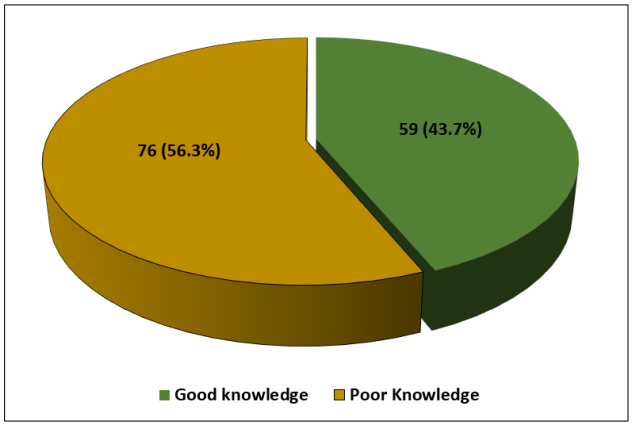

Figure 1: Knowledge of cervical cancer screening among participants

Figure 1 shows that above half (n=76, 56.3%) of the participants had poor knowledge of cervical cancer screening, while (n=59, 43.7%) had good knowledge of cervical cancer screening.

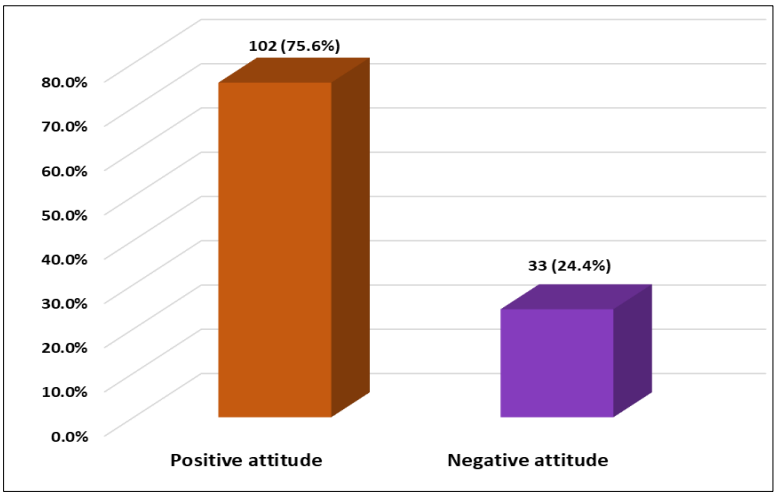

Figure 2: Attitudes and perception of participants towards cervical cancer screening

Figure 2 above shows the participants' attitudes and perceptions towards cervical cancer screening. The majority (n=102, 75.6%) of the participants had a positive attitude toward cervical cancer screening, while (n=33, 24.4%) had a negative attitude.

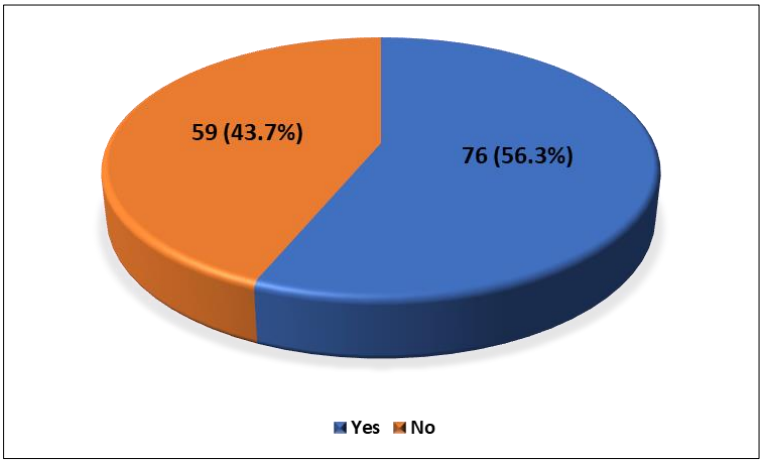

Figure 3: Practice (Uptake) of cervical cancer screening among participants

Figure 3 above shows the uptake of cervical cancer screening among the participants. Above half (n=76, 56.3%) of the participants had undergone cervical cancer screening while (n=59, 43.7%) had not been screened for cervical cancer.

DISCUSSION

This was a cross-sectional study conducted to assess the knowledge, attitude, and practice of cervical cancer screening among Human Immunodeficiency (HIV) patients in North-Central Nigeria. The study recruited one hundred and thirty-five (135) women attending the AIDS Prevention Initiative in Nigeria (APIN) Clinic of Federal Medical Centre, Makurdi.

The age range of participants was 27 to 75 years. The mean age was 44.93±10.00 years. This was similar to the mean age of 34.9±10.2 years conducted among women attending HIV clinic in Morocco [12]. Most of the participants were between the ages of 37-56 years (n=94, 69.6%). This result is in keeping with the studies conducted by Kimondo *et al.*, in Tanzania where majority of the participants were within the ages of 35- >45 years [8]. Of the respondents who participated in the study, the majority 69 (51.1%) were married followed by others (widowed, separated, divorced etc.) 49 (36.3%) and single participants were least in number 17 (12.6%). Amongst the study participants, about half participants (n=64, 47.4%) had secondary education, this was followed by participants with tertiary education (n=39, 28.9%) while the least were those who had non-formal (n=11, 8.1%). The result of this study could be due to people with a higher level of

education being more enlightened and usually understand the importance of screening as a form of prevention, thereby prompting their presentation at the hospital for cervical cancer screening.

A slightly higher proportion of participants (n=38, 28.1%) had HIV between 11-15 years. This was closely followed by those infected for 6-10 years (n=36, 26.7%). The least number were those infected for more than 20 years (n=17, 12.6%). More than two-thirds of the study participants 110 (81.4%) who responded to the study were self-employed; this was followed by 12 (8.9%) respondents who were Non-government employees. The dominant religion found in this study was Christianity 129 (95.6%) while the major ethnic group among the study participants was Tiv 119 (88.1%) followed by other tribes 8(5.9%). This pattern reflects the dominance of the Tiv tribes in Benue state. Majority of participants earned between 30,000-40,000 naira monthly (n=81, 61%) this was followed by those who earned less than thirty-thousand naira (n=37, 27.4%)

In this study, only 43.7% of participants had good knowledge of cervical cancer screening. A similar result was seen in Preambular, where a cross sectional study conducted among 74 women showed that 27 of the participants had good knowledge (36.5%) of cervical cancer screening [13]. Shrestha Smith in Nepal also reported a similar result where 34.4% of the participants had adequate knowledge about cervical cancer screening [14]. These similarities of less than 50% of participants having good knowledge of cervical cancer screening in the various studies conducted in Makurdi, Preambular Nepal may be so due to the study design and study settings. They were all cross-sectional studies conducted in tertiary institutions. The study tools were also similar as they all used questionnaires in conducting the studies. Majority of the women in the various studies were married. Omoyeni and colleagues in South Africa also reported that only 28% of the study participants had adequate knowledge about cervical cancer and screening [15]. In Ethiopia Addis Ababa, Shiferaw and colleagues reported that 23.4% of participants had good knowledge; this was also collaborated by Songspiran and colleagues in Thailand where 20.7% of participants had adequate knowledge [11, 16]. Higher percentages of participants with adequate knowledge was seen in studies conducted in Zambia and Uganda where 62.7% and 60% of participants had adequate knowledge respectively [17, 18]. In Zimbabwe, a cross sectional study involving six hundred seventy-nine women living in the rural community in Hurungwe district northwestern Zimbabwe showed that most women (81.2%) had knowledge of cervical cancer, however their knowledge base was not categorized [19]. These higher percentages of participants with adequate knowledge in comparison with the present study is likely to be so because of the study setting. Although they were all cross-sectional studies, the studies with higher percentages were conducted in the rural areas where majority of the women were living while the study done in Makurdi was done in an urban region, a state capital.

The study showed that majority 75.6% of the participants had positive attitude towards cervical cancer screening, while 24.4% of the participants had negative attitude towards cervical cancer screening. This study was comparable to the study conducted by Tadesse and colleagues in Ethiopia where 71.7 % of respondents had a positive attitude towards cervical cancer screening [20]. This positive attitude could be because of majority of the respondents being educated and residing in urban area having access to information enlightening them. Bansal Agam in India and Varadheswari in Perambalu also reported that 80.5% and 83.78% of participants respectively, had positive attitudes towards cervical cancer screening [13, 21].

Higher percentages of positive attitudes and perception towards cervical cancer screening were reported in various studies. In Lusaka Zambia, Mukosa and colleagues in a cross-sectional study reported that 91.6% of participants had positive attitudes and perception towards cervical cancer screening while Lui T in China reported that 96% of participants had positive attitude. These higher percentages of positive attitude may be due to the study settings while the present study was done in a tertiary hospital, Mukosa and colleagues in Zambia conducted their study in Lusaka among five various public health facilities and Lusaka is the largest city in Zambia [22, 23]. Kumari Swati in Kathmandu and Shrestha in Nepal [14, 24] reported an overwhelming 100% of participants having positive attitude towards cervical cancer screening. Kumari Swati conducted his study using non-probability sampling method (Convenience non-random sampling) while the present study was conducted using systematic random sampling method. Amu in Lagos and Mwantake in Tanzania reported lower percentages of 66.7% and 67.8% respectively [24, 25]. Tekle and colleagues however reported that majority of participants in a cross-sectional studies conducted in Southern Ethiopia had a negative attitude to cervical cancer screening [26].

This study found above half of the participants 56.3% had undergone cervical cancer screening while 43.7% had not. The practice of cervical cancer screening among participants in this study was lower than that in some other regions of the world. In the United States of America, Frazier and colleagues reported a PAP test uptake of 78% among women living with HIV [27]. In Southeastern United State, Wigfall and colleagues reported a prevalence rate of 84% cervical cancer screening [28]. In Ontario Canada, Andany and colleagues in a cross-sectional study reported that 82% of women living with HIV screened for cervical cancer [29]. Maso and collegues [30] reported a higher uptake of cervical cancer screening of 91% in Italy.

The practice of cervical cancer screening in this study was higher than that reported in Kathmandu, Bopal, Zimbabwe, Uganda, Perambalu and Ethiopia where 17.6%, 9.5%, 9.4%, 4.8%, 2.7% and 2.2% of participants respectively had screened for cervical cancer [13, 20, 21, 24, 31, 32].

CONCLUSION

This study showed that the majority (56.3%) of women living with HIV in North-Central Nigeria had poor knowledge regarding cervical cancer screening. Though the knowledge about cervical cancer screening among participants was poor, most of the women had a positive attitude towards cervical cancer screening (75.6%). The positive attitude of cervical cancer screening, however, did not translate into the practice (uptake) of cervical cancer screening as only 56.3% of participants had screening for cervical cancer. The participants may attribute this to the poor knowledge of screening.

RECOMMENDATIONS

For maximum uptake of cervical cancer screening among women living with HIV/AIDS, relevant bodies and stakeholders should prioritize health education. Screening for HIV for early detection and proper management will reduce the risk of cervical cancer among women. It is therefore imperative to scale up programs enhancing these services in the society. Further studies in this area involving community-based population is key in having more representation of the population.

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