



## Original Article

# Information, Education, and Communication as a Strategy for Enhancing Knowledge of Cervical Cancer among Women in Benin City, Nigeria

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## Abstract

**Background:** In Nigeria, approximately 80% of women who develop cervical cancer (CC) die annually from the disease. In Benin City, it is the most common type of cancer, accounting for 74.6% of gynecological admissions. The high incidence and death rate of CC are attributable to a lack of knowledge of the disease. Consequently, this study aims to determine the effects of information, education, and communication (IEC) as a strategy for enhancing CC knowledge among women. **Materials and Methods:** This quasi-experimental study utilized a multi-stage sampling procedure. First, Egor Local Government Area (LGA) was selected out of five LGAs in Benin City by balloting. Second, two health centers, Egor and Evbuotubu, were randomly assigned to the experimental group (EG) and control group (CG), respectively. Third, 200 participants per group were selected using a systematic sampling technique. Data were analyzed using descriptive statistics, Chi-square, logistic regression, and repeated analysis of variance at  $\alpha$  0.05. **Results:** The mean ages of the participants were  $38.4 \pm 8.0$  (EG) and  $34.5 \pm 8.0$  (CG) years. There were no significant differences in age ( $P = 0.17$ ), educational status ( $P = 0.18$ ), and occupation ( $P = 0.43$ ) between the two groups. The participants' knowledge at P1 for the EG ( $6.3 \pm 4.6$ ) was comparable with the CG ( $8.3 \pm 5.4$ ). At P2 and P3, knowledge scores increased significantly in the EG ( $17.9 \pm 2.2$ ;  $15.4 \pm 3.2$ , respectively) compared with the CG ( $8.5 \pm 4.9$ ;  $8.4 \pm 5.4$ , respectively). Comparisons of P1, P2, and P3 in the EG revealed significant differences in mean scores. **Conclusion:** An IEC strategy increased knowledge of CC. Therefore, we strongly recommend integrating this approach into public health education strategies for women at primary and secondary health-care centers.

**Keywords:** Cervical cancer knowledge, preventive strategy, screening-uptake

## INTRODUCTION

Cervical cancer (CC) is a malignant tumor of the lower-most part of the uterus (womb).<sup>[1]</sup> It afflicts women physically,

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psychologically, socially, and financially,<sup>[2]</sup> and also affects their family and society in general.<sup>[3]</sup> The incidence of CC ranks next to breast cancer globally, with an estimated 500,000 new cases and 275,000 deaths yearly, and approximately 86% of the cases occur in developing countries, representing 13% of all female cancers.<sup>[4,5]</sup> About 85% of these deaths occur in developing countries, with Nigeria accounting for >10%.<sup>[6,7]</sup> The rate of the occurrence of the disease is increasing, even though it is not difficult to avoid.<sup>[8]</sup> Most Nigerian women present with an advanced stage of the disease, usually above Stage II, when effective treatment is neither possible nor cost-effective.<sup>[9]</sup> The implementation of Information, Education, and Communication (IEC) as a strategy for the prevention of CC and prompt treatment as an integrated service has the potential to create awareness and improve knowledge.<sup>[10]</sup> Complying with IEC principles has been proven to improve CC knowledge in women in places including India and rural communities in Nigeria.<sup>[9-11]</sup> Adequate knowledge, reliable, well planned, and effective programs have been shown to reduce the prevalence of CC in developed countries.<sup>[12]</sup> However, studies in India and Nigeria have revealed that women have limited knowledge and inadequate public health education about CC.<sup>[7]</sup> Applying IEC principles to emphasize accurate information about CC through effective interpersonal communication skills will adequately convey prevention messages to all classes of women, and it is crucial in increasing knowledge and awareness levels. Based on the high incidence and mortality rate of CC, that is implicated by limited knowledge of women and inadequate public health education about CC in Benin City, the aim of this study was to explore how IEC intervention could be used to enhance CC knowledge among women utilizing maternal health services in Primary Health Centres (PHC) in Benin City.

## MATERIALS AND METHODS

### Study design

This study utilized a pre-test-post-test quasi-experimental research design to determine the impact of IEC as a strategy for enhancing knowledge of CC among women utilizing the health facilities in selected communities in Egor Local Government Area (LGA) Benin City, Edo State, Nigeria.

### Study setting

The study setting is in Egor (LGA) in Benin City, the capital of Edo State. Edo State is an inland state in Western Nigeria. It is bounded in the north and east by Kogi State, in the south by Delta State and in the west by Ondo State.

### Sample size

The sample size for the study participants was calculated using the comparison of means.

$$n = \frac{2(Z\alpha + Z\beta)^2 \delta^2}{(\mu_1 - \mu_2)^2}$$
 Where  $Z\alpha$  = standard normal deviation corresponding to a level of significance of 5% = 1.96,  $Z\beta$  =

standard normal deviation corresponding to a power of 90% = 1.28,  $\delta$  = standard deviation of the score obtained from a study by Arulogun and Maxwell in 2012<sup>[13]</sup> = 4.1. Improvement in knowledge score was expected to double = 2. Thus, a sample size of 200 participants per group was used, giving a total sample size of 400.

### Sampling technique

A multi-stage sampling technique was used for recruiting the study participants into the study groups. Stage 1: Egor LGA was selected out of five LGAs in Benin City using a lottery method of simple random sampling. Stage 2: Selection of Health Centres. Egor LGA has ten political wards, out of which two wards were selected using a lottery method of simple random sampling, one as the intervention and the other as the control center. Stage 3: Selection of Participants. A systematic sampling technique was employed to select 200 eligible women into each group.

### Procedure for data collection

The selected health facilities were divided into experimental and control groups (CGs). Egor health facility served as the experimental group (EG) center. The intervention lasted for 6 weeks, from January 7 to February 18, 2019. The months of January and February were chosen for this study because this is the dry season, and during the rainy season, the roads are usually flooded, making the area inaccessible. Intervention visits were conducted in three phases. The first involved a visit to the executive chairman of Egor LGA, the PHC co-ordinator, and the Unit Heads of the selected PHC with introductory letters from the Head of the Department of Nursing, University of Ibadan. This was followed by a familiarisation visit to the selected health centers to plan and to strategize with the unit heads for the implementation of the intervention for the EG only.

Ten research assistants were trained by the researcher on communication skills adopted from the World Health Organization, Training Guide, 2017, to provide core knowledge and development for the necessary communication skills. They were also taught methods of data collection and the use of the instrument, including a Pidgin English version.<sup>[14]</sup> The study was adequately explained to the research assistants to enable them to assist the clients effectively when necessary. At the close of the training, the research assistants were evaluated, and the results were obtained immediately. Immediately after completing preintervention questionnaires, the IEC module (see appendix) was introduced as the intervention to the EG only in the same venue. Using effective communication, a positive nurse-client relationship was established for transaction and goal attainment. The training lasted for two sessions; the first session lasted for 1 h, and the second session, which commenced after a tea break, lasted for 1.5 h. The clients unanimously agreed to have both sessions on the same day to save time. We proceeded from the known to the unknown, starting with what the women knew already and then preceded to new knowledge, using the clients existing knowledge as a basis to build new knowledge. New

knowledge will bring about new information and ideas that can give rise to insights on the subject matter. Using simple vocabulary and Pidgin English, systematic, salient, and accurate information were concisely delivered to the clients to avoid information overload, taking cognizance of their attention span as the majority were petty traders.

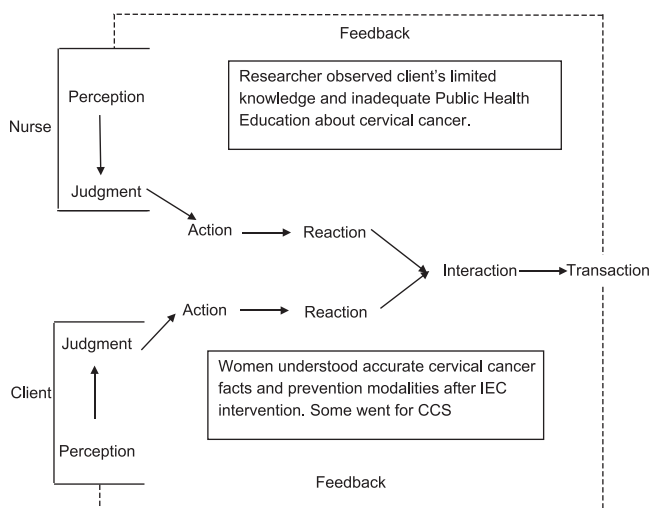
The intervention aimed to educate the participants on knowledge of the burden of CC, its concept, prevention and treatment, enabling the women to have a better understanding of the importance of regular screening using Visual Inspection with Acetic Acid (VIA) or other cervical smear tests. The benefits and limitations of screening, the rationale for cervical screening and the significance of recognizing cervical disease early were emphasized.

At the end of a 6-week follow-up period, the clients were called on the telephone to reinforce the IEC intervention and to remind them of the final meeting. Only 182 out of 200 came back for the 6-week postintervention meeting. The clients were welcomed back, followed by a review of activities, screening experience, and a question and answer session. The 6-week postintervention questionnaire was then administered to the clients. The researcher and research assistants cross-checked the retrieved questionnaires for correctness and completeness, followed by light refreshment and departure of the respondents.

This study applied King’s Theory of Goal Attainment to establish a positive nurse-client relationship, effective interpersonal communication skills that effectively conveyed knowledge, awareness, and prevention message to all classes of women in the EG using the local language. Lectures and group discussions were used along with visual aids and participatory models of communication so that the women had the opportunity to interact and give their opinions [Figure 1].

### Method of data analysis

The collected data were analyzed using the Statistical Package



**Figure 1:** King’s Transaction Model. Source: Adapted from King, (1981) in Sieloff and Messmer (2014) for the use of information, education and communication strategy for Cervical Cancer Screening Uptake

for the Social Science (SPSS) version 21.00 statistical software. (IBM corp. released 2012. IBM SPSS statistics for widows, version 21.0 IBM Corp, Armonk, NY). Descriptive statistics were used, such as the frequencies and percentages of the sociodemographic variables: age, marital status, and religion, while knowledge, attitude, and uptake of CC screening were assessed using the Chi-square test, *t*-test, and regression analysis. The level of significance was set at a *P* value of 5%.

### Ethical considerations

Copies of this research proposal were submitted to the Ethical Review Committee of Egor LGA. A copy of a letter of introduction from the Acting Head, Department of Nursing, University of Ibadan, was attached to obtain entry permission for data collection. In addition, a written informed consent form that addressed the ethical issues stated below was made available to the participants. The Research and Ethics Committee of Egor LGA approved the study proposal on December 15 2014 (reference number: ELG2337/T1/VOL 18). According to the ethical principle of medical fair treatment, the CG also received a knowledge education program after completion of the study.

### RESULTS

The demographic characteristics of the women are shown in Table 1. The mean ages of the women were  $38.40 \pm 7.99$  years and  $34.54 \pm 7.90$  years in the experimental and CGs, respectively. There was no significant difference in age between the two groups ( $\chi^2 = 5.03, P = 0.17$ ). Most of the women were married both in the experimental (75.5%) and CGs (90.5%), none of the women in the EG were divorced, but one (0.5%) woman in the CG was divorced. There was a significant difference in marital status between the two groups ( $P < 0.0001$ ). A greater proportion of the women in both the experimental and CGs had secondary education 131 (65.5%) and 119 (59.3%), respectively. A large proportion of the women 173 (86.5%) in the EG and 179 (89.5%) in the CG were Christians. Most of the patients in both groups were traders (73.0% in the EG; 65.5% in the CG). There were 8 housewives (4.0%) in the EG and also 8 housewives (4.0%) in the CG.

Knowledge of CC among the enrolled women in Benin City is reported in Table 2. At preintervention, 10 (22.2%) of the women in the EG and 12 (27.9%) in the CG indicated that the definition of CC screening was the prevention of CC. However, only 11 (24.4%) and 11 (25.6%) in the experimental and CGs, respectively, knew that prevention of CC involved undergoing a Pap smear test 25 (55.6%) and 26 (60.5%) in the experimental and CGs, respectively, reported that CC could affect women of 15 years and above. Only 20 (44.4%) and 23 (53.5%) of the women in the experimental and CGs, respectively, could identify that CC was caused by HPV. Thirty (66.7%) and 24 (55.8%) women in the experimental and CGs, respectively, reported that the mode of transmission of CC was through sexual intercourse. Only 12 (26.7%) women

**Table 1: Sociodemographic characteristics among women in Benin City, Nigeria**

Variable	Preintervention		Total	$\chi^2$	P
	Experimental (n=200), n (%)	Control (n=200), n (%)			
Age, mean±SD	38.40±7.99	34.54±7.90			
≤25	20 (44.4)	25 (55.6)	45	5.03	0.17
26-35	79 (45.1)	96 (54.9)	175		
36-45	69 (57.0)	52 (43.0)	121		
>45	31 (54.4)	26 (45.6)	57		
Marital status					
Single	13 (6.5)	14 (7.0)	27	30.665	< 0.0001
Married	151 (75.5)	181 (90.5)	332		
Separated	10 (5.0)	3 (1.5)	13		
Divorced	0 (0)	1 (0.5)	1		
Widowed	26 (13.0)	1 (0.5)	27		
Educational status					
Primary	43 (21.5)	39 (19.5)	82	4.89	0.18
Secondary	131 (65.5)	119 (59.3)	250		
University	22 (11.0)	33 (16.5)	55		
Postgraduate	4 (2.0)	9 (4.5)	13		
Religion					
Traditional	25 (12.5)	16 (8.0)	41	3.36	0.19
Christianity	173 (86.5)	179 (89.5)	352		
Islam	2 (1.0)	5 (2.5)	7		
Occupation					
Trading	146 (73.0)	131 (65.5)	277	4.90	0.43
Artisan	20 (10.0)	21 (51.2)	41		
Civil servant	21 (10.5)	33 (61.1)	54		
Professional	5 (2.5)	7 (58.3)	12		
Housewife	8 (4.0)	8 (4.0)	16		

SD: Standard deviation

in the EG indicated that the period of incubation of HPV to the precancerous lesion was between 10 and 20 years 21 (48.8%) in the CG.

Immediately, postintervention, the number of women who could identify ways of preventing CC increased to 131 (65.5%), while it reduced to 9 (17.3%) in the CG as this group was not exposed to the IEC intervention. Only 117 (60.6%) and 13 (25.0%) women in the experimental and CGs, respectively, knew that the prevention of CC involved undergoing a Pap smear test, and 191 (60.4%) and 39 (75.0%) women in the experimental and CGs, respectively, reported that CC could affect women of 15 years and above. The number of women who identified that CC was caused by HPV increased to 172 (86.0%) in the EG and 37 (71.2%) in the CG, and 173 (86.5%) and 26 (50.0%) in the experimental and CGs, respectively, reported that seminal intercourse was a major implicit factor of CC. The period of incubation of HPV into precancerous lesion was reported to be between 10-20 years by 142 (71.0%) of the women in the EG and 27 (51.9%) in the CG.

At 6 weeks postintervention, those that identified CC screening as a way of preventing CC increased to 179 (98.4%) and it also increased to 34 (40.0%) in the CG. Those who knew that CC can be prevented through undergoing a Pap smear test increased

to 160 (90.9%) in the EG and 35 (41.2%) in the CG. In addition, 172 (97.7%) and 48 (56.5%) women in the experimental and CGs, respectively, reported that CC could affect women of 15 years and above. The number of women who identified that CC was caused by HPV increased to 170 (96.6%) in the EG and 47 (55.3%) in the CG, and 189 (87.9%) and 26 (30.6%) in the experimental and CGs, respectively, reported that the most common mode of transmission of CC was through sexual intercourse. The doses of HPV vaccination were reported to be between 3 within 6 months by 166 (94.3%) of the women in the EG and 26 (30.6%) in the CG.

Comparisons of knowledge about the risk factors in both groups are reported in Table 3. Before the intervention, there was no significant association between knowledge of various risk factors except knowledge of having sex with a man who sleeps with many women, which was significantly different between the experimental and CGs ( $\chi^2 = 5.56$ ,  $P = 0.02$ ).

Immediately after the intervention, knowledge of all risk factors was found to be significantly different between the experimental and CGs. Knowledge of the risk factors included having a child at a young age (below 18 years) ( $\chi^2 = 34.79$ ,  $P < 0.0001$ ), having first sexual intercourse at an early age ( $\chi^2 = 42.62$ ,  $P < 0.0001$ ), having more than 7 children ( $\chi^2 = 48.66$ ,  $P < 0.001$ ), having sex with a man who sleeps with many women ( $\chi^2 = 35.95$ ,

**Table 2: Knowledge of cervical cancer among women**

Variable	Preintervention		Immediate post		6 weeks postintervention	
	Experimental (%)	Control (%)	Experimental (%)	Control (%)	Experimental (%)	Control (%)
Definition of cervical cancer screening						
Prevention of breast cancer	10 (22.2)	12 (27.9)	11 (5.5)	9 (17.3)	2 (1.1)	25 (29.4)
Prevention of STI	8 (17.8)	11 (25.6)	45 (22.5)	10 (19.2)	9 (5.1)	13 (15.3)
Prevention of cervical cancer	16 (35.6)	15 (34.9)	131 (65.5)	9 (17.3)	179 (92.3)	34 (40.0)
Prevention of all cancer	11 (24.4)	5 (11.6)	13 (6.5)	7 (13.5)	4 (2.3)	13 (15.3)
Which of these tests prevent cervical cancer?						
Pap smear test	11 (24.4)	11 (25.6)	117 (60.6)	13 (25.0)	160 (90.9)	35 (41.2)
HPV test	5 (11.1)	3 (7.0)	56 (28.0)	11 (21.2)	10 (5.7)	5 (5.9)
Vaccination against HPV	17 (37.8)	15 (34.9)	20 (10.0)	14 (26.9)	5 (2.8)	19 (22.4)
Affects women 15 years and above						
Yes	25 (55.6)	26 (60.5)	191 (60.4)	39 (75.0)	172 (97.7)	48 (56.5)
No	20 (44.4)	17 (39.5)	9 (10.7)	13 (25.0)	4 (2.3)	37 (43.5)
Second most common cancer among women in Nigeria						
Yes	23 (51.1)	24 (55.8)	186 (93.0)	34 (65.4)	172 (97.7)	47 (55.3)
No	22 (48.9)	19 (44.2)	14 (7.0)	18 (34.6)	4 (2.3)	38 (44.7)
Mode of transmission of cervical cancer						
Contaminated water	2 (4.4)	3 (7)	13 (6.5)	6 (11.5)	26 (60.5*)	13 (15.3)
Droplet infection	2 (4.4)	8 (18.6)	6 (3)	10 (19.2)	2 (1.1)	22 (25.9)
STI	30 (66.7)	24 (55.8)	173 (86.5)	26 (50.0)	189 (87.9)	26 (30.6)
Poor personal hygiene	11 (24.4)	8 (18.6)	8 (4)	10 (19.2)	3 (10.7)	25 (29.4)
Caused by HPV						
Yes	20 (44.4)	23 (53.5)	172 (86.0)	37 (71.2)	170 (96.6)	47 (55.3)
No	25 (55.6)	20 (46.5)	28 (14.0)	15 (28.8)	6 (3.4)	38 (44.7)
Period of incubation of HPV						
10-20 years	12 (26.7)	21 (48.8)	142 (71.0)	27 (51.9)	171 (97.2)	18 (21.2)
5-10 years	6 (13.3)	4 (9.3)	39 (19.5)	9 (17.3)	5 (2.8)	18 (21.2)
15-30 months	18 (40.0)	11 (25.6)	17 (8.5)	11 (21.2)	0 (0.0)	28 (32.9)
1-5 years	9 (20.0)	7 (16.3)	2 (1.0)	5 (9.6)	0 (0.0)	21 (24.7)
Doses of HPV vaccination						
3 within 3 months	10 (22.2)	13 (30.2)	39 (19.5)	19 (36.5)	5 (2.8)	13 (15.3)
3 within 6 months	6 (13.3)	17 (39.5)	138 (69.0)	14 (26.9)	166 (94.3)	22 (25.9)
3 within 3 years	14 (31.1)	2 (4.7)	18 (9.0)	9 (17.3)	4 (2.3)	14 (16.5)
I don't know	15 (33.3)	11 (25.6)	5 (2.5)	10 (19.2)	1 (0.6)	36 (42.4)

HPV: Human papilloma virus, STI: Sexually transmitted infections

$P < 0.0001$ ), having sex with many men ( $\chi^2 = 52.53$ ,  $P < 0.001$ ), living with human immunodeficiency virus/acquired immunodeficiency syndrome (HIV/AIDS) and STI ( $\chi^2 = 35.95$ ,  $P < 0.0001$ ), and smoking or drinking alcohol ( $\chi^2 = 44.25$ ,  $P < 0.0001$ ).

At 6 weeks postintervention, the level of knowledge of the risk factors between the study groups was maintained as with immediately postintervention as reported in Table 3.

The mean knowledge scores of CC and its prevention measures between the experimental and CGs before the intervention, immediately after and at 6 weeks after the intervention is reported in Table 4. The difference in the level of knowledge of CC

between the experimental and CGs at various stages of the study was significantly different between the experimental and CGs at all three-time points ( $F = 694.38$  and  $P < 0.0001$ ) [Table 4].

## DISCUSSION

The sociodemographic characteristics of the women in the experimental and CGs were similar except for marital status. Although the characteristics of experimental and comparison groups were compared to test for balance, ideally, there should be no significant differences in average observable characteristics between the two groups. The only explanation for this could be that the respondents were not randomized into the groups as it would have been if the study were a randomized

**Table 3: Comparison of knowledge about risk factors in both groups**

Knowledge	Preintervention		Immediate posttest		6 weeks posttest	
	Experimental (n=45), n (%)	Control (n=45), n (%)	Experimental (n=45), n (%)	Control (n=45), n (%)	Experimental (n=45), n (%)	Control (n=45), n (%)
Having a child at young age (below 18 years)						
Yes	23 (51.1)	23 (53.5)	172 (86.0)	25 (48.1)	166 (94.3)	47 (55.3)
No	22 (48.9)	20 (46.5)	28 (14.0)	27 (51.9)	10 (5.7)	38 (44.7)
$\chi^2$	0.05		34.79		58.16	
P	0.82		<0.0001		<0.0001	
First sexual intercourse at early age						
Yes	20 (44.4)	18 (41.9)	181 (90.5)	27 (51.9)	173 (98.3)	41 (48.2)
No	25 (55.6)	25 (58.1)	19 (9.5)	25 (48.1)	3 (1.7)	44 (51.8)
$\chi^2$	0.06		42.62		97.26	
P	0.81		<0.001		<0.001	
Having more than 7 children						
Yes	19 (42.2)	18 (41.9)	184 (92)	27 (51.9)	172 (97.7)	40 (47.1)
No	26 (57.8)	25 (58.1)	16 (8)	25 (48.1)	4 (2.3)	45 (52.9)
$\chi^2$	0.001		48.66		90.50	
P	0.97		<0.0001		<0.001	
Having sex with a man who sleep with many women						
Yes	27 (60.0)	15 (34.9)	175 (87.5)	26 (50.0)	170 (96.6)	41 (48.2)
No	18 (40.0)	28 (65.1)	25 (12.5)	26 (50.0)	6 (3.4)	44 (51.8)
$\chi^2$	5.56		35.95		86.57	
P	0.02		<0.0001		<0.001	
Having sex with many men						
Yes	23 (51.1)	15 (34.9)	166 (83.0)	17 (32.7)	156 (88.6)	33 (38.8)
No	22 (48.9)	28 (65.1)	34 (17.0)	35 (67.3)		52 (61.2)
$\chi^2$	2.36		52.53		71.20	
P	0.12		<0.0001		<0.001	
HIV/AIDS/STI						
Yes	27 (60.0)	18 (41.9)	175 (87.5)	26 (50.0)	160 (90.9)	38 (44.7)
No	18 (40.0)	25 (58.1)	25 (12.5)	26 (50.0)	16 (9.1)	47 (55.3)
$\chi^2$	2.90		35.95		66.82	
P	0.09		<0.0001		<0.001	
Smoking or drinking of alcohol						
Yes	18 (40.0)	14 (32.6)	165 (82.5)	19 (36.5)	166 (94.3)	35 (41.2)
No	27 (60.0)	29 (67.4)	35 (17.5)	33 (63.5)	10 (5.7)	50 (58.8)
$\chi^2$	0.52		44.25		91.43	
P	0.47		<0.0001		<0.0001	

HIV: Human immunodeficiency virus, AIDS: Acquired immunodeficiency syndrome, STI: Sexually transmitted infections

controlled trial where participants are randomly assigned to either of the groups.

There was no significant difference in age between the two groups, and most of the women were married in both groups. This was expected, as the majority of the women were of childbearing age. Both groups had a high number of Christians. A similar study that explored knowledge of CC among women revealed that the mean age of the respondents was  $33 \pm 9$  years, and most of their respondents were also Christians.<sup>[15,16]</sup>

### Knowledge of cervical cancer

This study showed that before the intervention, the majority of the respondents in both groups lacked knowledge of CC, the etiological factors, mode of transmission, the period of incubation and its prevention. Immediately, postintervention, there was a marked improvement in knowledge of CC epidemiology in the EG, whereas those in the CG had a slight increase in knowledge about CC epidemiology. The knowledge increase was maintained at 6 weeks postintervention. The

**Table 4: Mean Knowledge scores of cervical cancer and its prevention measures between experimental and control groups' at preintervention, immediate post and 6 weeks postintervention**

Knowledge	Mean±SD		F-test	P
	Experimental	Control		
Preintervention	6.33±1.61	6.23±1.54	694.38	<0.0001
Immediate intervention	17.87±3.16	6.51±1.65		
6 weeks postintervention	16.41±2.20	7.00±1.04		

SD: Standard deviation

women's low knowledge of CC before the intervention and significant increase immediately after the intervention, which was maintained at 6 weeks is consistent with the study by Ndikom *et al.* in 2017, which reported a significant increase in participants' knowledge of the causative organism (Net Intervention Effect (NIE) <37%,  $P < 0.0001$ ), and seminal intercourse as a major implicit factor of CC (NIE = 53.7%,  $P < 0.001$ ).<sup>[17]</sup> Screening to detect CC at an early stage slightly increased from 1.4% at baseline to 3.6% in the intervention group and from 2.1% to 2.3% in the CG. Knowledge on CC screening improved in the intervention group, but the uptake only improved slightly with the intervention.<sup>[17]</sup> A similar study on educational interventions on the knowledge of CC and uptake of Pap smear tests among market women in Niger State, Nigeria also reported that at baseline the respondents had very poor knowledge of the symptoms of CC, as only 10.8% of respondents in the intervention group and 12.9% of those in the CG had good knowledge; however, there was a significant increase after the intervention.<sup>[18]</sup> The authors emphasized the importance of educational interventions in increasing the knowledge about CC and Pap smear test, and they stressed the need to reinforce and sustain educational interventions to encourage women to receive screening for CC.<sup>[18]</sup> The significant increase in knowledge among women after the intervention shows the importance of IEC educational interventions to improve women's knowledge and the need for recurrent health educational interventions to reinforce and maintain knowledge of CC and the control measures. The preintervention knowledge mean score was very low, but it increased significantly immediately postintervention, which occurred on the same day as the preintervention. This shows the efficiency of health education (IEC) intervention on the increase in CC knowledge. Six weeks postintervention, the mean knowledge score had decreased to  $15.41 \pm 3.20$ . A study carried out in sub-Saharan Africa reported similar findings of a significant and proportional increase (from 6% to 56.6%) in the knowledge of the Pap test among market women after an educational intervention.<sup>[19]</sup> The authors reported that the respondent's knowledge of CC was comparable at baseline but improved drastically after the intervention, and they emphasized the importance of health education in improving knowledge about CC.<sup>[19]</sup>

Several studies have reported that appropriately selected health education methods can improve knowledge of CC and screening and also other health issues.<sup>[20,21]</sup> This significant improvement in women's knowledge of CC and screening following health education intervention attests to the fact that if women are provided with the right information on CC health, they will be enlightened and equipped to make informed decisions not just on CC screening but reproductive health as well.<sup>[22,23]</sup> However, the slight decrease in knowledge at 6 weeks postintervention shows there is need for consistent repetition of health education to reinforce and maintain knowledge of CC, its prevention and control among women.

### Study limitations

1. Participants' screening results were not assessed for follow-up and counseling where necessary because of time constraints
2. Bias: The healthcare centers studied were used mainly by market and rural women which did not properly represent the target population
3. Lack of random assignment was a major weakness of this study, being a quasi-experimental study design, and this was reflected in the sociodemographic characteristics of the respondents at baseline.

### CONCLUSION

This study examined IEC as a strategy for enhancing knowledge of CC among women in Benin City. Communication with regard to health education can involve various modes, such as panel or group discussions, poster or exhibit presentations, and lectures. Each mode of health education has its own advantages, limitations, and areas of effectiveness. In the current study, IEC proved to be very effective in improving awareness, knowledge of CC, and willingness toward CC screening among the respondents. It is important that intensive, consistent and comprehensive public health education programs on cervical health are passed to institutions including schools, local administrative structures, civic associations, and other health delivery structures that could increase a woman's knowledge.

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### Conflicts of interest

There are no conflicts of interest.

### REFERENCES

1. Kozasa K, Mabuchi S, Komura N, Yokoi E, Hiromasa K, Sasano T, *et al.* Comparison of clinical utilities of the platelet count and platelet-lymphocyte ratio for predicting survival in patients with cervical cancer: A single institutional study and literature

- review. *Oncotarget* 2017;8:55394-404.
- Preis H, Baban A, Morgan K, Todorova I, Benyamini Y. Women's health psychology and sociocultural context in the EHPS 2015 conference. *Eur Health Psychol* 2015;17:246-9.
  - Duke P, Godwin M, Ratnam S, Dawson L, Fontaine D, Lear A, *et al.* Effect of vaginal self-sampling on cervical cancer screening rates: A community-based study in Newfoundland. *BMC Womens Health* 2015;15:47.
  - Mohanty G, Ghosh SN. Risk factors for cancer of cervix, status of screening and methods for its detection. *Arch Gynecol Obstet* 2015;291:247-9.
  - Ekanem MJ. Knowledge and Practice of Screening for Breast and Cervical Cancers among Women in Uyo, Akwa Ibom State (Doctoral Dissertation).
  - Ali CI, Makata NE, Ezenduka PO. Cervical cancer: A health limiting condition. *Gynecol Obstet (Sunnyvale)* 2016;6:1-7.
  - Nwobodo H, Ba-Break M. Analysis of the determinants of low cervical cancer screening uptake among Nigerian women. *J Public Health Afr* 2015;6:484.
  - Zikan M, Fischerova D, Pinkavova I, Slama J, Weinberger V, Dusek L, *et al.* A prospective study examining the incidence of asymptomatic and symptomatic lymphoceles following lymphadenectomy in patients with gynecological cancer. *Gynecol Oncol* 2015;137:291-8.
  - Akwaowo CD, Vanni T. Cervical cancer screening: barriers to access and potential solutions for Nigeria. *Clin Biomed Res* 2015;35:5-13.
  - Ports KA, Reddy DM, Rameshbabu A. Cervical cancer prevention in Malawi: A qualitative study of women's perspectives. *J Health Commun* 2015;20:97-104.
  - Chili T. Knowledge of Cervical Cancer and Awareness of Screening Regimes/Routines among HIV Positive Women in Swaziland (Doctoral Dissertation).
  - Shankar A, Rath G, Roy S, Malik A, Bhandari R, Kishor K, *et al.* Level of awareness of cervical and breast cancer risk factors and safe practices among college teachers of different states in India: Do awareness programmes have an impact on adoption of safe practices? *Asian Pac J Cancer Prev* 2015;16:927-32.
  - Arulogun OS, Maxwell OO. Perception and utilization of cervical cancer screening services among female nurses in university college hospital, Ibadan, Nigeria. *Pan Afr Med J* 2012;11:69.
  - World Health Organization. Information, Education and Communication for Cervical Cancer Prevention and Control in African Countries: Training Guide. World Health Organization; 2017.
  - Idowu A, Olowookere SA, Fagbemi AT, Ogunlaja OA. Determinants of cervical cancer screening uptake among women in Ilorin, north central Nigeria: A community-based study. *J Cancer Epidemiol* 2016;2016:6469240.
  - Kangmennaang J, Thogarapalli N, Mkandawire P, Luginaah I. Investigating the disparities in cervical cancer screening among Namibian women. *Gynecol Oncol* 2015;138:411-6.
  - Ndikom CM, Ofi BA, Omokhodion FO, Adedokun BO. Effects of educational intervention on women's knowledge and uptake of cervical cancer screening in selected hospitals in Ibadan, Nigeria. *Int J Health Promot Educ* 2017;55:259-71.
  - Gana GJ, Oche MO, Ango JT, Kaoje AU, Awosan KJ, Raji IA. Educational intervention on knowledge of cervical cancer and uptake of Pap smear test among market women in Niger State, Nigeria. *J Public Health Afr* 2017;8:575.
  - Lott BE, Trejo MJ, Baum C, McClelland DJ, Adsul P, Madhivanan P, *et al.* Interventions to increase uptake of cervical screening in Sub-Saharan Africa: A scoping review using the integrated behavioral model. *BMC Public Health* 2020;20:654.
  - Abiodun OA, Olu-Abiodun OO, Sotunsa JO, Oluwole FA. Impact of health education intervention on knowledge and perception of cervical cancer and cervical screening uptake among adult women in rural communities in Nigeria. *BMC Public Health* 2014;14:814.
  - Dreyer G, van der Merwe FH, Botha MH, Snyman LC, Constant D, Visser C, *et al.* School-based human papillomavirus vaccination: An opportunity to increase knowledge about cervical cancer and improve uptake of screening. *S Afr Med J* 2015;105:912-6.
  - Nxumalo N. University Cervical Cancer Health Communication Campaigns: Knowledge, Attitudes and Practices of Black Female Students to Services offered at UKZN (Doctoral Dissertation, University of KwaZulu-Natal, Durban).
  - Ajayi TB, Olujobi GO, Agbeyangi OO. Health information dissemination for breast cancer awareness, early detection and support for women. *Information Impact: J Inf Knowledge Manage.* 2017;8:13-21.

## APPENDIX

### RESPONDENTS TRAINING MANUAL ON CERVICAL CANCER

#### Training benefits. The training will:

- Equip participants with the knowledge of the burden of cervical cancer, its concept, prevention and treatment.
- Provide a supportive learning environment and facilitate discussion platform to learn and share experience.
- Lead to clients' better understanding of the importance of regular cervical smear tests and the benefits and limitations of screening.
- Be better prepared for the consequences of result and make plan for follow-up.
- Understand the rationale behind cervical screening while recognizing the importance of the criteria for early detection of cervical cancer.
- Effectively promote cervical screening (Cervical Check, 2012–2013).

#### INTRODUCTION

Cervical cancer is the second most normal malignancy in ladies around the world. Human papilloma virus (HPV) contamination is accepted to be an imperative essential driver of malignancy of the cervix (Jacob 2012). Two subtypes of the infection HPV (16 and 18) specifically are available in more than 80% of intrusive cervical malignancies. Other known hazard factors for cervical tumor incorporate smoking, early beginning of the sexual act, numerous sexual accomplices, the nearness of other sexually transmitted infections and the immunological status of the lady, unfortunate eating and corpulence. Essential methodologies to keep the advancement of cervical growth centre around lessening the known hazard factors by empowering a solid way of life like smoking discontinuance and the reception of 'more secure' sexual practices went for diminishing the danger of HPV contamination. Understanding the part of HPV in cervical malignancy has prompted the improvement of the HPV inoculation (WHO, 2013).

Secondary prevention methods are the pillar of endeavors to lessen cervical disease. These optional techniques include screening for the identification of unusual or precancerous cell changes (i.e., any progressions which may go before, be related with or convey a huge danger of creating malignancy). Screening strategies utilizing acidic corrosive (VIA) or Lugol's iodine (VILI), include the assessment of the cervix without amplification, in the wake of painting with weaken acidic corrosive or Lugol's iodine individually and different techniques; anomalous cervical tissue turns white (VIA) or yellow (VILI). Moreover, an imperative system towards decrease of the rate and mortality of cervical tumour is by expanding the screening rate of ladies that have not screened or those that screen rarely (WHO, 2013, Ndikom and Ofi, 2012).

#### Key Facts about Cervical Cancer

Consistently more than 270,000 ladies pass on from cervical disease; over 85% of these passings are in low and center wage nations.

The cervical disease is caused by sexually-gained contamination with human papilloma infection (HPV). A great many people are tainted with HPV not long after the beginning of the sexual movement.

Immunization against HPV in young ladies 9 to 13 years of age joined with general screening in ladies over age 30 for precancerous injuries taken after by satisfactory treatment are key devices to keep the 530,000 new cervical malignancy cases analyzed each year.

Survival rates for a cervical tumour can be additionally enhanced by building up successful growth treatment programs (WHO, 2013).

Awareness and uptake of cervix cancer screening which is acknowledged to be the pivot approach to detecting and controlling the disease, has remained poor, in developing counties including Nigeria (Ndikom and Ofi, 2012). There is dire need for more enlightenment about cervical cancer.

#### Central objective

To create public awareness that cervical cancer is curable if detected and treated early and early detection is possible through cervical screening only.

The manual contain two modules:

- Epidemiology of cervix cancer and Natural history of cervical cancer;
- Prevention of cervical cancer, HPV and Treatment of precancerous lesions and cervical cancer.

#### MODULE I: EPIDEMIOLOGY OF CERVICAL CANCER

##### Objectives

At the end of this lecture, participants will be able to:

Define cervix cancer in their level and state the incidence;

Discuss the risk and protective factors as well as the clinical features.

**Resources:** Human and Material (Module and Power points)

**Teaching Method:** Group discussion and lecture method

**Time Allotment:** One hour

**Introduction:** Establishment of rapport, introduction of the topic and arousing participants interest about the lecture

### **Epidemiology of cervical cancer**

Cervical malignancy is a non-transmittable infection of the genuine general medical issue. In spite of being a preventable infection, cervical tumor kills a large portion of a million ladies worldwide every year. All inclusive, at regular intervals a lady kicks the bucket from cervical malignancy. The cervical tumor is the commonest genital malignancy, slaughtering ladies particularly in creating nations. It is the second commonest disease influencing sexually dynamic ladies in the regenerative years in Nigeria. The cervical disease is lethal if not perceived and treated early. It is characterized as harmful neoplasm emerging from cells starting in the cervix uteri (Kumar, Abass, Fatusto and Mitchell, 2007). It is caused by the sexually transmitted Human Papilloma Virus (HPV), which is the most widely recognized viral contamination of the regenerative tract (World Health Organization [WHO], 2013).

Cervical growth is a main source of death among ladies around the world (Ndikom and Ofi, 2011, Shephard, Peersman, Weston, and Napuli, 2000) notwithstanding the accessibility and usage of cervical malignancy screening programs. Today, it is the second most basic disease among ladies in creating nations (Cervical Cancer Action, 2012) and the best growth executioner among ladies in the creating scene. There is a consistent drop in cervical disease frequency and death rates in high-pay nations, as a result of compelling early screening and treatment advances, clinicians can distinguish and expel cervical peculiarities previously obtrusive malignancy creates.

### **Incidence**

Malignancy of the cervix uteri is the second most normal tumor among ladies around the world, with an expected 529,409 new cases and 274,883 passings in 2008, around 86% of the case happens in creating nations, speaking to 13% of female disease (IARC, 2008). Screening using the Pap spread has brought about a decrease in cervical growth mortality in created areas (Bessler, Aung and Jolly, 2007), whereas, the circumstance is still not declining in creating regions like Nigeria where it is a main source of malignancy mortality, and it is the second most continuous tumour (Adewole, 2008).

### **Risk factors**

HPV infection is related to practically all instances of cervical growth.

Uneven eating regimen, corpulence, and absence of physical exercise.

HPV is sexually transmitted, yet just 15 of more than 100 strains are involved as causing cervical growth.

A family history of cervical tumor copies the hazard for building up the disease.

Most instances of cervical tumor happen after the age of 20.

Expanded quantities of sexual accomplices and lower age at first sexual act have both been related with expanded hazard.

Smoking and liquor have been related to an expanded danger of squamous cell carcinoma of the cervix.

Ladies contaminated with HIV have been appeared to have a five-overlap danger of creating cervical tumor.

The long haul utilization of oral contraceptives has been appeared to build the hazard (WHO, 2013).

### **Symptoms**

Early cervical growth is asymptomatic.

Strange vaginal draining can happen once the growth winds up obtrusive.

Abnormal vagina discharge.

### **Complications of cervical cancer**

Cervical cancer complications can occur as a side effect of treatment or in consequence of advancement of the disease, these are:

Early menopause: If the ovaries are surgically removed or if they are damaged during treatment with radiotherapy it will induce infertility and early menopause.

**Lymphedema:** This is build-up of fluid in the tissue. This can arise if the pelvic lymph nodes in the pelvis are removed.

**Emotional imbalance:** May occur as a result of the impact and stigma of living with cervical cancer.

**Pain:** When the metastasis spread into the nerve endings bones or muscle.

**Renal failure:** Metastasis can compress the ureters, obstructing urine flow, this will result in hydronephrosis (built up of urine inside the kidneys) swelling and scarring in some cases which could lead to kidney failure.

**Blood clots:** As a result of bed rest after surgery or chemotherapy and the sticky nature of the blood because of effect of cancer, there could be deep venous thrombosis and embolism (detached clot) which can cause blood blockage of blood vessels.

**Haemorrhage:** Damage to vagina bowel and bladder from metastasis can result in haemorrhage.

**Fistula:** Abnormal channel between two sections of the body. This can develop between the bladder and the vagina or between the vagina and rectum.

**Impairment of sexual functioning:** Due to offensive vagina discharge as a result of leakage of faeces from recto vagina fistula, vagina dryness, and narrowing with ultimate suppression of sex drive.

Pregnant clients with cervical cancer may have foetal damage if treatment begins during pregnancy or premature labour (Cervical Cancer Information Prescription-NHS).

### Detection and diagnosis

Cervical cancer can be detected by:

- a. Pap smear. More tests are carried out if the Pap smear reveals abnormal cells
- b. Visual inspection with Acetic acid or Lugol's Iodine (VIA/VILI)
- c. HPV tests are available to detect the presence of viral DNA
- d. A colposcopy can be used to view the tissue of the cervix.

### Natural history of cervical intraepithelial neoplasia

It has been known for a long time that Cervical Intraepithelial Neoplasia (CIN) will advance to cervical carcinoma in a few occasions (Trottier *et al.*, 2006). The rate of attack of CIN III injuries is said to be 36% more than 20 years, yet every one of these ladies had been dealt with. In a progression of ladies analyzed by punch biopsy which were not treated, 90% of them created intrusive disease (Schiffman *et al.*, 2011). At first, it was trusted that CIN III had a tendency to create from CIN I and II and just CIN III sores would advance to obtrusive disease. Most creators currently trust that CIN III injuries likely emerge in that capacity. The dangers of intrusion of CIN I and II irregularities have not been unmistakably characterized, while the hazard for CIN I seems, by all accounts, to be significantly less than for CIN III. Unquestionably cervical malignancies are found in a relationship with CIN I variations from the norm.

## MODULE II: PREVENTION OF CERVICAL CANCER AND HUMAN PALPILLOMA VIRUS AND TREATMENT METHODS

**Time:** One and half hour

### Objectives

At the end of the teaching session participants will be able to discuss:

- Primary, Secondary and Tertiary prevention methods of cervical cancer
- Explain the importance of screening in cervix cancer prevention
- Described the various screening methods and diagnosis and conformation of cervical cancer
- Identify the target group for screening
- Describe the various treatment method
- General revision and immediate postintervention test.

**Resources:** Human and Material (Module and Power points)

**Teaching Method:** Group discussion and lecture method

**Introduction:** Establishment of rapport introduction of the topic and arousing participant's interest about the lecture

**Review of Previous Lecture:** Epidemiology of Cervical Cancer

### Primary prevention

Essential counteractive action of cervical disease is constructed basically in light of sound way of life and immunization against HPV. Two sorts of immunizations against HPV contamination are as of now accessible in the market: one acts against HPV

genotypes 6, 11, 16 and 18 (quadrivalent antibody) and the other against genotypes 16 and 18 (bivalent immunization).

HPV vaccination for girls 9–13 years.

Wellbeing data and alerts about tobacco utilize.

Sexuality training custom fitted to age and culture.

Condom advancement/arrangement for those occupied with sexual movement.

Male circumcision.

Healthy eating.

### **Secondary prevention**

Secondary aversion is by screening for precancerous injuries and early finding taken after by satisfactory treatment. Primary systems utilized are cytological screening and visual investigation of the cervix.

### **Screening and treatment of predangerous lesions**

Cervical tumor screening is the orderly utilization of a test to recognize cervical variations from the norm in an asymptomatic populace. Ladies focused on screening may really feel alive and well and see no motivation to visit wellbeing offices. It is by and large acknowledged that sorted out screening is more practical than entrepreneurial screening, improving utilization of accessible assets and guaranteeing that the best number of ladies will profit (WHO, 2013).

### **Key facts about cervical cancer screening and treatment**

Cervical disease screening is the trying for pretumor and growth of ladies in danger.

At least, screening is suggested for each lady 30–49 years old at any rate once in an existence time.

Universally, in 2012, there were about a billion ladies somewhere in the range of 30 and 49 years of age, a large portion of whom have never been screened even once in their life.

Early identification and treatment of precancerous sores can avoid lion's share of the cervical disease cases.

Three distinct sorts of tests are at present accessible:

- i. Conventional (Pap) and Liquid Based Cytology (LBC)
- ii. Visual investigation with Acetic Acid (VIA)
- iii. HPV testing for high hazard HPV composes (e.g., types 16 and 18).

HPV inoculation does not supplant cervical growth screening. In nations where HPV immunization is presented, screening projects may be created or fortified (WHO, 2013).

### **Screening tests**

Screening includes testing an objective gathering (in this unique circumstance, ladies) who are in danger for a given infection (in this specific circumstance, cervical pregrowth). The point of screening is to recognize and reward those individuals distinguished as having early indications of the infection, more often than not by methods for a reasonable, precise, and dependable test that can be connected generally.

## **TRADITIONAL SCREENING METHODS**

### **Cervical cytology**

Conventional cervical cytology, likewise alluded to as the Papanicolaou test, Pap test, Pap spread, and cervical spread. It distinguishes unusual cells in an example taken from the cervix. It includes playing out a speculum examination to uncover the cervix and the Os and gathering cervical cells utilizing a wooden or plastic spatula, or brush. These cells are then spread and settled on a glass magnifying lens slide. The slides are transported to a lab where they are typically handled physically. Each slide is then assessed under the magnifying instrument by a prepared cytology expert.

### **VISUAL INSPECTION (VISUAL INVESTIGATION WITH ACETIC ACID/VISUAL INSPECTION WITH LUGOL'S IODINE) TESTS**

The most recommended and accessible method of screening in low resource settings is called VIA or Visual Inspection with Lugol's Iodine (VILI). Comparatively, using cost-effective methods, these tests involve swabbing the cervix with vinegar (acetic acid) or Lugol's iodine, which will feature contrasts in cell structure and retention rates, turning the pre-carcinogenic cells white (aceto-white cells). On the off chance that iodine is connected to the cervix, precancerous and carcinogenic injuries seem all around characterized, thick and mustard or saffron-yellow. Social insurance suppliers can utilize this technique without

amplification, utilizing a light source and their eyes to recognize a requirement for advance examination, (WHO, 2006). Studies have shown that these are extremely viable strategies for recognizing forerunners or presence of cervical growth; with various investigations demonstrating that VIA/VILI can identify somewhere in the range of 65 and 95% of cases requiring further examination. While not as top to bottom as pap spread test and less successful on present menopausal ladies due on physiological changes, the openness of VIA/VILI make them an extraordinary answer for low asset settings, (Walraven *et al.*, 2002).

## HUMAN PALPILLOMA VIRUS DNA TESTING

HPV DNA testing is another sub-atomic way to deal with screening that identifies the nearness of disease-causing sorts of HPV. This testing approach is most suitable for ladies more than 30 years old when determined disease with these sorts of HPV shows a vital hazard factor for cervical pre-malignancy and tumour. Progressively accessible in high-salary settings, current HPV DNA testing stages are suited for regions with created lab foundation. Much like a Pap test, a cervical example is taken amid a clinical exam (or without anyone else's input inspecting), at that point transported to a research facility for handling. HPV DNA testing, this great screening strategy has ended up being fundamentally more fit for distinguishing positive cases than either the Pap test or spread or visual review strategies. This considers prior and more successful medicines that can results to decreases in the rates of cervical disease and mortality. It additionally acquaints the likelihood of diminishing the number of screenings required in a lady's lifetime (Sankaranarayana, *et al.*, 2009).

## TERTIARY PREVENTION OF CERVICAL CANCER

Tertiary aversion to cervical malignancy includes the conclusion and treatment of affirmed instances of disease. Treatment is through medical procedure, radiotherapy and at times chemotherapy. Palliative care is given to patients when the infection has just achieved a hopeless stage. Treatment of intrusive disease at any age incorporates:

- Ablative medical procedure
- Radiotherapy
- Chemotherapy
- Sheltered and viable outpatient strategies are favored for the administration of precancerous injuries.

## TREATMENT OF PRECANCEROUS LESIONS

Cryotherapy and loop electrosurgical excision procedure (LEEP) are two sheltered, compelling, generally basic and modest outpatient techniques utilized for the treatment of pre-malignancy. The major handy distinction between the two strategies is that LEEP includes extraction of the tissue and consequently, gives a tissue example that takes into consideration histological confirmation of the finding. Then again, cryotherapy is an ablative strategy that includes obliterating the tissue and in this way leaves no example for histology.

## CRYOTHERAPY

Cryotherapy is a moderately basic method that crushes precancerous cells by solidifying the cervix, utilizing compacted carbon dioxide (CO<sub>2</sub>) or nitrous oxide (N<sub>2</sub>O) gas as the coolant. To solidify the sore, the cryoprobe is set on the cervix, guaranteeing that the test covers the whole injury. Cryotherapy is performed utilizing a solitary stop or twofold stop strategy. Single stop includes solidifying for three minutes; twofold stop includes solidifying for three minutes, trailed by a defrost for five minutes, and afterward a second stop for three minutes. It is an outpatient technique that can be performed effortlessly and rapidly (in 15 min or less) without anesthesia. It tends to be securely and successfully performed by general specialists and non-doctors.

Ladies experiencing cryotherapy require clear data and support to ease conceivable tensions about symptoms. Numerous ladies encounter mellow inconvenience, for example, torment or cramping amid or inside a few days after the system. They may likewise encounter wooziness, swooning, or flushing amid or quickly after treatment. The most as often as the possible experienced reaction of cryotherapy is a lavish watery vagina release for up to about a month. Albeit badly designed, ladies can viably oversee it by utilizing a perfect fabric or clean cushions to secure apparel.

## COMPLEXITIES OF CRYOTHERAPY

Complexities related with cryotherapy are negligible in potential. Complexities are amazingly uncommon in ladies treated with cryotherapy. There is additionally no confirmation that cryotherapy is connected to cervical stenosis or has any long haul affect on ladies' richness or pregnancy results – critical contemplations while treating ladies of conceptive age. Cryotherapy is the handiest treatment approach for most low-asset settings, given its straightforwardness and minimal effort. Likewise, it very well may be securely performed in essential care settings by non-doctors; so in settings where screening test results are quickly accessible, ladies can be dealt with amid a similar visit. Different points of interest of cryotherapy are that the hardware

required is generally straightforward, the technique is effortlessly learned, and it doesn't require anesthesia or a power supply. One disservice of cryotherapy is that since it decimates the tissue, no tissue test is accessible to affirm that the whole sore has been evacuated. Moreover, it isn't conceivable to build up whether it is an early obtrusive sore, requiring further treatment. Cryotherapy isn't suitable for treating substantial injuries that can't be secured by the test or sores situated in the endocervical waterway. Additionally, a normal supply of fluid coolant is essential.

## LOOP ELECTROSURGICAL EXCISION PROCEDURE

Often time alluded to as Large-Loop Excision of the Transformation Zone, LEEP uses a thin electric wire as a circle, to expel the strange zone of the cervix. The method is normally done utilizing colposcopic direction under neighborhood anesthesia in an auxiliary or tertiary care setting and requires nearby anesthesia, and a consistent power supply. Extreme draining is a conceivable inconvenience both amid and after the strategy, happening in 1%–4% of patients. More complex gear is required, contrasted with cryotherapy. Contrasting cryotherapy and LEEP on scratch criteria, two preferences of LEEP are that it is a straightforward surgery and that the extracted tissue can be sent for histopathological affirmation, which permits the correct idea of the injury to be resolved and unsuspected smaller scale attacks to be recognized (Carr and Sellors, 2004).

## PALLIATIVE CARE

Guaranteeing that patients with dangerous cervical growth are furnished with help from agony and enduring (both physical and mental), requires assets, unique abilities, and supervision. Powerful palliative care draws in a group of specialists, medical attendants, different authorities, and network individuals who cooperate in wellbeing offices, the network, and homes (Castle, 2013).

## Recommendations for cancer prevention

- Be as lean as possible without becoming underweight.
- Be physically active for at least 30 minutes every day.
- Limit consumption of energy-dense foods. Avoid sugary drinks.
- Eat more of a variety of vegetables, fruits, whole grains, and legumes such as beans.
- Limit intake of red meat (such as beef, pork, and lamb) and avoid processed meats.
- Limit alcoholic drinks.
- Limit consumption of salty foods and foods processed.
- Don't use supplements to protect against cancer.
- Mothers to breastfeed; children to be breastfed.
- And always remember – do not smoke or chew tobacco (World Cancer Research Fund/American Institute for Cancer Research, 2007).

## CONCLUSION

Cervical cancer incidence is declining in developed world, due to uptake and utilization of screening services. Treatment for advanced cancer remains problematic and has poor and discouraging prognosis. Management strategies must rely on prevention and early detection through IEC strategies.

## Postintervention test administration

This is a way of summative evaluation of participants' knowledge on cervical cancer and the preventive measures training.