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Research Article

Knowledge of Human Papilloma Virus Self-sampling and Cervical Cancers Screening Uptake among Gynaecology Clinic Attendees in a Tertiary Hospital in Nigeria

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ABSTRACT

Cervical cancer remains a significant contributor to global cancer-specific morbidity and mortality, despite being one of the most preventable and treatable cancers. Uptake and knowledge of cancer screening has remained low in developing countries. Therefore, this study investigated the level of knowledge Human Papilloma Virus (HPV) Self-sampling and Cervical cancers screening uptake among gynaecology clinic attendees in Obafemi Awolowo University Teaching Hospitals Complex, Ile-Ife, Nigeria. A cross-sectional design was employed in the study. A total of 256 respondents were selected using simple random sampling technique from two tertiary institutions in Osun State, Nigeria. A semi-structured questionnaire was used to collect data on the knowledge of HPV Self-sampling and cervical screening uptake from the respondents. Data were analysed and presented in percentages and association between variables were tested with logistic regression, chi-square and fisher's exact test at 0.05 level of significance. The mean age of the respondents was 35.8 ± 9.7 years, age of sex initiation for almost half (48.2%) of the respondents was between 21 and 25 years. Also, 66% of the respondents had not been screened of cervical cancer and 62.9% do not have enough education on self-sampling. However, 75.4.0% had poor knowledge on HPV self-sampling while 21.5% believed only sexually active women can only engage in self-sampling. There was a significant association between socio-demographic, utilisation and knowledge of self-sampling for HPV. The study revealed poor knowledge on Human Papilloma Virus self-sampling and low screening uptake. Therefore, there is a need to strengthen the self-sampling knowledge among women for future screening.

Keywords: *Human Papillomavirus, Self-Sampling, Knowledge, Utilization, Cervical Cancer Screening.*

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INTRODUCTION

Cervical cancer remains a significant contributor to global cancer-specific morbidity and mortality, despite being one of the most preventable and treatable cancers (Ferlay et al., 2015). Globally, an estimate of 570,000 cases of cervical cancer and 311,000 deaths in 2018, which is the fourth most frequently diagnosed cancer, the fourth commonest cause of cancer death in women and eighty percent of these cases occurring in low- and middle-income countries (Bray, 2018). Early screening may reduce the disease, but due to economic status and lack of an adequate screening programme combined with women's own personal obstacles to screening, total coverage remains poor (Nahvijou, et al., 2014).

Meanwhile, Good knowledge and awareness of cervical cancer will help in ensuring that the disease burden does not

increase. Several studies have been done in other developing countries to measure the knowledge on cervical cancer and to study the extent of utilization of the screening methods (Mbamara et al., 2017; Jassim, Obeid, and Al-Nasheet, 2018). Cervical cancer screening (CCS) participation remain low in developing countries and is expected to be much lower in low resource setting as a result of poor knowledge on the disease (Min-Son, Kui, Spring, Park and Park, 2009; Wong, et al. 2018).

On the other hand, Self-collection of vaginal samples for HPV testing has been investigated as a potential cervical screening method in several populations, with good uptake (Gupta et al., 2018). The testing of Human papillomavirus (HPV)-DNA combined with self-sampling could increase cervical cancer screening effectiveness, utilizing a sensitive

screening modality and an easy sampling method with minimal pain or discomfort. Self-sampling acceptability, though, is pivotal (Chatzisstamatiou, et al., 2020). However, educational programs are needed to network acknowledged knowledge gaps and boost of consistent practice of cervical cancer screening in women. Although some studies report that even providing of screening opportunities to women may not be utilized well due to some barriers such as fear of positive cervical cancer diagnosis, fear of cervical screening, and vaginal examination (Lim and Ojo, 2017).

According to a study, the analysis of the frequency of screening service utilization among the respondents who reported such utilization revealed that more than half used these services annually (Ilesanmi and Kehinde, 2018). However, this study aims to investigate the level of utilization of cervical cancer screening services and knowledge of HPV self-sampling among women attending gynaecology clinic in Obafemi Awolowo University Teaching Hospitals Complex, (OAUTHC) Ile-Ife, Osun State.

MATERIALS AND METHODS

Study Design: A descriptive cross-sectional survey design was employed for the study among women attending gynaecology clinic in OAUTHC, Ile Ife and Wesley Guild Hospital, Ilesa Osun State .

Study Setting: The study was conducted at the Obafemi Awolowo University Teaching Hospitals Complex (OAUTHC) in Ile-Ife, Osun state, Nigeria. It has two major Hospital facilities (Ife Hospital Unit, Wesley Guild Hospital Unit Ilesa) and three primary health care centres at two urban centres and one rural, Ife (Comprehensive Health Centre Eleyele), Ilesa (Multipurpose Maternal and Child Health Centre), and Imesi-Ile (Rural Comprehensive health Centre) respectively. Services available include endoscopy, dialysis, open heart surgery, plastic surgery, Computed Tomography (CT) scanning, Magnetic Resonance Imaging (MRI), family planning, oncology, cervical cancer screening. The two major hospitals were selected because of the availability of screening services of cervical cancers.

Study Population: This study was carried out among women attending gynaecology clinic in the branches of a major tertiary institution in Ile-Ife, Osun State.

Inclusion Criteria: Women between the age of 25-65 years, those who attends the gynaecology clinics regularly in Obafemi Awolowo University Teaching Hospitals Complex, Ile Ife, Osun State.

Sample Size Determination: The sample size for the respondents was calculated using Leslie Kish formula. A total of 256 formed the sample size. Simple random sampling techniques through balloting were used to select the respondent for the study.

Instrument for Data Collection: A semi-structured questionnaire consisting of six sections and fifty eight (58) items designed from reviewed lieterature was used for data collection. Section A: Socio-demographic characteristics of the study respondents. Section B: Knowledge on human

papillomavirus self-sampling. Section C: Perception on human papillomavirus self-sampling. Section D: Acceptability of human papillomavirus self-sampling. Section E: Utilization of various cervical cancer screening services. Section F: Factors influencing the acceptability of human papillomavirus self-sampling.

Validity and Reliability of the Instrument: Validity of the instrument was ensured by revising relevant literatures while developing the instrument, it was also subjected to scrutiny by experts and the supervisor who validated the instrument, the instrument was edited with useful corrections and suggestions before the actual administration of the questionnaire to the study participants. Content validity of the instrument was also achieved through the cooperation of preliminary pretested questionnaire interview result and all items of the questionnaire were compared with similar studies and by matching them with stated objectives, research questions and set hypothesis, however, the questionnaire was administered in another area among similar respondents having similar socio-demographic characteristics with the main study area, then their response was compared, examined and analyzed.

The instruments were pretested using 10% of the sample size which was among a similar population group of twenty-six women in University College Hospital, Ibadan attending gynaecology clinic, this serves as a pilot study for the data collection procedure. The test retest questionnaire was made to undergo Cronbach Alpha measurement, and a reliability coefficient of 0.7 and above made the instrument reliable. This helped in establishing the reliability of the instrument and determined problem that needed to be overcome during the main data collection process.

Data Collection Procedure: A quantitative method of data collection was used with the aid of a semi-structured questionnaire for this research which was administered over two months' period. The interviewer-administered questionnaire was numbered serially. Ethical approval was submitted to heads of each clinic, the eligible respondents were selected from the gynaecology clinics of the two hospitals, as they wait at the waiting room of the clinic.

Respondents were intimated about the freedom to withdraw their consent freely at any point during the study. Confidentiality of each participant was maximally maintained during and after the collection of their information. Written informed consent was attached to the questionnaires. The questionnaire took approximately 25 minutes to complete and collected at any day of the clinic within two months. Questionnaire was translated to local language and properly administered by the researcher and the research three assistants (newly qualified nurses) to ensure correct interpretation of questions and understanding by respondents who are not literate, completeness and errors were checked correctly before leaving the clinic. Information gathered from the respondents was stored in the computer for analysis by the researcher while copies of the filled instruments were kept for maximum safety.

Data Management and Analysis: All completed copies of the questionnaire were checked for completeness and consistency of variables.

The questionnaire used was manually sorted out before the information supplied therein was entered into the computer IBMS SPSS software version 25 was used as the analysis tool for the data collected. Descriptive statistics was used to analyse the data frequency and presented in tables and charts while Chi-square/Fisher's test at 0.05 level of significance was used for hypothesis. Also, logistic regression was used to predict factors affecting knowledge.

Ethical Considerations: Ethical approval was obtained from Ethics and Research Committee of Obafemi Awolowo University Teaching Hospitals Complex, with protocol number **ERC/2021/08/12**. Written Informed consent was obtained from the respondents, those who are literate signed while the illiterates thumb printed the form. Respondents were intimated about the freedom to withdraw their consent freely at any point during the study. To ensure the confidentiality of research respondents, identifiers such as names and other information that can reveal the identity of research respondents was not included in the research instruments. The nature of the study, benefits and objectives were explained to the respondents, and they were assured that the information given will be treated with the utmost confidentiality.

RESULTS

Socio-Demographic Characteristics of Respondents: The mean age of respondents was 35.8±9.7 years where half of the respondents 128 (50.0%) were between the age of 26 and 35 years and most of the respondents 213 (82.8%) were Christians. Only few 5 (2.0%) had no formal education and unemployed 19 (7.4%). Majority of the respondents 235 (91.8%) were married and 61 (29.0%) earned above 50,000 to 100,000 naira (Table1).

Most of the respondents 212 (83.2%) were in monogamous family, many 188 (73.4%) had between one and three children, while almost half 119 (48.0%) married between the ages 21 and 25 years and duration of marriage of many (64.1%) was just within 10 years. Age of sex initiation for almost half of the respondents 122 (48.2%) was between 21 and 25 years with many 203 (79.3%) had just between one or two sexual partners as seen on Table 2.

Knowledge on Human Papillomavirus Self-Sampling.: The mean knowledge score of respondents was 2.5±2.5. Many 75.4% had poor knowledge and only 24.6% had good knowledge on human papillomavirus self-sampling (Fig 1). Some of the respondents 105 (41.0%) mentioned multiple sexual partners as risk factors for cervical cancer, and majority 130 (87.2%) agreed self-sampling helps to detect cervical cancer early. Some 32 (21.5%) said only sexually active women can only engage in self-sampling, but many 109 (73.2%) said self-sampling can be conveniently done at home, while all of the respondents 149 (100%) did not know the appropriate age to start self-sampling screening method and many 119 (79.9%) agreed that HPV test sensitivity and specificity using a vaginal sample, taken by the patient, is similar to that taken by a health provider (Table 3).

Table 1
Socio-Demographic Characteristics of Respondents (n=256)

Variable	Response	F	%
Age group (years)	25 years and below	27	10.5
	26 - 35 years	128	50.0
	36 - 45 years	62	24.2
	46 - 55 years	26	10.2
	56 years and above	13	5.1
Religion	Christianity	212	82.8
	Islam	44	17.2
Highest Level of Education	No Formal Education	5	2.0
	Primary	17	6.6
	Secondary	63	24.6
	Tertiary	171	66.8
Occupation	Employed	94	36.7
	Self-employed	77	30.1
	Trader	29	11.3
	Student	20	7.8
	Unemployed	19	7.4
	Retired	10	3.9
	Artisan	7	2.7
	Widow	9	3.5
Marital Status	Single	8	3.1
	Married	235	91.8
	Separated	3	1.2
	Divorced	1	0.4
	Widow	9	3.5
Monthly Earnings	50000 and below	51	24.3
	Above 5000 – 100000	61	29.0
	Above 100000 – 150000	52	24.8
	Above 150000	46	21.9

F = frequency; % = percentage

Table 2:
Marital and Sexual Characteristics of Respondents (n=256)

Variable	Response	F	%
Type of marriage	Monogamy	213	83.2
	Polygamy	43	16.8
Number of Children	No child	35	13.7
	1-3	188	73.4
	4-6	33	12.9
Age of marriage	20 years and below	22	8.8
	21 - 25 years	119	48.0
	26 - 30 years	97	39.1
	31 years and above	10	4.0
Duration of marriage (n=248)	1 - 10 years	159	64.1
	11-20 years	50	20.2
	21 – 30 years	25	10.1
	31 years and below	14	5.6
Age of sex initiation	20 years and below	91	36.0
	21 - 25 years	122	48.2
	26 - 30 years	37	14.6
	31 years and above	3	1.2
Lifetime number of sexual partners	1 – 2	203	79.3
	3 – 4	45	17.6
	5 and above	8	3.1

F = frequency; % = percentage

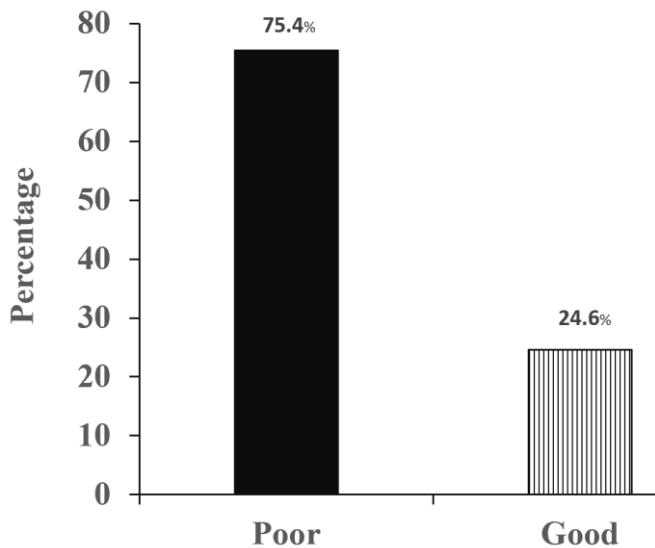


Figure 1. Respondents Level of Knowledge on Human Papillomavirus Self-Sampling

Table 3. Knowledge on Human Papillomavirus Self-Sampling (n=256)

Variables	Response	F	%
Risk Factors for cervical cancer*	Multiple sexual partners	105	41.0
	Infection/HPV/STI	80	31.3
	Hereditary	71	27.7
	Lifestyle/smoking	38	14.8
	Obesity	27	10.5
	Old age	19	7.4
	Abortion/Contraception	19	7.4
	Brush	21	25.0
	Sample Bottle	14	16.7
	Cusco Speculum	5	6.0
	Film Plate	2	2.4
Self-sampling help to detect cervical cancer early	Yes	130	87.2
	No	19	12.8
Only sexually active women that can only engage in self-sampling	Yes	32	21.5
	No	117	78.5
Self-sampling can be conveniently done at home	Yes	109	73.2
	No	40	26.8
Appropriate age to start self-sampling screening method	21 years	3	2.0
	30 years	6	4.0
	Others (Incorrect answer)	111	74.5
	Don't know	29	19.5
HPV test sensitivity and specificity using a vaginal sample, taken by the patient, is similar to that taken by a health provider	Yes	119	79.9
	No	22	14.8
	Don't know	8	5.4

* Multiple Response

Utilization of Various Cervical Cancer Screening Services: Many of the respondents 148 (65.5%) had not been screened for cervical cancer in which the reason for some of them 59 (39.9%) was inadequate knowledge about cervical screening. However, among those that had gone for the screening, half of

them 39 (50.0%) were between the ages of 31 to 40 years while many 57 (73.1%) had the test just once. According to the respondents, slightly more than half of them 42 (53.8%) had Pap smear test and majority 67 (85.9%) had normal result. Majority had never been vaccinated for HPV 207 (91.6%), also 203 (89.8%) were not aware of any of their family members diagnosed with cervical cancer, many 173 (76.5%) did not think they are at risk of having cervical cancer, but more than half 149 (58.2%) plan to have the cervical screening test done soon (Table 4).

Table 4: Utilization of Various Cervical Cancer Screening Services (n=256)

Variables	Response	F	%
Ever been screened for cervical cancer (n=226)	Yes	78	34.5
	No	148	65.5
Reason for not undergoing any cervical cancer screening (n=148)	Lack of knowledge about cervical screening tests	59	39.9
	Not being sick	22	14.9
	Always being busy	14	9.5
	Afraid	12	8.1
	Having no pain	11	7.4
	Shy	4	2.7
	No reason	26	17.6
Age at the time of first screening (n=78)	20 years and below	2	2.6
	21 – 30 years	24	30.8
	31 - 40 years	39	50.0
	41 - 50 years	12	15.4
	50 years and above	1	1.3
Number of times screened of cervical cancer (n=78)	1	57	73.1
	2	19	24.4
	3	2	2.6
Type of screening method utilized (n=78)	Acetic acid/ Lugol's Iodine test	17	21.8
	Pap Smear	42	53.8
	hrHPV test	3	3.8
	Don't know	16	20.5
	Result of the test (n=78)	Normal result	67
	Abnormal Result	11	14.1
Ever been vaccinated for HPV (n=226)	Yes	19	8.4
	No	207	91.6
Aware of any family members diagnosed with cervical cancer (n=226)	Yes	23	10.2
	No	203	89.8
Risk of having cervical cancer (n=226)	Yes	53	23.5
	No	173	76.5
Plan to have a cervical cancer screening test done soon	Yes	149	58.2
	No	107	41.8

Association between cervical cancer screening and knowledge on Human Papillomavirus Self-Sampling: Chi Square analysis revealed that there was significant association between screening for cervical cancer and knowledge on human papillomavirus self-sampling with p value of 0.024. (Table 5). This revealed that most respondents who do not go for cervical screening had poor knowledge on human papillomavirus self-sampling.

Table 5:

Association between cervical cancer screening and knowledge on HPV Self-Sampling

Variables	Level of Knowledge		df	X ²	p-value
	Poor (%)	Good (%)			
Cervical cancer Screening					
Yes	49 (62.8)	29 (37.2)	1	5.128	0.024**
No	114 (77.0)	34 (23.0)			

** Statistically Significant

Table 6:

Socio-Demographic and knowledge on Human Papillomavirus Self-Sampling

Variables	Level of knowledge		df	F ⁱ	p-value
	Poor (%)	Good (%)			
Highest Level of Education					
No Formal Education	5 (100.0)	0 (0.0)			
Primary	16 (94.1)	1 (5.9)	3	8.410	0.030**
Secondary	52 (82.5)	11 (17.5)			
Tertiary	120 (70.2)	51 (29.8)			
Occupation					
Employed	60 (63.8)	34 (36.2)	6	16.723	0.007**
Retired	6 (60.0)	4 (40.0)			
Self-employed	61 (79.2)	16 (20.8)			
Unemployed	16 (84.2)	3 (15.8)			
Student	18 (90.0)	2 (10.0)			
Artisan	5 (71.4)	2 (28.6)			
Trader	27 (93.1)	2 (6.9)			
Type of Marriage					
Monogamy	152 (71.4)	61 (28.6)	1	11.096	<0.001**
Polygamy	41 (95.3)	2 (4.7)			
Monthly Earnings					
50000 and below	48 (94.1)	3 (5.9)	3*	25.468	<0.001**
50001 – 100000	48 (78.7)	13 (21.3)			
100001 – 150000	31 (59.6)	21 (40.4)			
Above 150000	26 (56.5)	20 (43.5)			

*X² - Chi square; ** Statistically Significant

Table 7:

Factors influencing knowledge on Human Papillomavirus Self-Sampling

Variables	Sig.	OR	95% Confidence Interval	
			Lower Bound	Upper Bound
Occupation				
Employed (Ref)	-	-	-	-
Retired	0.811	1.176	0.310	4.463
Self-employed	0.029**	0.463	0.232	0.925
Unemployed	0.096	0.331	0.090	1.218
Student	0.036**	0.196	0.043	0.897
Artisan	0.687	0.706	0.130	3.837
Trader	0.008**	0.131	0.029	0.584
Type of marriage				
Monogamy(Ref)	-	-	-	-
Polygamy	0.004**	0.122	0.029	0.518
Monthly Earnings				
50000 and below(Ref)	-	-	-	-
50001 - 100000	0.029**	4.333	1.160	16.182
100001 - 150000	0.000**	10.839	2.980	39.424
Above 150000	0.000**	12.308	3.341	45.340
Screened for cervical cancer				
No (Ref)	-	-	-	-
Yes	0.025**	1.984	1.091	3.608

Ref - Reference group

Association between selected socio-demographic characteristics of respondents and knowledge on Human Papillomavirus Self-Sampling: Fisher’s Exact analysis revealed that there was significant association between selected Socio-demographic characteristics of respondents which include highest level of education, occupation, type of marriage and monthly earnings and knowledge on human papillomavirus self-sampling with p value of 0.007, <0.001,

and <0.001 respectively (Table 6). This revealed that most of the respondents of diverse socio-demographic characteristics had more poor knowledge on human papillomavirus self-sampling.

Factors Influencing knowledge on Human Papillomavirus Self-Sampling: Logistic regression analysis revealed that respondents who are self-employed, student, traders and in polygamous family are 53.7%, 80.4%, 86.9% and 87.8%

times respectively less likely to have good knowledge on Human Papillomavirus Self-Sampling, respondents (OR=0.463, p=0.029, CI: 0.232-0.925; OR=0.196, p=0.036, CI: 0.043-0.897; OR=0.131, p=0.008, CI: 0.029-0.584; OR=0.122, p=0.004, CI: 0.029-0.518 respectively). However, respondents that earns ₦500001 – ₦100000, ₦100001 – ₦150000 and above ₦150000 are 4.3%, 10.8% and 12.3% more likely to have good knowledge (OR=4.333, p=0.029, CI: 1.160-16.182; OR=10.839, p=0.000, CI: 2.980-39.424; OR=12.308, p=0.000, CI: 3.341-45.340 respectively). Also, respondents who had screened for cervical cancer are 2 times more likely to have good knowledge on Human Papillomavirus Self-Sampling (OR=1.984, p=0.025, CI: 1.091-3.608) (Table 6).

DISCUSSION

The mean age of respondent was 35.8±9.7years close to the mean age in the study by Abdullah *et al.* (2018) in Malaysia with a mean age of 40.6±8.4 years. Most of the respondents were Christians similar to a study by Awodele *et al.* (2011) in Lagos which is expected as Christianity is also a major religion in the country. Only few of the respondents had no formal education similar to a study by Akinlaja and Anorlu (2014) in Lagos and unemployed in same pattern to a study by Osuchukwu (2019) which is also a study in Nigeria and this could be due to similar country which makes it a good representation of country. Majority of the respondents were married as expected due to mean age of the respondent above the marriage age in the country, and most were in monogamy in similar pattern to a study by Meenu and Heera (2018) a study conducted in Nepal. Many had between one and three children consistent with a Nigeria study by Olowokere and Ojo (2014). Mean age of sex initiation of respondents was 22.4±3.3years in proximity to 24.8±4.8 years from another study conducted in the South-western region of the country by Awodele *et al.* (2011) and this could have caused the similarity in the result. More than half had just between one or two lifetime sexual partners in contrast to the study by Marks *et al.* (2015) where less than half of the respondents had between one or two lifetime sexual partner as this could be because of the prospective nature of the study and also recall bias could set in not reflecting the actual number of sex partners.

Many of the respondents had not been screened for cervical cancer proximal to the study by Olowokere and Ojo (2015) in same study area, Ile Ife, it was reported that most women in this study had never been screened for cervical cancer and which the reason for almost half of them was inadequate knowledge about cervical screening as revealed in a study that almost half of the respondents had fair knowledge (Ahmed *et al.*, 2013). However, among those that had gone for the screening, half of them were between the ages of 31 - 40 years contrary to a study by Kileo *et al.* (2015) in Tanzania which state that self-reported utilization of cervical cancer screening services was highest among those aged 20–29 years and this could be as result of variation in age group captured also cervical cancer awareness variation in different country. Many had the test just once in contrast to a study where about half had the screening did the test once (Ilesanmi and Kehinde,

2018), also, slightly more than half of the respondents had pap smear test contrary to same study where less than half had pap smear however, the study was done among female sex workers in a brothel which may not necessarily see the need to undergo the screening. Majority had never been vaccinated for HPV in line with a study in Lagos by Oluwole *et al.* (2019). Most were not aware of any of their family members being diagnosed with cervical cancer as they might prefer to make it personal to them to avoid stigmatization which many did not think they are at risk of having cervical cancer supported by previous findings as it was reported that women choose not to attend cervical screening, as long as they feel healthy Oscarsson, Wijma and Benzein (2008) but more than half plan to have the cervical screening test done soon.

Most of the respondents had poor knowledge on self - sampling which could be as result of the fact that the sampling method is not yet well established and well known in the country as it is just in the adoption phase. Majority of the respondents had heard about cervical cancer, this result however, is not in line with the study by Ayinde and Omigbodun (2003) in Ibadan where low levels of awareness of cervical cancer was reported in which some of them has not heard about human papillomavirus self-sampling because it's a new method for adoption and also the level of awareness of self-sampling is close to nill in the country (Balogun *et al.*, 2012). According to many, they got their information from health workers which happen to be a reliable source of information and some mentioned multiple sexual partners as risk factor for cervical cancer base on the information they had gotten from their sources. Slightly more than half of the respondents correctly mentioned human papillomavirus as what the self-sampling screen for while half of the respondents mentioned swab as device used for sample collection, where all these were based on the information they got and the little knowledge and majority agreed self-sampling helps to detect cervical cancer early which is a reflection of the positive perception towards self-sampling among them. Almost all the respondents didn't know the appropriate age to start self-sampling screening method as expected due to poor knowledge on self-sampling.

However, there was significant association between screening for cervical cancer, taking HPV vaccine and knowledge on human papillomavirus self-sampling, however, this is a great discovery as there is dearth of literature showing clearly how screening for cervical cancer could influence knowledge on human papillomavirus self-sampling. This shows that people that go for cervical screening and takes HPV vaccine tend to have more knowledge on human papillomavirus self-sampling than others.

In conclusion, there is underutilization of cervical screening services and lack of adequate knowledge on cervical screening methods and services according to this study. However, many had poor knowledge on human papillomavirus and utilization of other cervical screening services have effect on knowledge of HPV Self-Sampling as well as level of education, occupation, type of marriage and monthly earnings.

However, there is a need to strengthen the self-sampling knowledge among women by conducting health education; policy makers need to plan appropriate activities and strategies

to promote programs that educate women about HPV self-sampling for cervical screening, Efforts should be made to ensure all women have access to relevant information to enable a fully informed choice on cervical screening.

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