

# Effect of sensitization on attitude towards cervical cancer screening among of female health workers in the two tertiary health institution in Bayelsa

## Abstract

Cervical cancer affects cells of the cervix, it is caused by types 16, 18 and 45 strains of Human Papilloma Virus. Documented evidence has shown that it is treatable if early diagnosis is made through screening and preventable if vaccination is given at the appropriate time. Female health workers occupy key position in influencing positive health behaviour among female population in issues affecting health including cervical cancer screening. Their positive attitude towards cervical cancer screening is expected to motivate women thereby causing a reduction in high incidence, morbidity and mortality from cervical cancer disease. The aim of the study was to assess effect of sensitization on attitude of participants towards cervical cancer screening. Two tertiary health institutions in Bayelsa state were purposively selected, (Niger Delta Teaching Hospital, Okolobri –intervention group and Federal Medical Centre, Yenegoa – comparison group). Study adopted quasi-experimental research design, proportionate stratified random sampling technique was used to select 140 participants. Adapted validated questionnaire titled ‘attitude scale for cancer screening by Yildirim was the instrument used for data collection. Face and content validity of the instrument were ascertained, while reliability indices were established using test-retest approach. Score of 0.75 was obtained using Spearman Brown Statistical Formulary. Pre-test and post-test were administered to both groups while only intervention group was exposed to sensitization intervention package. Data was analysed using Statistical Package for social Sciences version 20.0 and inferential statistics of Analysis of Covariance. Findings showed that sensitization intervention had positive effect on attitude of participants towards cervical cancer screening with an attitudinal mean change of  $-0.07$ ,  $SD=0.47$ (comparison group), and  $0.31$ ,  $SD=0.53$  (intervention group). Profession had no significant influence on attitude of participants towards cervical cancer screening, ( $p>0.05$ ). Study concludes that sensitization intervention had positive effect on attitude towards cervical cancer screening among participants while profession had no influence on their attitude. Thus, study recommends the adoption of this simple, effective and sustainable sensitization intervention package to health care policy makers and workforce in general.

**Keywords:** cervical cancer, female health, human papilloma virus, morbidity and mortality

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## Background to the study

Cervical cancer is a type of cancer arising from the cells of the cervix, caused by strains of the human papilloma virus (HPV), which starts from a precancerous cellular changes and may be mild with subsequent regression or progress to abnormal growth of cells (severe dysplasia) which become invasive spreading to other parts of the body.<sup>1</sup> Changes in cervical cells may commence when the woman is between 20 and 30 years and may take more than 20 years to develop into cancer.<sup>2,3</sup> This long window period provide ample opportunity for early detection and appropriate intervention, which the developed countries have utilized to reduce the incidence by 70% in the last five decades.<sup>4</sup> This reduction was achieved by the introduction of pap smear-based programs in the 1960s.<sup>2,5</sup>

Cervical cancer is both health and social issue mostly affecting young women (aged 35 to 59 years) who are sexually active and raising children,<sup>6</sup> and this exposes about 40 million women in Nigeria from the age of 15 years and above to the risk of developing cervical cancer.<sup>7</sup> It also poses a big problem from an economic point of view because of high direct costs for diagnostics, treatment, prophylaxis, as well as indirect costs generated by premature mortality and disabilities. In the family and societal structures at large, women

play important roles in the areas of procreation, child rearing and general productivity, so, any disease condition that dislodges them at this stage sends very negative rippling effects on the entire fabrics of these family and societal structures. Health care professionals, (female health workers inclusive) serve as important predictors of the utilization of health care services such as cervical cancer screening. Hence, in the case of cervical cancer, their negative attitude and poor uptake of cervical cancer screening (CCS) could be implicated in the high incidence of cervical cancer, thus making it to become the 2nd most genital cancer killer diseases among women especially in the developing countries, Nigeria inclusive. This was corroborated by Ndejjo, et al.,<sup>8,9</sup> report that, female health worker’s negative attitudes exposed their insensitive and rude behaviours which serve as clear disincentives to women in the utilization of maternal and child health services including cervical cancer screening uptake.

Cervical cancer is the leading cause of morbidity and mortality among women, the second most common preventable as well as treatable forms of cancer, yet remains a threat to women’s lives and wellbeing.<sup>1</sup> The guideline also reported that, ‘in 2020, an estimated 604 000 women were diagnosed with cervical cancer worldwide and about 342 000 women died from the disease. Cervical cancer is the most

commonly diagnosed cancer in 23 countries and is the leading cause of cancer death in 36 countries, the vast majority of these countries are in sub-Saharan Africa, Melanesia, South America, and South-Eastern Asia.<sup>10</sup> Nearly 1.5 million cases of clinically recognized cervical cancer globally, and the developing countries bear the brunt of this disease with 250,000 death, accounting for 85% of global burden.<sup>1,5,11</sup> Sub-Saharan African is accountable for 19 out of the top 20 countries with high prevalence of cervical cancer, while Africa, remains one of the top twenty continents with highest burden of cervical cancer in 2018.<sup>1</sup> Currently, every year, 14, 089 women are diagnosed with cervical cancer and 8,240 die from the disease globally.<sup>5</sup>

Every year 14,550 Nigerian women are diagnosed with cervical cancer out of which 9,659 die from the disease, and is projected that by 2025, an estimated 22,914 women would develop cervical cancer annually out of which 16,261 will die.<sup>10,12</sup> About a decade and half ago Uzoigwe et al,<sup>13</sup> reported that, there were 2,236 malignancies diagnosed; 302 (13.5%) were malignancies of the genital tract. Out of this 302 cases, 188 (62.3%) were carcinoma of the cervix which constituted majority of the 302 diagnosed malignancies of the female genital. This trend has remained the same even in the recent times. Cervical cancer has accrued huge disease burden which transcends the physical, social and financial aspects of life. It is responsible for the loss of 2.4 million weighted years of Life lost among women aged 25 - 65 years in developing countries as compared to only 0.3 million years of Life lost in the developed countries.<sup>12</sup>

In May 2018, there was a call for the elimination of cervical cancer by Dr Tedros Adhanom Ghebreyesus, World Health Organization (WHO) Director-General, thus, in November 2020, the Global strategy to accelerate the elimination of cervical cancer as a public health problem was launched which includes the following targets for each of the three pillars for 2030, (WHO, 2021). These target towards reduction of mortality secondary to cervical cancer includes:

- (i) Increase vaccination coverage against HPV between the ages of 9-16 (before the age of sexual debut), to provide 90% human papillomavirus (HPV) vaccination coverage of eligible girls,
- (ii) Early detection through increase/regular screening coverage of 70% with a high-performance test and
- (iii) 90% appropriate management of women with a positive screening test or a cervical lesion.<sup>1</sup>

Numerous technologies have been developed, tested and proven safe and effective to detect and treat precancerous lesions. These include Pap smear, High-risk HPV DNA testing, visual inspection with acetic acid or Lugol's iodine (VIA/VIL 1) Colposcopy, core biopsy, cryotherapy, large loop excision of the transformation zone and cold knife conization among others. These interventions have proven that elimination of cervical cancer is within reach. However developing countries like Nigeria still experience pitfalls in achieving reduction in prevalence and mortality in the country thereby still accounting for high mortality rate (20.3%).<sup>14</sup>

Cervical cancer screening (CCS) is a health intervention used on population of women at risk of developing cervical cancer. It is an effective technique for early detection of the gradual changes in the cervical cells-cervical intraepithelial neoplasia, (CIN 1-3) before it progresses to cervical cancer thus providing opportunity for early detection through screening.<sup>15,16</sup> CCS is not under taken to diagnose the disease but to identify individuals with a high probability of developing the disease at the early (precancerous) stage. This early detection and treatment will prevent the disease from developing.

WHO,<sup>16</sup> guideline recommended an alternative method which is 'screen-and-treat' as a strategy in which treatment decision is on the bases of screening test and usually treatment is provided as soon as possible. Although screening for cervical cancer has been introduced in developing countries, limited success has been achieved. Poor coverage is associated with inability of developing countries to implement comprehensive screening programs with Pap smear. Moreover, where it is accessible only few women have access to it mostly due to programme being integrated into maternal and child health program and family planning where those screened are not at high risk.

Cervical cancer screening is performed by qualified health workers. They are professionals and believed to be well and better informed on health issues compared to women in other spheres of life. Therefore, they should be role models for other women, by being effective agents in creating an extensive and intensive awareness on importance of cervical cancer screening as well as provide encouragement and support for cervical cancer screening uptake. One of the ways they can achieve this is by taking advantage of the women's visit to health care facility and engaging them on one-on-one health education on cervical cancer and its screening. This can take place at every level of contact and through other effective communication channels such as face-to-face contact at the health facility, phone calls and/or during home visits. They are to enlighten the public on these health services through their attitude which are crucial in helping and promoting patient's uptake of such services and also boosts women's confidence.<sup>17,18</sup> They are knowledgeable about the negative impact of cervical cancer on women yet, this does not translate into a positive attitude towards cervical cancer screening. Although health workers are aware of morbidity and mortality associated with cervical cancer, the trend of their attitude towards cervical cancer screening over the years remains a challenge.

When female health workers show positive attitude to any health intervention the successes are remarkable, for example, child survival strategies such as, family planning, immunization and exclusive breast feeding.<sup>19,20</sup> The remarkable successes include reduction in child mortality from gastro enteritis and from the six childhood killer diseases as well as a great improvement in school-age verbal intelligent quotient.<sup>12,21</sup> Unfortunately, the challenge with cervical cancer screening is that it has not received such positive attitudes and invariably the uptake. This constitutes big problem that needs urgent attention because of the prevailing high rate of morbidity and mortality from cervical cancer in most developing countries including Nigeria and by extension Bayelsa state. Reports have shown that the prevalence rate in Bayelsa state has remained same for over a decade. Onyije, et al.,<sup>6</sup> reported a prevalence rate of 1.5% in 2011 while Allagoa, et al.,<sup>22</sup> reported 1.25% incidence rate, this is a cause for concern. Studies have revealed high level of knowledge of cervical cancer among health workers; yet, this knowledge has not been translated into a positive attitude towards cervical cancer screening.<sup>23</sup> This prompted the researchers to use the strategy of sensitization to assess its effect on attitude towards CCS among the participants.

## Materials and methods

### Study design

The study adopted quasi-experimental design. Quasi-experimental studies evaluate the association between an intervention and an outcome using experiments in which intervention is not randomly assigned.<sup>24</sup>

## Area of study

The study was carried out in Niger Delta University Teaching Hospital (NDUTH) Okolobri, (intervention setting), and Federal Medical Centre Yenegoa, (control setting) all in Bayelsa State.

## Population of study

The target population for this study is professional female health workers of Nursing Science, Medicine, Medical laboratory science, Pharmacy and Medical Radiography in the study institutions who have clinical contacts with patients (hands on). The intervention group has a population of 86 while the control group has 84 making it a total population of 170 participants for the study.

## Sample

Sample size was 140 participants. Being a heterogeneous population, sample size for each stratum (profession) was calculated using proportionate stratified random sampling. This was done for each study institution, (i) NDUTH=86; FMC=84

## Instrument for data collection

Researcher, developed questionnaire from an adapted and modified scale which was used for data collection. It was a new five-point Likert scale called 'Attitude scale for cancer screening', developed by Yildirim, et al.<sup>25</sup> The scale was developed to measure people's attitude towards cancer screening, it measures responses on a scale of 1-5 (5: completely agree; 4: partially agree; 3: neither agree nor disagree; 2: partially disagree; 1: strongly disagree). Being guided by the specific objectives of the study, the researcher modified the scale to measure the participants' responses on a 4-point Likert scale (4: strongly agree; 3: agree; 2: disagree and 1: strongly disagree). The modified scale was used on 13 items to elicit information pre and post intervention. The minimum score was 13 and maximum 52, scores near 13 post intervention indicated negative attitude, (sensitization had no effect on the attitude of participants) while scores near 52 indicated a positive attitude, (sensitization had an effect on the attitude of participants). During the calculation of scores, the items with statements of negative meaning (6, 7, 9, 10 and 11), were inversely coded. These scales was preferred to other scales because it gives scored results, more intuitive and occupy little space.

## Validity of the instrument

Content and face validity of the instrument were ascertained.

## Reliability of instrument

Test-retest method was used to ascertain the reliability of the instrument. Ten percent (10%) of the sample size of the study population in University of Port Harcourt Teaching Hospital (UPTH), Rivers State were used. Fourteen (14), copies of the instrument were administered and retrieved from same participants after an interval of two (2) weeks. Reliability coefficient was computed using Spearman Brown's statistical formula and a value of 0.75 was obtained which was considered adequate for the study.

## Ethical consideration

Ethical approvals for the study were obtained from the two study institutions and the participants. Ethical issues addressed in the study includes: free and fully informed consent and non-maleficence like maintaining privacy and anonymity. Participants can choose to continue or withdraw without offering any reasons; also written

informed consent was obtained from the participants before data collection tool was administered. Respect to participants' information was maintained and confidentiality of the participants' information was respected during and after completion of the study by non-inclusion of self-identifying characteristics in the questionnaire.

## Procedure for data collection

Data collection was done in three phases which lasted for 8 weeks: Pre- intervention, Intervention and Post intervention.

### Pre-intervention phase (lasted for two weeks)

#### Weeks 1 & 2 (recruitment of research assistants and study participants)

The approval letter was used to obtain permission from the unit heads of the various units that met the inclusion criteria for the study for selection of participants. They were approached and their consent to participate in the study was sought and gained. All those that met the inclusion criteria and willingly consented were recruited for the study. Information and consent forms containing Participant's details and contacts were administered and retrieved from them for subsequent communication. This lasted for two weeks (one week in each study group) for the required number of participants for each stratum to be completed. The researcher recruited eight (8) volunteer health workers from the institutions under study.

NDUTH; one (1) Pharmacist, 1 Medical Laboratory Scientist (colposcopy unit coordinator), 2 Chief Nursing officers (Matrons in-charge of ANC and family planning unit), 2 senior Nursing officers and 1 Nursing officers I and 1 Medical officer (Reg. 1)

FMC; one (1) Assistant Director Nursing services, 3 Chief Nursing Officers, 2 Medical Officers (Reg. 1), 1 Pharmacist and 1 Nursing officer I

The volunteers assisted in administering and retrieving the questionnaire to the participants in each setting respectively both pre and post intervention.

### Intervention phase (intervention group only, lasted for five (5) weeks)

#### Week 3

#### Highlights of activities

#### Highlights included; (i) seminar, (ii) playlet and (iii) question and answer sessions

##### i) Seminar

Researcher with the assistance of a trained cervical cancer screening provider organized a one day seminar for the participants (intervention group) which featured lecture, discussion and interactive sessions on cervical cancer and its screening covering topics like; indication of cervical cancer insitu, how to identify cervical transformation zone (CTZ),; stages and progression of cervical cancer disease after HPV infection; levels of prevention of cervical cancer; taking a pap smear for HPV testing; the cervix before and after VILI /VIA tests showing negative and positive results, among other educative topics. This was done to provide opportunity for physical contact with the participants as well as harness other forms of sensitization strategies which formed the bulk of the reminders sent through the social networks as a follow-up in other to increase efforts to actualize the specific objectives of the study.

## ii) Short playlet

A playlet by 500 level undergraduate student nurses of Faculty of Nursing sciences, Niger Delta University, Bayelsa, on: 'Attitude Towards Cervical Cancer Screening among Female Health Workers: An Issue for Concern'.

## iii) Question and answer (interactive session)

Participants were given opportunities to ask questions and express their concerns. Some of the participants answered some of the questions and made useful contributions.

These served as instruments to arouse participants' interest and reawaken their consciousness to their obligations as members of their various professions working as a team for the healthy living of a vulnerable population they are serving especially the womenfolk.

## Week IV

Sensitization using major highlights of the seminar as presented in the boxes continued. This was done twice in week four (IV), (intervention group only).

## Week V

Activities of week IV continued more frequently. It was done 3 days in week V.

## Week VI

Activities of weeks IV and V were maintained at more frequent intervals. It was done four days in week VI for the intervention group. Post-test was done for the control group, the same questionnaire used for pre-test was also used for post test data collection from the same participants, also free cervical cancer screening was done for them. The researcher with the assistance of the trained cervical cancer screening provider, assistant director of nursing services (admin. In-charge of Education Unit) and Matron in-charge of family planning clinics of FMC conducted the free screening as an appreciation for participating in the study and to also arouse their consciousness to their duty to the general public especially the women.

## Week VII

Activities of weeks IV, V, and VI (for intervention group only) continued more frequently on daily basis.

## Week VIII

### Post intervention phase for the intervention group

Highlights of activities (i) post-test (ii) free CCS (iii) messages of appreciation

- i. Post-test: researcher and the research assistants conducted the post test. The same questionnaire used for pre-test was also used for data collection from the same participants post intervention.
- ii. Free cervical cancer screening: researcher with the support and assistance of the trained cervical cancer screening provider, Matrons in-charge of Ante natal and family planning clinics as well as co-ordinator of colposcopy unit of NDUTH (intervention group), conducted a one day CCS using VIA testing for participants who voluntarily presented themselves for the test. This was done as an appreciation for participating in the study. Also, it served for assessing the effect of sensitization which the participants underwent for 5 weeks (weeks 3- 7).
- iii. Messages were sent to appreciate participants both those that presented for screening and those that did not present. This was

done for both study groups.

## Data analysis

Data were checked with the aid of computer, collated and subjected to descriptive statistics to determine frequencies and percentages, (for categorical variables); Mean and standard deviation, (for continuous variables). Inferential statistics of Analysis of Covariance (ANCOVA) was used to compare the groups and test the effectiveness of the intervention. Significant or concomitant difference in the pre-test scores between the two groups necessitated the use of ANCOVA. Furthermore, ANCOVA is appropriate when the mean score on pre-test in each group indicates a significant difference between the groups due to non-randomization, thus, ANCOVA is often used in an attempt to compensate for not having made random assignment of subjects to groups.<sup>26</sup>

Data were computed using Statistical package for social sciences (SPSS) version 20.0 statistical software for data entry, editing and analysis. Probability value less than 0.05 was considered statistically significant, chi-square test was used to compare categorical variables between the intervention and control group.

## Results

The result from Figure 1 shows the summary of descriptive statistics of the effect of sensitization on the attitude of female health workers towards cervical cancer screening. It shows that in the control group, the pre-attitude mean rating of the female health workers towards cervical cancer screening was 2.53, SD=0.35 whereas their post-attitude mean rating was 2.47, SD=0.32 and their mean attitudinal change was -0.07, SD=0.47. The result further showed that in the experimental group, the pre-attitude mean rating of female health workers towards cervical cancer screening was 2.54, SD=0.39 whereas their post-attitude mean rating was 2.85, SD=0.35 and their mean attitudinal change was 0.31, SD=0.53.

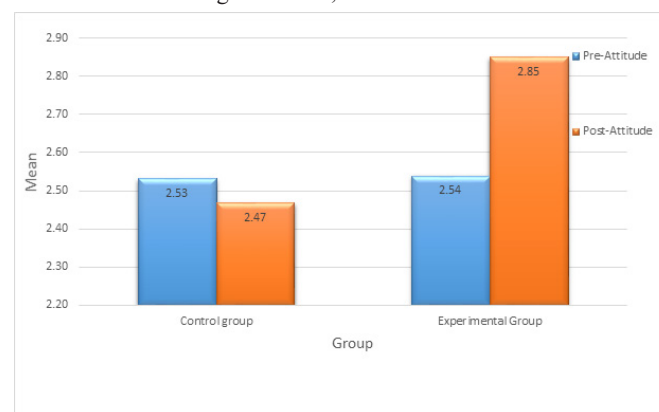
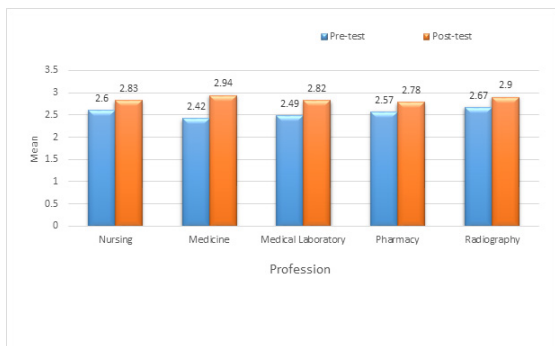


Figure 1 Effect of sensitization on the attitude of female health workers towards cervical cancer screening.

Influence of participants' profession on their attitudes toward cervical cancer screening when sensitized.

The result from Figure 2 shows the summary of descriptive statistics on the influence of participants' profession on their attitude toward cervical cancer screening when sensitized. The mean attitudinal change of female health workers toward cervical cancer screening were: Nursing 0.23, SD= 0.55; Medicine 0.53, SD=0.50 whereas that of those who studied Medical Laboratory Science was 0.33, SD=0.46, Pharmacy had a mean score of 0.21, SD=0.70 while that of radiographers was 0.23, SD=0.20.



**Figure 2** Influence of participant’s profession on their attitude towards cervical cancer screening.

**Table 1** Effect of sensitization on female health workers’ attitude towards cervical cancer screening

Source	Type III sum of squares	df	Mean square	F	Sig.	Partial Eta squared $\eta^2$
Pre-Attitude	0.001	1	0.001	0.013	0.909	0
Intervention	4.075	1	4.075	36.133	0	0.251
Error	12.179	108	0.113			
Total	795.775	111				
Corrected Total	16.257	110				

a. R Squared = .251 (Adjusted R Squared = .237)

**Hypotheses 2: There is no significant influence of female health workers’ profession on their attitude towards cervical cancer screening when sensitized**

The result from Table 2 shows the summary of Analysis of Covariance (ANCOVA) on influence of female health workers’

profession on their attitude towards cervical cancer screening when sensitized. It shows that there is no significant influence of female health workers’ profession on their attitude towards cervical cancer screening when sensitized ( $F_{4, 47}=0.302, p=.875$ ). The null hypothesis three was retained at .05 level of significance.

**Table 2** Influence of female health workers’ profession on their attitude towards cervical cancer screening when sensitized

Source	Type III sum of squares	Df	Mean square	F	Sig.	Partial Eta squared $\eta^2$
Pre-test	3.71E-05	1	3.71E-05	0	0.987	0
Profession	0.159	4	0.04	0.302	0.875	0.025
Error	6.175	47	0.131			
Total	436.982	53				
Corrected Total	6.336	52				

**Discussion of findings**

**Attitude of female health workers towards cervical cancer screening pre and post sensitization**

The study revealed that at pre- intervention participant’s attitude towards cervical cancer screening (CCS) both in the control (2.53, SD=0.35) and intervention groups (2.47, SD=0.32), were almost the same. This indicates that both groups had similar attitude towards CCS. This finding showed that they had negative attitude towards CCS. This is shown in their not being; interested to be screened, active in CCS activities, advocate for CCS, interested to recommend/ refer women for screening, among others. Such attitude affects them and the women in general who form the majority of their health care services consumers.

Result also revealed attitude of participants post intervention, (control and intervention group). Findings showed that control group

had a post intervention attitude mean rating of 2.47, SD=0.32, while intervention group had a post- intervention attitude mean rating of 2.85, SD=0.35. This show a mean attitudinal change of -0.07, SD=0.47 for control group while intervention group had a mean attitudinal change of 0.31, SD=0.53. This finding is an indication that there was attitudinal change difference between the two groups. The attitudinal change among the intervention group increased by 0.31 while that of the control group decreased by -0.07. The observable change in the intervention group is attributed to the sensitization intervention which only the intervention group received.

Female health workers are knowledgeable and should utilize their wealth of knowledge to motivate other women. Because their attitude toward health- related issues is crucial in encouraging and promoting patient’s attitude towards such services. Thus their attitude towards CCS will affect quality of information, education, and awareness they give to the women since experiential knowledge is the best teacher.

## Influence of profession on attitude of female health workers towards cervical cancer screening before and after intervention

Findings of the study revealed pre and post intervention attitudes of the participants (intervention group) based on their profession. The study revealed the mean attitudinal change values of each profession thus: Nursing 0.23, SD=0.55; Medicine 0.53, SD=0.50; Pharmacy 0.21, SD=0.70; Medical Laboratory Science 0.33, SD=0.46 and Radiography 0.23, SD=0.20. This indicates that the variation in mean attitudinal change among each profession is almost the same, which shows that attitude of Nurses towards CCS is almost the same attitude of Medical Doctors or pharmacists.

Finding showed that participant's negative attitude towards CCS cuts across all the profession in this study, their reasons among others were that it is not their area of specialty.

## There is no significant relationship between sensitization and attitude of female health workers towards Cervical Cancer Screening

Result showed that there is a significant relationship between sensitization and attitude towards cervical cancer screening among female health workers, (F1, 113=39.133, P=0.00). Thus, null hypotheses one (H<sub>0</sub>) was rejected at 0.05 significance level.<sup>27</sup>

## Conclusion

Majority of study participants were Nurses (52.3%), at pre-test female health workers had negative attitude towards CCS, participant's profession had no significant influence in their attitude towards CCS. At post- test, participants' (control group) attitude towards CCS decreased to -0.07 while the intervention group improved with a mean attitudinal change of 0.31, SD= 0.47. There is a significant relationship between sensitization and attitude towards cervical cancer screening among the studied population.

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## Conflicts of interest

The authors declare that they have no competing interests.

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