

Utilization of Cervical Cancer Screening Services by Nurses at Nkana Hospital, Kitwe District

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ABSTRACT

Introduction: Zambia has one of the highest cervical cancer incidence and mortality rates in the world due to under-utilization of cervical cancer screening service. Screening remains the cornerstone of prevention. The study sought to assess the utilization of cervical cancer screening services by nurses at Nkana hospital in Kitwe district.

Methods: This was a descriptive cross-sectional study conducted at Nkana Hospital, Kitwe district, located in the Copperbelt province of Zambia. To maintain anonymity while showing respect to the participants, pseudo-facility name was used because of the nature of the study. Census sampling method was used to select 91 respondents who participated in the study. A self-administered questionnaire was used to collect data from the respondents and was analysed using SPSS version 21. Chi square test and binary logistic regression were performed to determine associations between the dependent variable and the independent variables.

Results: The findings indicated a significant relationship between educational level and the utilization of cervical cancer screening services by nurses, with a P-value of 0.004. Additionally, knowledge about cervical cancer stages was also found to be significantly linked to the utilization of cervical cancer screening services (P-value = 0.017). Furthermore, the importance for nurses to go for screening was also significant with the p-value = 0.05 and likewise willingness to do a CCS test (VIA) was similarly significantly associated with nurses utilization of CCS services with the p-value of 0.000.

However, there was no significant association found between overall attitude, overall knowledge, and the use of cervical cancer screening services (p-values > 0.05). The results of binary logistic regression showed that readiness to go for CCS test (VIA) was significant and had 0.041 times reduced odds of utilizing CCS services [OR=0.041, CI=0.010, 0.175, p=0.000]. Furthermore, indulging into sex at an early age was significant and had 0.20 times reduced odds of utilizing CCS services [OR=0.203, CI=0.048, 0.852, p=0.029].

Conclusion: The study discovered that the 33% who did not utilize the service, the majority cited that the test was painful (46.7%). There is need to involve nurses who have done the screening in explaining the procedure.

Keywords: Attitude, Cervical Cancer; Screening, Nurses, Knowledge, Utilization

Introduction

Zambia has the third-highest cervical cancer burden in the world, with an incidence rate of 65.5 per 100,00-

0 women and a mortality rate of 43.4 per 100,000 women in 2020, according to the WHO (2024) report on cervical cancer screening with HPV testing.¹⁸ Despite being a preventable and treatable disease, cervical cancer accounts for approximately 23% of all new cancer cases in the country, with the peak age of diagnosis being between 40 and 49 years.³⁶ Cervical cancer is defined as the uncontrolled growth of abnormal cells in the cervix lining.¹⁸

Globally, cervical cancer is the fourth most common cancer in women, with 604 000 new cases in 2020.^{10, 18, 33} About 90% of the 342 000 deaths caused by cervical cancer occurred in low- and middle-income countries.^{33, 37} The highest rates of cervical cancer incidence and mortality are in sub-Saharan Africa (SSA), Central America and South-East Asia.^{12, 37} According to a report by the World Health Organization (WHO, 2023), regional differences in the cervical cancer burden are related to inequalities in access to vaccination, screening of cervical cancer, utilization and treatment services. Cervical cancer is said to be avoidable if asymptomatic women are screened for precancerous cervical lesions and treated before they progress to invasive disease.^{1, 25, 35}

Cervical cancer screening services in Zambia were initially meant for Human Immuno-Deficiency Virus (HIV) positive women but due to the increased burden the service has been made available for every woman who needs to be screened yearly.^{2, 6} A world-wide pandemic of underutilizing cervical cancer screening services especially in developing countries has been established by various studies.^{21, 30}

Since 2006, Zambia has been tackling this issue with a rigorous screening program, with visual inspection combined with acetic acid (VIA) serving as the main screening instrument. Most individuals who test positive in the early stages are able to have access to early treatment and hence avoid premature deaths.^{1, 2, 32} According to WHO, 2023 report on cervical cancer, Zambia faces the same obstacles that other nations face, just like the majority of African nations.^{25, 37} The limited availability of screening programs, limited to selected health centers poses challenges for nurses to utilize cervical cancer screening services, particularly those employed in areas without the service, despite their awareness of the existence of such programs. It has been discovered that nurses' awareness of cervical cancer as a disease and cervical cancer screening services, influences patients' decisions to get screened.¹⁶ When it comes to matters of health, nurses are frequently regarded as "role models." Informing the public about the availability and importance of cervical cancer screening services is a major responsibility of nurses.¹⁶

According to previous studies, poor knowledge of cervical cancer and screening, low risk perception of the disease, fear of test results and screening to be painful, lack of access to screening services, high screening service costs, and unfavorable partner attitudes and acceptance of the service were the main obstacles to the uptake of cervical screening.^{11, 5, 19}

World Health Organization's global strategy for cervical cancer elimination (2020), endorsed by the World Health Assembly in 2020, calls for 70% of women globally to be screened regularly for cervical cancer with a high-performance test, and for 90% of those needing it to receive appropriate treatment.^{9, 29}

A growing body of evidence has demonstrated that women can effectively be screened and clinically managed for cervical cancer using non-cytological modalities.³⁴ The most common screening techniques are the Pap smear test, visual inspection with acetic acid (VIA), and HPV DNA test.¹⁰ In resource-constrained settings, such as Zambia, the VIA screening method is preferred for detecting precancerous cervical lesions.¹⁴ In past two decades, various research work has convincingly established the utility of VIA and HPV test in developing countries.^{3, 21} The evidences were evaluated by the World Health Organization (WHO, 2020) and recommendations have been recently published for comprehensive cervical cancer control strategies for the low and middle income countries.³ Zambia, being a developing

country, has adopted a cheaper but effective techniques for screening of cervical cancer called Visual Inspection with Acetate. VIA has been adopted in the “see and treat” methods that are less infrastructure-dependent. It is also cheaper and give the immediate results. ^{21,22}

Since 2006, Zambia has been tackling this issue with a rigorous screening program, with visual inspection combined with acetic acid (VIA) serving as the main screening instrument. ^{3,21} As of 2021, HPV testing has been extended to all ten provinces in Zambia through the use of ten regional central laboratories. ³¹ Zambia wants to attain 90% HPV vaccination coverage, 70% screening coverage, and 90% treatment and care coverage by 2030 in accordance with the World Health Organization's (WHO) global cervical cancer elimination initiative. ³¹ According to World Health Organization-Cervical Cancer Country Profiles (2021), the World Health Organisation should continue to provide Zambia with technical and financial support for the cervical cancer elimination initiative, but women in Zambia, including female nurses, continue to use cervical cancer services at a low rate. ³¹

It can be hypothesized that a variety of factors may affect nurses' decision-making processes and their capacity and desire to engage in cervical cancer prevention programs. Unfortunately, a lack of trustworthy data and inadequate reporting have made it impossible to determine the actual scope of the issue. Zambia, being a developing nation, is not exempted from the public health issue of cervical cancer (WHO, 2023) which is the most common cancer in women and the primary cause of death for women. ¹⁵ This is seen as a result of the disease developing slowly and manifesting at a later stage. It may also result from deceptive assurances that the illness is not exhibiting any symptoms. ^{1,2} Therefore, this necessitated the researcher to evaluate the extent to which female nurses at Nkana Hospital in Zambia are utilizing cervical cancer screening services.

In the past three years, the number of nurses referred by doctors to go for cervical cancer screening at Nkana Hospitals continued to increase. Currently, the total population of female nurses at Nkana Hospital in Kitwe is 112 and evidence shows that the number of nurses utilising the cervical cancer screening services is low. For instance, in 2020, only 1 nurse utilized the service representing 0.9%. In 2021, no nurse utilized the cervical cancer services and in 2022, 1 (1%) nurse went for screening and 2 (1.8%) in 4th quarter. From 2019 to 2022, four out of six nurse who went for screening were on request by an Obstetrician (67%). This shows that female Nurses are not willingly utilizing cervical cancer screening services marking them to report late for treatment. ³⁷

Lack of knowledge, the attitude of nurses, barriers and lack of motivation on cervical cancer screening could be the probable causes for under utilization of cervical cancer screening. ²⁰ With good explanation on cervical cancer, nurses could start utilizing the cervical cancer screening service without waiting to be referred by the doctor. This will help early detection before the disease becomes severe. Complications such as vaginal fistulas, anaemia, narrowing of the vagina due to radiotherapy, kidney failure, hemorrhage and vaginal discharge including death are prevented. ⁸ Cervical cancer, on the other hand, may have a significant impact on nurses, their spouses, and other family members if they are waiting to be referred by a medical staff. Also if nurses are waiting to be referred to cervical cancer screening centres by a doctor, early diagnosis when treatment is more effective would be missed, resulting in increased cancer-related morbidity and mortality. ²⁸ According to a researcher, if nurse usage of cervical cancer screening programmes remains low and nurses wait to be referred, hospitalisation expenses and deaths may result. Literature according to USAID (2021), signifies that cervical cancer screening services in Zambia are offered free of charge. Despite the availability of the free cervical cancer screening services, nurses were underutilizing the service and waited to be referred by the doctor hence presented with late signs and

symptoms of cervical cancer. This had led to one death and 6 hysterectomies.³⁷ Among the few nurses utilized the service, the majority were referred by the doctors.

The study has added to the already little documented existing body of knowledge about cervical cancer screening by nurses in the Copperbelt Province in Zambia. It will also help the Ministry of Health through the primary healthcare services to improve on the strategies to disseminate information regarding cervical cancer screening to nurses. It is envisaged that the results of the study will be used as a determinant of the need to develop training programmes to educate nurses on the importance of cervical cancer screening. It will help the country at large in educating and keeping nurses informed on available cervical cancer testing techniques, thus helping in reducing the cervical cancer incidences. Moreover, there was little or no documented study conducted on utilization of cervical cancer screening services among nurses in Kitwe district of Zambia. Therefore, this study was necessary in order to fill the information gap on utilization of cervical cancer screening services by nurses' at Nkana Hospitals in the copperbelt Province of Zambia.

METHODOLOGY

The study was a descriptive cross-sectional study conducted at Nkana Hospital Hospital in the Copperbelt province, Zambia. The study population were all female nurses working at Nkana Hospital. Nkana Hospital had a population of approximately 112 female nurses. Female nurses at Nkana Hospital who were present at the time of interview were included. Nurses who who did not consent, those who were on long leave and those who were critically ill at the time of data collection were not included in the study. Census sampling method was used to select the respondents for this study. Census sampling method is a statistical investigation in which data are collected for each and every element or unit of the population.it is also known as complete or 100% enumeration or survey. Therefore, all the female nurses working at Nkana Hospital qualified for the study. Data was collected using a pretested self-administered questionnaire. The data collection tool consisted four sections. Section one elicited information on the respondent's socio-demographic data, section two was on knowledge on cervical cancer, section three was on utilization of cervical cancer screening services and four on attitude toward cervical cancer screening. Validity was ensured by conducting a thorough literature search on CCSS utilization before carrying out the study. Experts in gynaecology, obstetrics, and research supervisors reviewed the data collecting instrument to see if it elicited the appropriate replies on the variables being measured. Furthermore, the questions were written in a straightforward, clear, and precise manner to allow responders to provide clear and precise responses.

To ensure reliability of data, a pilot study was conducted at Milambo Hospital to ensure dependability. In terms of geolocation, demographic, social, physical, and economic determinants of health, the hospital is nearly identical to Milambo Hospitals, which was used in the study. Research Assistants were trained in the data collection processes. In addition, the Cronbach's alpha test was done and a score of 0.80 was considered. The reliability was also ensured by making sure that same questionnaire was administer to all the respondents.

The researcher distributed the questionnaires to the respondents to complete and were collected soon after completion. A pilot study was conducted on study population with similar characteristics with the main study. Following data collection, the questionnaires were sorted and checked for accuracy and completeness before being entered into the Statistical Package for Social Sciences (SPSS) version 21 application. The data was analysed using SPSS. Chi square test was used to test the association between the dependent variable (utilisation) and the independent variables. Fisher exact test was used when the

assumptions were not met. The level of significance was set at 0.05% at 95% confidence interval. Binary logistic regression was used to identify factors that influence utilization of cervical cancer screening services among Nurses because the dependent variable was dichotomous. Data was presented using frequency tables and pie charts, and cross tabulations was created to highlight correlations between variables.

Ethics clearance was obtained from the University of Zambia Bio Medical Research Ethics committee. Written permission to conduct the study was obtained from the Mopani copper mine Plc. The purpose and nature of the study was explained to the study participants. Those who declined to participate were reassured that no privileges would be denied to them. Those who agree to take part in the study were asked to sign a consent form. Those who participated in the study were not remunerated in any way. The respondent was not exposed to any physical and emotional danger or harm. Confidentiality and anonymity were maintained by respondent’s names not appearing on the questionnaires. Respondents were interviewed in a private room, one at a time. This ensured privacy. After each interview session the investigator put all questionnaires under lock and key and no persons other than the researcher was allowed to access the collected data. Respondents were assured of anonymity and confidentiality during the interview as they were interviewed in privacy.

RESULTS

Table 1: Social demographic characteristics: (n =91)

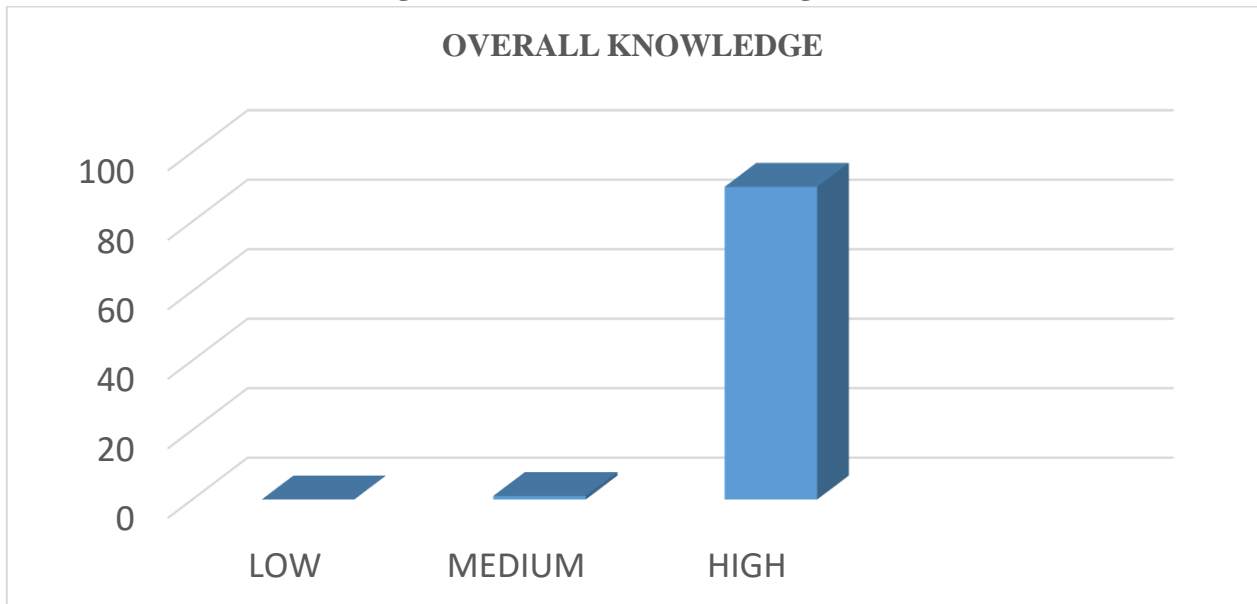
	Frequency	Percent
Age In Years At Last Birthday		
20-29 Years	26	28.6
30-39 Years	50	54.9
40-49 Years	9	9.9
50-59 Years	6	6.6
Total	91	100
Professional qualification		
Midwife	26	28.6
Nurse administration	2	2.2
Registered Nurse	43	47.3
In-change	8	8.8
Theatre registered nurse	8	8.8
Intensive Care Unit Nurse	4	4.4
Total	91	100
Marital status		
Married	53	58.2
Single	37	40.7
Widow	1	1.1
Total	91	100
Highest level of education		
Diploma	77	84.6
First degree	14	15.4

Total	91	100
Number of children		
Zero	17	18.7
1-2	56	61.5
3-6	18	19.8
Total	91	100
Work experience		
0-5	33	36
6-10	26	29
11-15	20	22
16 and above	12	13
Total	91	100
Christians	91	100
Moslems	0	0
Hindus	0	0
Total	91	100

Table 1 indicates most (54.9%) of the respondents were within the age group 30 to 39 years and were Registered nurses (47.3%) while 28.6% Midwives and 8.8% were Theatre registered nurses. Majority 61.5% had 1 to 2 children. About 84.6% had diploma and 15.4% (14 nurses) had first degree qualification, all of the respondents were Christians (100%) and majority (36%) had a working experience of less than 5 years.

The findings show that more than three quarters 85 (93%) of the respondents mentioned the correct sites offering cervical cancer screening services and their primary sources of information was nursing school training (67%), workplace (26.4%), workshops 4 (4.4%) and mass media 2 (2.2%). Sixty four percent (64%) of the nurses mentioned correct test for cervical cancer screening and 33 (36%) did not. Most nurses (76.9 %) indicated that cigarette smoking was a risk factor for cervical cancer. All the nurses reported that women with multiple sexual partners were susceptible to cervical cancer and 76.9% of nurses indicated that early sex at a younger age predisposed someone to have cervical cancer. With regards to signs and symptoms of cervical cancer, approximately 86.8% of the respondents' reported that vaginal bleeding in women after menopause is abnormal and 92.3% stated that foul vaginal discharge is the sign and symptom of cervical cancer. About 84% of the nurses indicated that stage 1 of cervical cancer had the highest survival rate and 7(7.7%) supported that stage 2 and 4 to have the highest survival rate respectively.

Figure 1: Overall total knowledge level



Ninety nine (99%) percent of the respondents had high knowledge of cervical cancer.

UTILIZATION OF CERVICAL CANCER SCREENING SERVICES

In this study, 67% of the respondents acknowledged having utilised Cervical Cancer Screening services. Among the 91 respondents, 40% said that they had utilized cervical cancer screening services within three years, 27% did not utilize the service within three years and 33% had never gone for cervical cancer screening services in their life time. The hindrance for lack of screening for cervical cancer was fear of the test (46.7%).

ATTITUDE TOWARDS CERVICAL SCREENING

In the present study, about 76.9% were willing to do a CCS test (VIA) and 80.2% strongly agreed to recommend someone for screening and 84.6% strongly agreed that it was important to go for cervical cancer screening regularly while 7 (7.7%) agreed. Nurses were asked whether they would agree to discuss cervical cancer openly and 79.1% strongly agreed while 7 (7.7%) agreed. The respondents were asked where they did their screening and 38 (41.8 %) said they did their screening from other centers and only 23 (25 %) were screened at Wusakile mine hospital. The reason could be privacy.

Table 2: Overall attitude of nurses toward CCSS

Attitude types	Frequency	Percent %
Negative attitude	6	6.6
Positive attitude	85	93.4
Total	91	100

About 93.4% of the respondents had positive attitude towards cervical cancer screening.

Table 3: Association between the demographic characteristics and utilization (n= 91)

Characteristics		Utilization			
		Yes	No	Total	P-Value
Age	20-29	26	5	26	0.204
	30-39	30	20	50	
	40-49	7	2	9	
	50-59	3	3	6	
Marital status	Married	38	15	53	0.373
	Single	22	15	37	
	Widow	1	0	1	
Education level	Diploma	47	30	77	0.004
	Degree	14	0	14	
Job Title	Midwife	17	9	29	0.185
	Nurse Administration	0	2	2	
	Registered Nurse	29	11	40	
	Sister in charge	4	4	8	
	Theatre registered nurse	7	1	8	
	ICU nurse	4	3	7	
Number of children	No children	10	7	17	0.238
	1-2	36	20	56	
	3-6	15	3	18	

Table 3 shows associations between socio-demographic characteristics and nurses’ utilization of cervical cancer screening. Out of all the demographical characteristics, only educational level was significantly associated with utilization of cervical cancer screening services with the P values of 0.004.

Table 4: Association between Knowledge and Utilization (n = 91)

Variables	Category	UTILIZATION			
		Yes, n (%)	No n (%)	Total	P-Value
Treatment on early cervical cancer	Curable	55(69%)	25 (31%)	80	0.347
	Not curable	6(54.5%)	5(45.5%)	11	
Knowledge on the site for CCS	Knowledgeable	55(64.7%)	30(35.3%)	85	0.076
	Not knowledgeable	6(100%)	0(0%)	6	
Cervical cancer screening investigation	Knowledgeable	39(67.2%)	19(32.8%)	58	0.955
	Not knowledgeable	22(66.7%)	11(33.3%)	33	
Health women should go for screening	True	60(70.6%)	25(29.4%)	85	0.070
	False	1(16.7%)	5(83.3%)	6	
Know the place to go for screening	Knowledgeable	55(64.7%)	30(35.3%)	85	0.076
	Not knowledgeable	6(100%)	0(0%)	6	

Smoking predispose to cervical cancer	Knowledgeable	50(66.7%)	25(33.3%)	75	0.872
	Not knowledgeable	11(69%)	5(31%)	16	
Knowledge on CC staging	Stage 1	47(61%)	30 (39%)	77	0.017
	Stage 2	7(100%)	0(0%)	7	
	Stage 3	0(0%)	0(0%)	0	
	Stage 4	7(100%)	0(0%)	7	

Table 4 shows associations between knowledge and utilization of CCS services. Knowledge on CC staging was significant and had p-values of 0.017 (p-value ≤ 0.05).

Table 5 Association between Attitude and Utilization (n = 91)

Variables	Category	UTILIZATION OF CERVICAL CANCER SCREENING SERVICES			P-Value
		Yes	No	Total	
Importance for nurses to go for screening	Strongly agree	53(69%)	24(31%)	77	0.050
	Agree	2(28.6%)	5(71.4%)	7	
	Neutral	6(85.7%)	1(14.3%)	7	
	Disagree	0(0%)	0(%)	0	
	Strongly Disagree	0(0%)	0(0%)	0	
Willingness to recommend someone for screening	Strongly agree	51(70%)	22(30%)	73	0.337
	Agree	3(42.8%)	4(57.2%)	7	
	Neutral	7(63.6%)	4(36.4%)	11	
	Disagree	0(0%)	0(0%)	0	
	Strongly Disagree	0(0%)	0(0%)	0	
Open for cervical cancer discussion	Strongly agree	49(68.4%)	23(31.6%)	72	0.776
	Agree	5(58.3%)	2(42.7%)	7	
	Neutral	7(58%)	5(42%)	12	
	Disagree	0(0%)	0(0%)	0	
	Strongly Disagree	0(0%)	0(0%)	0	
Willingness to do a CCS test (VIA)	Willing	57(81.4%)	13(18.6%)	70	0.000
	Not willing	4(19%)	17(81%)	21	

Chi squared test was used for expected frequencies of more than 5 and for expected frequencies of less than 5, fisher’s exact test was used. Table 5 shows associations between attitude and utilization of CCS services by nurses. The importance for nurses to go for screening was significant with the p-value =0.05 and willingness to do a CCS test (VIA) by Nurses was also significant with the p-value = 0.000.

Table 6: Association between Overall attitude and Utilization (n = 91)

Variables	Category	UTILIZATION			
		Yes, n (%)	No n (%)	Total	P-Value
Overall on attitude	Positive	0(0%)	6 (100%)	6	0.083
	Negative	30(35%)	55(65%)	85	
	Total	30	6	91	

Table 6 shows association between Overall on attitude and utilization of CCS services. Overall on attitude and utilization of CCS services was not significant (p=0.083).

Table 6: Binary logistic regression (n=91)

	Unadjusted analysis	Adjusted analysis
	OR CI (95%) P-value	OR CI (95%) P-value
AGE		
51-60	REF	REF
20-30	4.200(0.645, 27.362) 0.133	5.497(0.55,54.995)0.468
31-40	1.500(0.275, 8.189) 0.640	1.702(0.038,77.030)0.785
41-50	3.500(0.372, 37.971) 0.274	4.192(0.13.113.076)0.418
Number of children		
Above 3	REF	REF
Zero	0.286(0.059,1.375)0.118	0.747(0.095,5.854)0.781
1 to 2	0.360(0.093,1.395)0.139	0.482(0.086,13.206)0.406
Interest to go for CCS test (VIA)		
NO	REF	REF
YES	0.54(0.015, 0.186)0.000	0.041(0.010, 0.175) 0.000
Sex at early age		
NO	REF	REF
YES	0.440 (0.835, 6.185) 0.108	0.203(0.048,0.852) 0.029
Vaginal Bleeding		
NO	REF	REF
YES	2.745(0.562,13.416)0.212	5.023(0.486,51.920)0.17
Work experience		
NO	REF	REF
YES	0.965(0.907,1.026)0.250	1.040(0.883,1.226)0.636
Smoking		
NO	REF	REF
YES	0.909(0.344,3.513,) 0.872	0.523(0.091, 2.817)0.450

CI = Confidence interval, CC = Cervical cancer, CCS= Cervical cancer screening, OR = odds ratio
 In this study, interest to go for CCS test (VIA) had significantly 0.041 times reduced odds of utilizing CCS services [OR=0.041, CI=0.010, 0.175, p=0.000]. Additionally, indulging into sex at an early age had significantly 0.20 times reduced odds of utilizing CCS services [OR=0.203, CI=0.048, 0.852, p=0.029].

DISCUSSION OF FINDINGS

This discussion of the findings is based on the research analysis of the responses from nurses at Nkana hospital in Kitwe. The study main objective was to evaluate utilization of CCS services by nurses at Nkana hospital in Kitwe urban district. The findings showed that the group with the highest frequency was between 30-39 years (group mode) and were slightly more than half (54.9 %). The explanation for the large number of the respondents falling between 30-39 years old could be attributed to the fact that most household population in Zambia has a greater number of young people than older people (Worldometer, 2024). This was also in accordance with Owalobi and Adejumo (2021) in a study titled utilization of cervical cancer screening service among nurses in Ekiti state, Nigeria who also found that the greatest proportion of the respondents (72.2%) were aged between 30-39 years. Ifemelumma et al (2021) also reported similar findings. The current study showed no statistically significant relationship between age and utilization of cervical cancer screening services by nurses ($p=0.204$), as indicated in table.3.

With regards to professional qualifications, most of the respondents were registered nurses (47.3%) followed by the midwife (28.6%) and in general, most of the nurses had diploma (84.6%). This could have a positive attitude in the utilization of CCS services by nurses when most of the respondents are midwives because they have a course known as sexual reproductive health in their curriculum and cervical cancer is among the topics (RM curriculum, 2015). The current study showed that educational level was significantly associated with utilization of cervical cancer screening services ($p=0.004$) as indicated in table.3. Sigh et al, (2012), stated that education is an important determinant in health-seeking behavior since it is assumed that educated people seek medical attention early more than the uneducated or semi-educated people who would seek unconventional medical attention before going to the hospital. Education changes the mind set of people where utilization to health services are concerned as educated people are better placed to understand the importance of using cervical cancer screening services to prevent getting diseased.

In this study, all the respondents were Christians. This could be attributed to the fact that Zambia is largely a Christian nation with over 80% of the population believing in the Christian faith (Africa safari, 2010). The findings also revealed that majority of the respondents were married (58.2%). The explanation for the large number of respondents falling in the marriage group could be attributed to the fact that most of the respondents were between 30-39 years, the age group people are thought to have settled with their partners. On the number of children which was not associated with utilization of cervical cancer screening services by nurses ($p=0.238$), majority had children aged between 1-2 (56%). The explanation for majority of nurse to have children between 1-2 could be that most of the respondents were in the reproductive age group and they were young. On the other hand, table 3 indicates that job title, marital status and work experience were also not significantly associated with utilization of cervical cancer screening services by nurses ($p\text{-values}>0.05$).

The study indicated that the majority of nurses (99%) had high overall knowledge level on CCS services as indicated in figure 1. This high knowledge level could be attributed to the study population being nurses (100%) who had learnt on complications of cervical cancer at collage and at work. The finding was in agreement with a study done by Subhashree et al., (2021) on knowledge, attitude and practice of cervical cancer screening among the staff nurses at rural hospital (Loni) who indicated that majority of nurses (88.75%) were knowledgeable.

The study showed that majority of nurses (93 %) knew where to go for cervical cancer screening and that the commonest source of information was from nursing training (67%). This could indicate that nurse

were not going for refresher courses and this may have an impact on utilization of health services. Refresher training reinforces and updates employees' knowledge and skills (Adriana, 2023). Make Stevens (2000) further indicated that refresher course increases person's knowledge.

More than half of the nurses (62 %) were knowledgeable about the test for cervical cancer screening. These findings agreed with Ademuyiwa and Malomo (2021)'s study which was conducted in Lagos, Nigeria which concluded that majority of their respondents had knowledge on cervical cancer screening test. The findings were also similar to a study conducted by Abdelraof et al. (2020) in Egypt on assessment of knowledge towards cancer of the cervix among nurses as well as a study by Babajide and Adejumo (2021) on utilization of cervical cancer screening service among nurses done in Nigeria, Ekiti State. In addition, Elvis et al (2021) reported comparable finding in a study done in Nigeria where female health professionals had a good level of knowledge and a favourable attitude toward cervical cancer screening. Furthermore, Chawla et al in India also reported optimum knowledge of cervical cancer and screening among their respondents. Better knowledge on cervical cancer and cervical cancer screening can lead to a positive attitude and also good health practice like going for cervical cancer screening (Noman et al., 2020). On the other hand, Khadija et al (2023) in a study conducted in United Arab Emirates reported that 90 per cent of nurses in their study had poor knowledge about cervical cancer screening and awareness about human papillomavirus vaccination. Similarly, Shekhar et al. (2013) in India reported same findings. In this study, 76.9% (75) of nurses stated that cigarette smoking was a risk factor for cervical cancer. All the nurses reported that women with multiple sexual partners were susceptible to cervical cancer and 76.9% (70) nurses were in agreement that early sex at a younger age predispose someone to have cervical cancer. This indicated that nurses had knowledge on risk factors of CC and this could be attributed that nurses are health personal with knowledge on CC.

Above half of respondents 86.8% (79) stated that unusual heavy and continuous bleeding in women after menopause is abnormal and 92.3% (84) mentioned that foul vaginal discharge is abnormal. Only 7.7% (7) did not relate watery discharge as a sign and symptom of cervical cancer whilst only 13.2% (12) nurses said that vaginal bleeding after menopause was not the sign and symptom of CC. The study showed that 84%(77) respondents had knowledge on cervical cancer staging. This could be attributed to the fact that nurses are health professionals.

Table.4 shows that knowledge on cervical cancer staging was significantly associated with utilization of cervical cancer screening services by nurses (p -value ≤ 0.050) as indicated. Knowledge on whether early CC is curable or not, on smoking as a predisposing factor and on the site for CCS services were not significantly associated with cervical cancer utilization services.

Health workers especially nurses are often times looked upon as "role models" in health related issues (Keele, 2019). The population knows that nurses go through collage and learn on health issues including cervical cancer. Nurses play a major role in enlightening the public on the availability and need for cervical cancer screening services. They are informed individuals who are expected to have more information and knowledge about several health related issues and also act as role models in uptake of preventive services. Cervical cancer screening services are unlikely to be used by nurses who have little knowledge about the disease and how to prevent it (Petersen et al., 2022). This sentiment is reaffirmed by Mantula et al (2023) who conducted a study on cervical cancer screening outcomes in Zambia, where it was discovered that women were not utilizing cervical cancer screening services due to lack of information.

The findings from this study shows that 93.4% of nurses had a positive overall attitude toward utilization of CCS services as indicated in table 2. The finding was encouraging as most of the nurses who should be

the role models and know about the disease had a positive attitude. The attitudes of one's susceptibility to cervical cancer can affect screening behavior as indicated by Roy et al (2024). The study was in agreement with Babafemi et al. (2019), in a study on assessment of knowledge, attitudes and practice of cervical cancer screening among female nurses who concluded that knowledge and attitude about CCS were good but utilization was poor. This was contrary with Roy et al (2024) who stated that good attitude leads to utilization of health service. It is not always that good attitude leads to high utilization of service as indicated by Babafemi et al (2019).

This study is also in agreement with another study done in Nigeria by Elvis et al (2021) who concluded that female health worker including nurses had a favourable attitude toward CCS. This finding contradicted a study conducted in Ethiopia by Ayele et al. (2017), which indicated that 63% of the study's participants had a negative attitude towards cervical cancer screening facilities, with only 7.3% having ever been screened.

The findings further showed that 80.2% of the nurses strongly agreed to recommend someone for CCS and 84.6% strongly agreed that it was important to go for cervical cancer screening. This could have a good impact on utilization of cervical cancer service. Surprisingly, only 25% did their screening at Nkana Hospital. The explanation for low utilization at Wusakile Mine Hospital could be privacy. The findings of this study was not in agreement with Babjide and Prisca (2021) in a study on utilization of cervical cancer screening among nurses in Ekiti State in Nigeria who revealed that the attitude of nurses toward cervical cancer utilization was negative and not favourable. This finding is contrary to Awodele et al (2011) findings who conducted study in Lagos University teaching hospital whose results showed that 89% of the nurses had good attitudes towards Pap smear though most of them had never had done it. Another study conducted in India by Shekhar et al. (2013) reported a negative attitude of nursing staff towards cervical cancer screening. However, further analysis showed that overall attitude and utilization of cervical cancer screening were not significantly associated (p value=0.083) as indicated in table 6.

The current study also found an association between nurses' willingness to do a CCS test (VIA) and utilization of CCS services (p value ≥ 0.05) as indicated in table 5. The current study revealed that 67% (61) of the nurses utilised CCS services and only 7% of those who utilized the service were self – referred and the majority were referred (60%) . This could lead to a late diagnosis of cervical cancer disease leading into complications and high hospital costs (WHO, 2023). About 40% (36) of the respondents reported that they had utilized the service within three years. Majority of those who did not utilized said that the test was painful 14 (15.4%). These finding are in agreement with Babajide and Adejumo (2021)'s study findings which revealed that nurses at Adeoyo maternity teaching hospital though were aware of cervical cancer, the availability and importance of screening, yet only few had undergone cervical cancer screening (self-referral). Babajide et al (2021) cited also that 90.6% of their respondents were willing to be screened if given the opportunity. Seldah et al (2021) also found low utilisation of cervical cancer services among nurses and midwives in their study. Similarly, Jemal and colleagues (2023) in southern Ethiopia and Arulogun and Maxwell (2012) at the University College Hospital Ibadan Nigeria reported low utilisation of cervical cancer. In addition, Niquessie et al (2019) in South West Ethiopia in a study titled 'Cervical cancer services utilisation and associated factors age eligible women ' recorded similar findings. On the other hand, a study conducted by Mwale in 2020 at the Solwezi General Hospitals in Zambia, revealed that information on the utilization of cervical cancer screening among female nurses was lacking. Utilization of cervical cancer screening services among nurses will encourage more women to go for screening as they are seen to be role model in the community (Babajide et al., 2021).

CONCLUSION AND RECOMMENDATION

The study's objective was to evaluate how Nkana Hospital's nurses in Kitwe district of Copperbelt province in Zambia, utilized cervical cancer screening services. The findings demonstrated a significant relationship ($P=0.004$) between educational attainment and the utilization of cervical cancer screening services. The study also revealed a significant relationship between the utilization of cervical cancer screening services and knowledge on stages of cervical cancer (p -value =0.017). Furthermore, the importance for nurses to go for screening was significance with the p -value =0.05 and likewise interest to go for CCS test (VIA) was also significance with the p -value = 0.000.

Nonetheless, there was no significant relationship (p -values>0.05) between overall attitude, overall knowledge, and utilization of cervical cancer screening services by nurses. The researcher, there for fail to reject the null hypothesis which says there is no relationship between attitude of nurses and utilization of cervical cancer screening services. The null hypothesis which says that there is no relationship between knowledge and utilization of CCS services by nurses was not rejected. There was insufficient evidence to reject the null hypothesis. In the current study, overall attitude and overall knowledge were not significantly associated to nurses' utilization of cervical cancer screening services, knowledge of CC staging, educational attainment, interest to go for CCS test (VIA) and importance for nurses to go for screening were related to utilization of CCS services.

To improve the utilization of cervical cancer screening among nurse's re-fresher courses on cancer screening including cervical cancer should be arranged and possibly incentives given to those conducting the screening to boost morale and information on benefits of cervical cancer screening should be accessible at health facilities in form of posters and leaflets on the wards. Moreover, health-care providers should increase screening for cervical cancer among nurses by continue providing health education through clinical presentation. The study was a facility-based, and the study participants may not represent the general population. Hence, it may be important in future to conduct a similar research at a larger scale in order to generalize the findings.

Limitations

This study was a facility-based, and the study participants may not represent the general population. It was not possible to conduct the study on a large scale with a large sample size due to limited resources and time in which the study was to be completed and submitted to the school. But the researcher managed to collect data according to the sample size. Time constraint was another challenge as there was need to balance between clinical experiences and data collection. There was limited literature on the research topic done locally and hence the researcher used literature from researches done in other places which were related to the local situation

Strengths of the study

The strength of the study lies in the use of statistical procedures to analyze data therefore, biasness was minimal. The study serves as a valuable baseline for future research in this area. It highlights areas that need further exploration and improvement, guiding the development of more comprehensive studies. Last but not the least, by focusing on a specific healthcare facility and population in Kitwe, the study has contributed to the understanding of healthcare dynamics and challenges within the local context, providing insights that can inform local healthcare practices and policies

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