



## Knowledge and Acceptance of Self Sample Collection for Cervical Cancer Screening among Female Staff of Babcock University, Ilishan-Remo, Ogun State, Nigeria

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### Abstract

Cervical cancer is one of the leading causes of cancer-related deaths among women but screening helps in early recognition and diagnosis of the condition. The method involved in collecting the sample for cervical cancer screening has been a major problem affecting the acceptance of the screening process. This study assessed the knowledge and acceptance of self-collection vaginal samples for cervical cancer screening among the female staff of Babcock University. A non-experimental research design was employed to recruit participants for the study. The sample size was determined using the Taro Yamane formula and a total of 220 women were recruited for the study using a convenient sampling technique. A self-structured questionnaire was used in gathering data for the study. Data were analyzed through descriptive and inferential statistics. Findings from the study showed that the mean age of respondents was 21.8 years. Almost half (45.5%) of the respondents had good knowledge of self-sample collection method of the screening while 74.5% are ready to accept self-sample collection method for cervical cancer screening. There was no significant association between the knowledge and the acceptance of self sample collection method for cervical screening. Willingness to accept self-sample collection was high despite the low percentage of respondents with good knowledge about self-collection. Health workers should be proactive in educating women about self-collection.

**Keywords:** *Cervical cancer, Cervical Cancer Screening, and Self-Sample Collection.*

### Introduction

Cervical cancer accounts for the death of about 250,000 women worldwide each year and is currently the fourth most common cancer in women worldwide (World Health Organization(WHO), 2018). Morbidity and mortality associated with cervical cancer have increased over the years as deaths resulting from cervical cancer is now the leading cause

of cancer-related deaths in women (WHO, 2020). It affects both low and middle-income countries.

Cervical cancer is the second most common type of cancer in Nigeria (Bray & Ren 2013). The incidence and mortality rate from cervical cancer has drastically reduced in most

developed countries due to effective screenings.

A study conducted in 2013 by Ahmed, Sabitu, Idris, and Ahmed on the knowledge, attitude, and practice of cervical cancer screening among market women in Zaria, Nigeria showed that only 43.5% of the respondents exhibited fair knowledge on the knowledge of cervical cancer screening.

The knowledge that continuous infection with Human papilloma virus is the main cause of the development of cervical cancer has brought about series of primary and secondary prevention of cervical cancer and has aided early detection of cervical cancer (Arbyn, Weiderpase, Bruni, Sanjose, Saraiya, Ferlay & Bray 2019).

Organized screening programs have reduced the incidence and mortality from cervical cancer, as most cases of cervical cancer develop in unscreened or under-screened women. The uptake of cervical cancer screening in Nigeria is still low and when screening programs are absent or ineffective, morbidity and mortality associated with cervical cancer tend to increase (Oluwole, Mohammed, Akinyinka & Salako 2017).

Pap smear, the currently most common screening test in developed countries, is too expensive and requires qualified pathologists to evaluate the results (Catarino, Petignat, Dongui, & Vassilakos, 2015). Apart from the cost, the sample collection procedure involves intruding into the privacy of the women which makes the method not to be welcomed by many women.

Some other factors have been identified as barriers to the participation of women in cervical cancer screening programs such as gender of medical personnel, culture, feeling of embarrassment, pain experienced during the procedure of Pap smear, and ignorance (Jia, Li, Yang, Zhou, Xiang, Hu & Feng, 2013).

A prospective solution to these barriers is the advent of self-sample collection for cervical

cancer screening. This screening method may facilitate access to easy cervical cancer screening if the prospective users have good knowledge, perception, and acceptance of the use of this screening method.

Human Papillomavirus (HPV) self-collection as an alternative screening tool for cervical cancer. It is the process whereby a woman who wants to know whether she has HPV infection uses a kit to collect a cervico-vagina sample, which is sent to the laboratory for analysis. Collection methods include lavage, brush, swabs and vagina patch (Ping, Kennedy, Vuyst, & Narasimhan, 2018)

Self-collection samples can be used for the HPV screening thereby providing sensitivity, accuracy, and specificity in testing and breaking the barrier to screening (Arbyn & Verdoodt, 2014).

Self-collected samples for HPV testing might be a better approach in areas where cultural barriers may be used to limit the use of routine pap smear. This self-sampling strategy may be important as an alternative for cervical cancer screening possibly increasing participation in primary screening and follow up.

The introduction of a new screening test is a delicate process and before implementing a new screening program, women's knowledge and the acceptability of the screening test should be explored. Hence, this study assessed the knowledge and acceptance of self-sample collection for cervical cancer screening as an alternative to other routine hospital-based screening methods among female staff of Babcock University, Ilishan- Remo, Ogun State, Nigeria.

### **Research Questions**

1. What is the level of knowledge of the female staff of Babcock University concerning self-sampling for cervical screening?
2. What is the level of acceptance of self-sampling for cervical cancer

screening among the female staff of Babcock university?

### **Hypothesis**

H<sub>0</sub>: There is no significant association between the knowledge of the self-sample collection and the acceptance of self-sample collection for cervical cancer screening among female staff of Babcock University

### **Methods**

**Research Design:** The study employed a survey which is a non-experimental research design to gather data from respondents on the level of knowledge and acceptance of self-sampling.

### **Population**

The population for the study were female staff (teaching and non-teaching staff) of Babcock University who were ready to respond to the instrument for data collection. The number of the teaching staff was 171 while the number of non-teaching staff was 221. The total number of female staff was 392 (Human Resources Department, Babcock University).

### **Sample Size and Sampling technique**

The sample size for the survey was calculated using Taro Yamane formula (1967) with a 95 % confidence interval.  $N = \frac{N}{1 + N(e)^2}$ , n = 197.9.

To take care of the attrition rate, 10% was added to the sample size. Hence, a total of 220 copies of questionnaire were administered to the respondents. Convenient sampling technique was used in determining the number of respondents to recruit from the teaching

and the non-teaching staff. 96 teaching staff and 124 non-teaching staff were conveniently recruited for the study to make a total of 220 female staff for the study. 220 copies of questionnaire were administered and all were successfully retrieved and analyzed.

### **Procedure for Data Collection and Ethical Consideration**

A self-developed questionnaire was used in the data collection process. Ethical approval for the study was sought and gotten from Babcock University Health Research and Ethical Committee (BUHREC265/18). Personal verbal and written consent was also sought from each respondent at the point of collection of the data.

The researchers distributed the questionnaire to all respondents at their various offices and duty posts and waited to retrieve the instruments back immediately after filling by the respondents. 96 copies of questionnaires were administered to the teaching staff while 124 copies of questionnaires were administered to the non-teaching staff conveniently.

### **Validity and Reliability**

Face and content validity of the instrument was determined by the researchers and other experts in the field of nursing, public health and test and measurement. The reliability of the instrument was tested by the split half method. Cronbach's alpha coefficient was 0.82 which was considered reliable enough.

**Results**

**Table 1: Socio-Demographic Data of the Respondents**

Items	Frequency (n)	Percentage (%)
<b>Mean age ± SD 21.8 ± 1.919</b>		
<b>Age distribution</b>		
20-29	128	58.2
30-39	48	21.8
40-49	30	13.6
50 and above	14	6.4
<b>Marital status of respondents</b>		
Single	106	48.2
Married	114	51.8
<b>Highest Educational Qualification</b>		
SSCE O' LEVEL	62	28.2
NCE/OND	21	9.5
BACHELOR'S DEGREE	100	45.5
MASTERS	22	10.0
PhD	15	6.8
<b>Number of Children</b>		
None	108	49.1
1child	55	25.0
2 children	15	6.8
3 children	8	3.6
4 and above	34	15.5

Table 1 shows the frequency distribution for the demographic data of the participants. 128 (58.2%) of the respondents were between ages 20-29 years, 114 (51.8%) of the respondents were married, 100 (45.5%) of the respondents had Bachelor's degrees and 108 (49.1%) of the respondents are yet to give birth.

**Table 2: Knowledge of Self-Sample Collection for Cervical Cancer Screenings**

Items	Frequency (n)	Percentage (%)
Have you heard of cervical cancer screening		
Yes	198	90.0
No	22	10.0
Have you had a cervical cancer screening done in the past 3 years		
Yes	55	25.0
No	165	75.0
Have you heard of self-sample collection for cervical cancer screening		
Yes	106	48.2
No	114	51.8
Have you had any teaching session on self-sample collection by a health worker		
Yes	45	20.5
No	175	79.5
Do you know the benefits of self –sample collection for cervical cancer screening		
Yes	58	26.4
No	162	73.6

Table2 shows that 198 (90%) of the participants have heard about cervical cancer screening though only 55 (25%) of the participants have had cervical cancer

screening done in the past 3 years. 106 (48.2%) of the respondents have heard of self-sample collection for cervical cancer screening. 45 (20.5%) of the respondents have had teaching sessions on self-sample collection by a health

worker and only 58 (26.4%) of the respondents are aware of the benefits of self-sample collection for cervical cancer screening.

**Table 3:** *Acceptance of Self-Sample Collection for Cervical Cancer Screening*

Items	Frequency (n)	Percentage (%)
I would accept and adopt self-sample collection for cervical cancer screening		
Yes	164	74.5
No	56	25.5
I would rather have medical personnel collect my sample for cervical cancer screening		
Yes	105	47.7
No	115	52.3

Table 3 shows that 164 (74.5%) of the respondents are ready to accept and adopt self-sample collection for cervical cancer

screening through close to 105 (47.7%) of the respondents still would rather have medical personnel collect the sample for screening.

**Table 4:** *Level of Knowledge of Self-Sample Collection for Cervical Cancer Screening*

Variable	Frequency (n)	Percentage (%)
Poor knowledge	120	54.5
Good knowledge	100	45.5

Table 4 shows the level of knowledge of the respondents about self-sampling. 100(45.5%) of the respondents had good knowledge of self-sampling. Respondents who scored

below 50% were graded as having poor knowledge while respondents with a score from 50% and above were said to have good knowledge.

**Table 5:** *Level of Acceptance of Self-Sample Collection for Cervical Cancer Screening*

Items	Frequency (n)	Percentage (%)
Acceptance	164	74.5
Non-Acceptance	56	25.5

Table 5 shows that 164 (74.5%) of the respondents accepted self sample collection for cervical cancer. Those indicated “yes” to the question on readiness for acceptance were

considered as acceptance while those that indicated “no” were considered as non-acceptance.

**Hypothesis Testing**

H<sub>0</sub>: There is no significant association between the knowledge of the self-sample

collection and the acceptance of self-sample collection for cervical cancer screening among female staff of Babcock University

**Table 6:** Cross-tabulation of the Knowledge and the Acceptance Self-Sample Collection

	<b>Good Knowledge</b>	<b>Poor Knowledge</b>	<b>Total</b>	<b>X<sup>2</sup></b>	<b>P-value</b>
<b>Acceptability</b>					
Acceptance	11(17.5%)	52(82.5%)	63(100.0%)	23.455	.000
No Acceptance	94(59.9%)	63(40.1%)	157(100.0)		

The Chi-Square test was used to test the degree of association between the knowledge and the acceptance of self-sampling. The result from table 6 shows that there is no statistically significant association between knowledge and the level of acceptance of self-sample collection for cervical cancer screening, (X<sup>2</sup> 23.455, p>0.05). Therefore, the null hypothesis is accepted. It shows that the level of knowledge does not affect acceptability.

**Discussion of findings**

The majority of the respondents were young graduate individuals who are mostly between the ages of 20-29year. The socio-demographic characteristics found in this setting may be connected to the fact that it was an academic environment.

The respondents had displayed a high level of awareness about self-screening though only 55 (25%) of the respondents have ever had the screening done before which shows the need for sensitization on having the screening done for early recognition of any anomalies. 106 (48.2%) of the respondents have heard of self-sampling which still shows the need for community awareness.

Findings from this study revealed that 100 (45.5%) of the respondents had good knowledge of self-sampling. The findings from this study contradict the findings of Lorenzi *et al* (2019) who found out that self-sampling was simple to understand and easy to accept. Allende *et al.* (2019) found out that the respondents in Bolivia had poor knowledge about self-sampling while Heena,

*et al.* (2019) found out fair knowledge among their respondents.

This study revealed that 164(74.5%) of the respondents were ready to accept and adopt self-sample collection for cervical cancer screening and 105(47.7%) will rather have medical personnel collect the samples for them. This finding is in agreement with the findings of Zehbe, Moeller, Severini, Weaver & Bell (2011) among women from Northwest Ontario Canada where 87.2% of the respondents were ready for future cervical screening by self-sampling.

Also, Rositch, *et al.* (2012) found out that 82% of their respondents claimed that they would feel more comfortable doing the sampling by themselves. Allende *et al.* (2019) also found out that 93.2% of their respondents found it easier to perform self-screening and hence self-screening was seen as an accepted screening method among the respondents. Another study by Wong, Vahabi, Miholjic, Tan, Owino, Li, and Poon (2018) which was a meta-analysis discovered that self-sampling is an acceptable and promising screening technique among women.

The findings from this study are also in tandem with the findings by Oranratanaphan, Termrungruanglert, and Khemapech who conducted a study in 2014 among Thai women and found out that 85% of the respondent agreed to the use of self-screening method though 37% of the participants in that study questioned the reliability of this form of screening.

Close to half (47.7%) of the respondents in this study would rather have medical personnel collect their samples for cervical cancer screening however in the study conducted by the Broquet *et al* (2015), 88.0% of the respondents in urban areas preferred to perform the test at medical centres. Findings from Lorenzi, Termini, Longatto Filho *et al* (2019) also showed that the majority of the respondents in their study preferred that health care providers should collect the sample.

### Implication to Nursing

The burden of cervical cancer on affected women, their spouses, children, entire family members and the society at large could be very grievous and therefore calls for immediate attention. This study alongside other study has shown low participation of women in cervical cancer screening. The introduction of self-sample collection for cervical cancer screening is to help improve cervical cancer screening participation by making it more private, easy and convenient. Since nurses are the closest health care professionals to the women, nurses should ensure improvement in awareness of women on self-sample collection for cervical cancer screening.

### Conclusion

From the study conducted, it was discovered that the respondents had poor knowledge of self-sample collection for cervical cancer screening. To increase the knowledge and acceptance of self-sample collection for cervical cancer screening, more education and enlightenment campaigns should be done to build the confidence of the women and dispel all fears and anxiety regarding self-collection of samples for cervical cancer screening.

### Conflict of interest

All the authors agreed with the contents of the manuscript and there was no conflict of interest

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