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Cervical Cancer Screening and Vaccination: Profiling Determining Factors Influencing Uptake among Health Workers in Abuja, Nigeria

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Abstract

Cervical Cancer (CC) remains one of the leading causes of death among reproductive-age females globally. Screening and vaccination of CC are still low among females, hence the increase in the death toll from the disease. This study investigated the factors influencing the uptake of cervical cancer screening and vaccination among reproductive-age female workers at selected hospitals in Abuja, Nigeria. Using a descriptive quantitative design, self-administered questionnaires were used to gather data from a total of 160 participants. The validity and reliability of the instrument were ensured with a Cronbach Alpha coefficient of 0.899. The collected data were analysed using descriptive and inferential statistics at $p < 0.05$ significance level using Statistical Package for Social Sciences (SPSS) version 24.0. Good knowledge and poor attitudes about cervical cancer screening and vaccination were documented in this study. As reported in this study, identified factors influencing the uptake of CC screening include the cost of screening and vaccination, availability of service, economic status of the individual, and level of education. There was no significant relationship between the level of knowledge of cervical screening and vaccination and the uptake among the participants ($p=0.178$). Our study suggests that knowledge did not translate into the uptake of cervical cancer screening among study participants. Other factors were responsible. Therefore, multi-dimensional approaches toward addressing limiting factors to the uptake of cervical cancer screening and vaccination should be encouraged. Making screening facilities available and at a subsidised rate may encourage increased uptake. Continuous public health education and enlightenment are also recommended.

Keywords: Cervical Cancer, Screening Uptake, Influencing Factors, Reproductive Age Women.

Introduction

Cervical Cancer (CC) is a public health problem and a priority concern of the World Health Organisation (WHO) program on Cancer Control; However, there are various levels of resources to detect cervical cancer, women are still reluctant to go for the screening and take the Human Papilloma Virus (HPV) vaccine (Bedell *et al*., 2020). CC is a

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type of cancer that is preventable and treatable through early screening. It is the second most diagnosed and leading cause of cancer death among childbearing-aged women worldwide, with more than 85% of the cases and deaths in developing countries (Ujah, 2013). According to Momenimovahed *et al*. (2019), every 10 minutes, two women die from cervical cancer worldwide. Sub-Saharan Africa has the highest burden of mortality associated with cervical cancer globally (Bray et *al.,* 2018). In Nigeria, less than 10% of women have been screened for cervical cancer, with 11.9 Crude cervical cancer incidence per 100,000 women (WHO, 2021).

Screening is a critical intervention for women at risk of developing cervical cancer (WHO, 2020). It is not undertaken to diagnose the disease but to identify individuals with a high probability of having or developing it at the precancerous stage. The individual may feel perfectly healthy and see no reason to visit a health facility. Meanwhile, preventing the incidence of cancer caused by Human papillomavirus infection can significantly reduce the incidence of cervical cancer and the burden of the sickness on women, families, and the nation at large (Jassim *et al.,* 2018). Different screening programmes can detect precancerous changes to prevent disease development and curb its serious consequences. Some of these programmes include visual methods such as Pap smear or Visual Inspection with Acetic Acid (VIA), Visual Inspection with Lugol's Iodine (VILI), care Human Papillomavirus (care-HPV), HPV-DNA based screening among many others (Akanbi *et al*., 2015).

Many studies have been carried out in the past on the incidence and prevalence of cervical cancer as well as on the knowledge of women on cervical cancer screening. However, limited empirical evidence exists on the factors influencing cervical cancer screening in Nigeria. Therefore, profiling determining factors influencing cervical cancer screening and uptake of the HPV vaccine can guide necessary public health interventions toward reducing the incidence of cervical cancer among women in Nigeria. The Andersen and Newman Behavioural Model (ANBM) for health service utilisation provide a framework that permits systematic identification of factors that influence individual decisions to use (or not use) available healthcare services (Andersen & Newman, 2005), with the factors being both or either intrinsic or extrinsic. This study, therefore, investigated the factors influencing the uptake of cervical screening and HPV vaccination among female reproductive-age workers in Abuja. The Andersen and Newman Behavioural Model (ANBM) of Health Service Use guided the study.

Methodology

Research Design

This quantitative descriptive cross-sectional design uses a self-administered questionnaire among a population of female workers at the Federal Medical Centre and Gwarimpa General Hospital, Abuja.

Sample and Sampling Technique

Total enumeration was used to sample all the female workers at the hospital facilities. However, 160 female workers gave informed consent to participate in the study and were thus selected for this study. Those who participated were between the reproductive ages of 15 and 49 years old.

Validity and Reliability of Study Instrument

The instrument (questionnaire) was subjected to face, construct, and content validity. The items in the questionnaire were presented to experts in the test and measurement, nursing, and quantitative research fields for review, correction, and appraisal, after which necessary corrections were made. An adequate review of relevant literature ensured the appropriateness of the content in the questionnaire. Reliability was ensured through a pre-test of the study instrument among 23 female reproductive-age workers at Comprehensive Health Center, Aleeta, Abuja. The overall Cronbach Alpha measure was 0.889, which made the items in the questionnaire to be adjudged as reliable.

Method of Data Collection

Clearance was sought from the leadership of the selected medical facility for the study to be conducted. This was preceded by the presentation of ethical approval obtained from the Babcock University Health Research Ethics Committee

(BUHREC) to the hospital administrators at the Federal Medical Centre and Gwarimpa General Hospital, Abuja. After this approval, female workers were directly approached for research participation. Intending participants gave verbal consent and were then served the questionnaire. Only those who willingly provided informed consent participated in the study- this was a total of 160 female workers. Instructions on filling out the questionnaire were provided, and required explanations were given to participants when necessary.

Method of Data Analysis Process

Copies of filled questionnaires were retrieved from the participants, coded, and stored in a passworded computer system. The coded data was processed using the IBM Statistical Package for Social Sciences (SPSS) version 24.0. Descriptive statistics such as frequency counts, percentages, mean, and standard deviation were run, and inferential statistics using bivariate analysis - Chi-square and correlation at 0.05 significance level were done. Results were presented in tables.

Ethical Consideration

Ethical clearance was obtained from Babcock University Health Research Ethics Committee (BUHREC) with reference number BUHREC 0267/21 to ensure the research meets all the national ethical codes of conduct in research involving human participants. Informed consent was obtained from study participants after they had been duly informed of the purpose, risks, benefits, and process of the study. Participants' responses at every phase and their information were kept confidential. Participation in the study was entirely voluntary. Ethics, including respect for persons, autonomy, beneficence, non-maleficence, and justice, were strictly adhered to during the research (Varkey, 2021; Dada et al., 2020). Participants were free to withdraw their participation at any study stage without any consequence.

RESULTS

Respondents' Socio-Demographic Profile.

One hundred sixty reproductive-aged female workers at the Federal Medical Centre Abuja and Gwarimpa General Hospital Abuja participated in this study. The mean respondents' age was 34.4±2.1. The majority (85.0%, 57.5%, and 43.8%) of the respondents were married, Christians, and had at least a degree educational qualification, respectively. Close to half (43.8%) of the respondents earned more than ₦100,000 monthly. The socio-demographic characteristics of participants in this study are presented in Table 1.

Uptake of Cervical Cancer Screening Services and Vaccination

The respondents' uptake of cervical cancer screening and vaccination is presented in Table 2. Almost all, 87.5% of the participants have not taken cervical cancer screening and vaccination. Another 80.6% did not know the benefits and gains of cervical cancer screening and vaccination, while 68.8% felt they did not need CC screening and vaccination.

Knowledge of Cervical Cancer Screening Services and Vaccination

Respondents' level of knowledge of Cervical Cancer (CC) is presented in Table 3. The knowledge level was above average, with a mean score of 9.36(65%) ± 0.66. Many of the study participants knew that cervical cancer could be prevented, can be screened through a pap smear, and is required by all women, whether sexually active or not. Most also knew that if cancer is left untreated, it can spread to other parts of the body and that cervical cancer vaccination can prevent cervical cancer incidence for any woman.

Influence of the Respondent's Level of Knowledge and Uptake of Cervical Cancer Screening Services and Vaccination.

The influence of respondents' level of knowledge and uptake of CC screening services and vaccination was tested using correlation; the significance level was less than 0.05 (p = 0.178). There was, therefore, no significant influence of knowledge of CC screening and vaccination on the level of uptake (see Table 4).

Table 5 revealed the attitude of participants toward the uptake of cervical screening services and vaccination n. Using a 36-point attitude scale, the mean score of 14.5±2.3, which is 39.2% of the total score, was obtained; this can imply that respondents' attitude toward CC screening and vaccination was poor.

Table 1: Socio-Demographic Characteristics of Respondents

N=160

Variables	Response	Frequency	Percentage
Age	15-20 years	20	12.5
	21-26 years	12	7.5
	27-32 years	20	12.5
	33-38 years	34	21.3
	39-44 years	54	33.7
	45-49 years	20	12.5
Marital Status	Married	136	85.0
	Single	24	15.0
Monthly Income	< ₦50,000	40	25.0
	₦50,000 - ₦100,000	50	31.2
	>₦100,000	70	43.8
Ethnicity	Yoruba	60	37.5
	Hausa	50	31.3
	Igbo	40	25.0
	Others	10	6.2
Religion	Islamic	68	42.5
	Christianity	92	57.5
Educational Qualification	Others	19	11.9
	SSCE	10	6.2
	NCE	11	6.9
	Diploma	50	31.3
	Degree	70	43.7

Table 2: Uptake of Cervical Cancer Screening

N= 160

ITEMS	Yes (%)	No (%)
I have taken cervical screening and vaccination.	20 (12.5)	140 (87.5)
I understood what I stood to gain in cervical screening and vaccination, so I went for it	31 (19.4)	129 (80.6)
Information from friends said the procedure is painful, but I still went for it	10 (6.3)	150 (93.8)
I am a childbearing mother, and I need cervical screening and vaccination, so I went for it	50 (31.3)	110 (68.8)

Table 3: Knowledge of CC Screening Services and Vaccination

N= 160

ITEMS	Yes (%)	No (%)
Cervical cancer can be prevented	140 (87.5)	20 (12.5)
The best way to prevent cervical cancer is through a pap smear and vaccination.	100 (62.5)	60(37.5)
Cytology is another screening test for cervical cancer	143 (89.4)	17 (10.6)
The screening is for all women, whether sexually active or not	136 (85.0)	24 (15.0)
Cervical cancer can be treated and cured if detected early	141 (88.1)	19(11.8)
Visual inspection with acetic acid or Lugols Iodine is another means of cervical cancer screening.	142 (88.8)	18 (11.3)
The cervix may be pierced with a sharp instrument when collecting cervical swabs.	130 (81.3)	30 (18.7)
If cancer is left untreated, it may spread within the body	186 (93.0)	14 (7.0)
Cancer is one of the leading causes of high death in Nigeria	129 (80.6)	31 (19.4)
CC screening is a form of treatment for nursing mothers	138 (86.3)	22 (13.7)
CC screening could also detect other types of cancer	140 (87.5)	20 (12.5)
CC screening can help detect cancer early	141 (88.1)	19(11.8)
Vaccination can help prevent cervical cancer	144 (90.0)	16(10.0)

Table 4. Influence of the Respondent's Level of Knowledge and Uptake of Cervical Cancer Screening Services and Vaccination.

		Uptake of cervical cancer screening services and vaccination
Knowledge of cervical cancer screening services and vaccination	Pearson Correlation	**0.107**
	Level of significance	**0.178**
	Number of participants	**160**

Table 5. The Attitude of Female Workers Towards the Uptake of Cervical Screening Services and Vaccination

N= 160

ITEMS	Strongly Agree (%)	Agree (%)	Disagree (%)	Strongly Disagree (%)
There is nothing like cervical cancer. It does not exist.	4 (2.5)	16 (10.0)	50 (31.3)	90 (56.3)
I like to go for cervical cancer screening regularly.	3 (1.9)	40 (25.0)	108 (67.5)	9 (5.6)
I like to be vaccinated against cervical cancer.	0 (0.0)	40 (25.0)	100 (62.5)	20 (12.5)
Vaccination could prevent the occurrence of cancer.	8 (5.0)	100(62.5)	52 (32.5)	0 (0.0)
Cervical cancer is a disease of the rich	0 (0.0)	2 (1.3)	50 (31.3)	108 (67.5)
If it is free, I would be interested in cervical cancer screening	0 (0.0)	28 (17.5)	124 (77.5)	8 (5.0)

Table 6: Factors Influencing Uptake of Cervical Cancer Screening Services and Vaccination

	Uptake of cervical screening and vaccination	
	X^2	*P*
Variable		
Age	15.71	0.002
Marital Status	8.70	0.001
Monthly Income	13.44	0.000
Ethnicity	19.73	0.068
Religion	3.67	0.006
Screening cost	13.14	0.000
Availability of services	12.99	0.001
Educational Qualification	2.38	0.002

Discussion of Findings

Findings from this study have revealed good knowledge, poor attitude towards CC screening and vaccination, and a low level of uptake of CC screening and vaccination. This is contrary to the study by Olubodun *et al*. (2019) among women residing in an urban slum in Lagos, Nigeria, where knowledge about cervical cancer screening and vaccination was poor, and attitude was exemplary. This observed difference in knowledge and attitude may be due to the variance in the socio-demographics of the participants in the two studies. The observed low level of uptake of cervical cancer screening services and vaccination among participants in this study is similar to a study by Anyebe *et al.* (2014) among nurses where the study participants were knowledgeable about cervical cancer but were not willing to screen for cervical cancer or take the vaccine. This low level of uptake further points to the need for more effort at encouraging women to uptake CC screening and vaccination. Findings also revealed that the excellent knowledge documented could not influence participants' level of uptake of cervical cancer screening and vaccination. In consonance with this finding is the result of the study conducted by Dim et al. (2016), where many participants were aware of cervical cancer screening, but less than 20% utilised any screening service. This showed that increased awareness of Pap smears did not translate to utilisation or uptake of screening services like in a similar study on healthy practice, where knowledge could not translate to practice (Dada et al., 2021). A similar study by Oche et al. (2013) among female health workers at Usman Danfodiyo University Teaching Hospital, Sokoto, revealed that, despite the excellent knowledge of respondents about cervical cancer screening, only 10% had ever done the screening. With the poor attitude documented in this study, the findings supported the study of Heena *et al*. (2019) in Saudi Arabia, where poor attitude and low uptake of pap smear were documented and where the attitude was shown to influence the level of uptake of CC screening and vaccination among women of reproductive age. This also corroborated the study by Ogunbode and Ayinde (2015), where attitudinal disposition influences the uptake of cervical cancer screening.

Age, the cost of screening and vaccines, availability of service, economic status of the individual, and level of education were identified as factors influencing the uptake of CC screening and vaccination. These were like the study in Ethiopia, South Africa, and Portland, Jamaica (Peltzer & Phaswana-Mafuya, 2014; Ncube et al., 2015; Woldetsadik et al., 2020). Therefore, with the rise in cervical cancer incidence and mortality in Nigeria and poor attitude and low uptake of CC screening and vaccination, efforts at changing attitude towards CC screening become more imperative. This is critical because of the limited infrastructure for effectively treating invasive cervical cancer in Nigeria, mainly when diagnosed in the late stages. The screening uptake among women could improve if their knowledge and attitudes translate into knowledge.

Conclusion

This study has shown that knowledge did not translate into the uptake of cervical cancer screening among study participants. Other factors, which include the cost of screening and vaccines, availability of service, age, economic status of the individual, and level of education, were responsible.

Recommendation

Multi-dimensional approaches toward addressing limiting factors to the uptake of cervical cancer screening and vaccination should be encouraged. Making screening facilities available and at a subsidised rate may encourage increased uptake. Continuous public health education and enlightenment are also recommended.

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