

Full Length Research Paper

Vaccination education among female secondary school teachers for prevention of cervical cancer in Ondo State, Nigeria

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ABSTRACT: This study investigated cervical cancer vaccination education among female secondary school teachers for the prevention of cervical cancer in Ondo State, Nigeria. Quasi experimental research design of pre and post-intervention with control group was used for the study. The population for the study comprised female secondary school teachers in Ondo State, Nigeria. The sample for the study was 240 consented participants selected among female secondary school teachers in the state. After receiving ethical approval from the Ondo State Ministry of Health, Ministry of Education, and the Federal Medical Centre, Owo Research and Ethics Committee, the sample was chosen. Multi-stage sampling technique was used to select the participants. The validity of the instrument was established. The correlation coefficient index of 0.80 was obtained and the instrument was considered valid. The reliability coefficient of 0.84 was obtained and was considered good and reliable for the study. The research questions raised were answered

descriptively using percentage, mean, standard deviation while all the hypotheses were tested at a 0.05 level of significance using inferential statistics. Based on the analysis of data of this study, there was a significant main effect of treatment on cervical cancer vaccination education among secondary school female teachers. Based on the findings of this study, it was therefore concluded that cervical cancer vaccination education should be incorporated into the school curriculum to create adequate awareness, early detection, and prevention of cervical cancer to enhance a good prognosis. As a result, the researcher recommended that young schoolgirls be fully vaccinated, educated, and a part of services provided in school clinics in order to reduce cervical cancer morbidity and mortality.

Keywords: Cervical cancer, vaccination, commodity supply, prevention, female

INTRODUCTION

Young girls of age 9-13 years should be vaccinated with three doses of HPV Vaccine before first sexual exposure and women of child bearing age should had three vaccines within six months to prevent them from having cervical cancer that are sensitive to those vaccines. In addition, booster doses of the following vaccines were also incorporated into the scheme –tetanus, diphtheria, Hepatitis B, meningococcal, typhoid and rubella booster doses. More importantly young girls should be vaccinated before exposure to first sexual activity. The 10 to 20 year lag between pre-cancer and cancer offers ample

opportunity to screen, detect and treat pre-cancer and avoid its progression to cancer. However, immune-compromised women (e.g. those living with HIV) progress more frequently and more quickly to pre-cancer and cancer. There are several available and affordable tests that can effectively detect pre-cancer, as well as several affordable treatment options. HPV vaccines are now available; if given to all girls before they are sexually active, they can prevent a large portion of cervical cancer (NisreenArif and Farzana, 2015). The HPV vaccination strategy offers valuable opportunities for integration with

other school health services and adolescent-friendly primary health care services. Intervention scan include screening for common nutritional deficiencies, physical disabilities and illnesses, as well as providing preventive health information, such as information on the dangers of tobacco use, on contraception to prevent unplanned pregnancies, and on condom use for the dual purpose of preventing pregnancies and STIs, including HIV/AIDS (Winnie et al., 2016). Vaccination as one of important component of cervical cancer prevention emphasized that women of child bearing age should had three vaccines within six months to prevent them from having cervical cancer that are sensitive to those vaccines. In addition, booster doses of the following vaccines were also incorporated into the scheme—tetanus, diphtheria, Hepatitis B, meningococcal, typhoid and rubella booster doses. More importantly young girls should be vaccinated before exposure to first sexual activity. The researcher observed that the population at risk are deficient in knowledge of cervical cancer prevention, hence the high mortality rate in Nigeria .Until there is universal access to cervical cancer education in Nigeria to create awareness for prevention and control of cervical cancer to address present inequities to bridge the large disparities in incidence rates and mortality rates that exist in different settings. The prevalence of HPV is very high among young, sexually active adult women. The primary determinant of level of sexual activity in a given population is its sexually transmitted disease (STD) rate. According to WHO (2016), HPV is transmitted through sexual intercourse, with peak prevalence in women of the 22 -25 year age group. Cervical cancer is a potentially preventable disease as cytological screening pap smear helps to detect this disease in early stages.

Statement of problem

Vaccination as one of important component of cervical cancer prevention emphasized that women of child bearing age should had three vaccines within six months to prevent them from having cervical cancer that are sensitive to those vaccines. In addition, booster doses of the following vaccines were also incorporated into the scheme—tetanus, diphtheria, Hepatitis B, meningococcal, typhoid and rubella booster doses. More importantly young girls should be vaccinated before exposure to first sexual activity. The Ondo State Government had embarked on series of intervention programmes like Abiye programme, special immunization programmes for women of child bearing age, health ranger scheme, mobile emergency clinic, establishment of various categories of health facilities ranging from basic health centre to Ganni Fawenhinmi Diagnostic centre rated by WHO (2016) as the best hospital in Africa to curtail the menace of mortality and morbidity among women of child bearing age despite all these interventions the cervical cancer mortality is on the increase.

Base on this background, there is need for this study to evaluate the vaccination education among female secondary school teachers for prevention of cervical cancer in Ondo State, Nigeria.

Purpose of the study

- (i) Assess the effect of health education intervention programme on the knowledge of the participants on vaccination towards cervical cancer prevention.
- (ii) Assess the interaction effect of cervical cancer education on the knowledge of the participants on commodity supply towards cervical cancer prevention.
- (iii) Evaluate the effect of cervical cancer education programme on vaccination towards prevention of cervical cancer.

Research questions

- 1 What is the attitude of the participants towards vaccination for the prevention of cervical cancer?
2. What is the level of knowledge of women of child bearing age as regards vaccination towards prevention of cervical cancer?

Research hypotheses

The following research hypotheses were formulated to guide the study and were tested at 0.05 level of significance:

1. There will be no significant main effect of treatment on attitude of the participants on cervical.
2. Cancer vaccination and religion affiliation on cervical cancer prevention.
2. There will be no significant interaction effect of treatment on knowledge of the participants on vaccination for cervical cancer prevention.

Significance

The knowledge of the health effects of late detection of cervical cancer could assist the health policy makers and in the development of health public infrastructure s for easy accessibility to all women. Findings of this study could benefit cervical cancer survivors in maintaining a healthy diet and staying active which is a process that continues after treatment ends. The findings of this study could assist clinicians to adopt preventive strategies at all levels: primary, secondary and tertiary levels of prevention. The Federal, State and Local Government could also benefit from the findings in providing

Table 1: Attitude of the participants towards vaccination.

Variables on attitude towards vaccination	Control group mean score	Treatment group mean score	Variation in the mean score
. Female child must have at least three HPV Vaccine before first sexual intercourse	1.30	1.88	0.58
HPV Vaccine should be integrated into routine immunization	1.24	2.77	1.53
HPV Vaccine should be available in all health facilities	1.25	2.87	1.62
School girls should be given HPV Vaccine in the school based health facility	1.28	3.85	2.57
Grand total	1.27	2.84	1.58

Table 2: Knowledge of participants on vaccination.

Variables on knowledge on vaccination	Control group mean score	Treatment group mean score	Variation in the mean score
35. There is vaccine for the prevention of Cervical cancer	1.29	1.83	0.54
36. Female child should receive 3 doses of Human papilloma virus vaccine before first sexual intercourse	1.25	1.85	0.60
37. Adult female who missed vaccination before first sexual intercourse should have three (3) make up doses within six (6) months	1.29	1.88	0.59
38. Vaccination is not useful if the cancer has reached the final stage of progression	1.22	1.80	0.58
Grand total	5.05	7.36	2.31

comprehensive care and support programmes to women confronted by the challenges of living with cervical cancer.

METHODOLOGY

The research design for this study is quasi experimental research design of pre-test post-test with control group design was used for this study. The treatment effect is determined by the change in the dependent variable in the control area from the change in the dependent variable in test area. The target population for this study were all women of child bearing age attending health facilities in Federal Medical Centre, Owo; UNIMEDTHC, Ondo; UNIMEDTHC, Akure and SSH, Okitipupa. The sample for this study was 240 women between 18 - 45 years of age in Ondo State, using random and purposive sampling technique to select one secondary health institution in each of the three Senatorial Districts in the State for the treatment group and random sampling technique was used for the selection of the control group

for the study from the remaining health facilities. There were 120 participants in the treatment group and 120 in the control group. The instrument for the study was self developed questionnaire. The validity of the instrument was established and found to be 0.85. The reliability of the instrument was established and found to be 0.88. The researcher administered the instrument to all the participants before and after the introduction of the treatment. The variation in the scores after the treatment revealed the main treatment effect for the study. The data generated were analyzed using descriptive statistics for all the research questions generated for the study while inferential statistics were used for all the hypotheses formulated for the study. All the hypotheses were tested at 0.05 level of significance.

RESULTS

Table1 shows that the attitude of the participants in the treatment group towards vaccination improved towards the positive side of the attitudinal scale. The mean score

Table 3: Summary of ANOVA on attitude towards screening practices and religious affiliation.

	Sum of Squares	Df	Mean Square	F-cal	F-tab	P	Decision
Between Groups	43.210	1	14.403	2.162	3.59	<0.05	Not Significant
Within Groups	772.782	118	6.662				
Total	815.992	119					

Table 4: Summary of t-test on knowledge of the participants on vaccination for cervical cancer prevention.

Knowledge on vaccination	N	Mean	SD	Std. Error	t-cal	t-tab	Remarks
vaccinated	93	20.82	4.92	0.51	0.71	0.40	significant
Not vaccinated	27	21.78	5.43	1.05			
Total	120	21.03	5.03	0.46			

variation on the item Female child must have at least three HPV Vaccine before first sexual intercourse between the treatment group and control group is 0.58. The mean score variation on the item HPV Vaccine should be integrated into routine immunization between the treatment group and control group is 1.53. The mean score variation on the item HPV Vaccine should be available in all health facilities is 1.62. The mean score variation on the item school girls should be given HPV Vaccine in the school based health facility is 2.57. The grand mean score variation between the treatment group and control group is 1.58 showing positive attitude towards vaccination following the treatment given to the participants. Table 2 shows a significant increase in the knowledge of the participants in the treatment group on all items on knowledge of vaccination towards cervical cancer prevention. The control group means score on item there is vaccine for the prevention of cervical cancer was 1.29 and treatment group mean score was 1.83. Female child should receive 3 doses of Human papilloma virus vaccine before first sexual intercourse with mean score of 1.25 for the control group and mean score of 1.85 for the treatment group post intervention. Adult female who missed vaccination before first sexual intercourse should have three (3) make up doses within six (6) months with control group mean score of 1.29 and treatment group mean score of 1.88 post intervention. Vaccination is not useful if the cancer has reached the final stage of progression with control group mean score of 1.22 and treatment group mean score increased to 1.80 post intervention. It was observed that there is a positive increase in the knowledge of all participants on the need for vaccination for cervical cancer prevention. This result further indicated that the intervention has helped in the increase of knowledge of cervical cancer prevention through vaccination.

Ho 1: There will be no significant interaction effect of treatment on attitude of the participants on cervical

cancer screening practices and religious affiliation on cervical cancer prevention.

Table 3 shows that religious affiliation has no significant interaction effect of treatment in the attitude of the participants on screening practices towards cervical cancer prevention [F (1, 118) F-cal of 2.162; $p < 0.05$] less than F-tab of 3.59 at 0.05 level of significance. Therefore, hypothesis 1 is accepted. This implies that religious affiliation of the participants have no significant treatment interaction effect in the attitude of the participants on screening practices towards cervical cancer prevention.

Ho 2: There will be no significant interaction effect of treatment on knowledge of the participants on vaccination for cervical cancer prevention.

Table 4 indicates that knowledge of participants on vaccination for cervical cancer prevention have significant interaction effect of treatment towards prevention of cervical cancer. The t-cal of 0.71 is greater than t-tab of 0.40 at 0.05 level of significance. Therefore, hypothesis 2 was rejected. This implies that the knowledge of the participants on vaccination is significant towards prevention of cervical cancer.

DISCUSSION

The participants indicated their interest and willingness on various screening methods available and were eager to educate those around them; to vaccinate all their female girls and advocate for early reporting and detection to ensure good prognosis. The study revealed that participants with age range 25 – 34 and 45 – 54 showed significant increased in their knowledge and more positive attitude towards cervical cancer prevention post intervention. The present finding is in conformity with the study of Hilton et al. (2003) and Thomas et al. (2005) who stated that barriers to screening include increased

age, race, ethnicity, low level of education, low income, decreased access to health facility, insufficient funding and unfavourable attitude towards screening practices. This finding is in agreement with the study conducted by Nygard et al. (2007). The present study negates the study conducted by Mutyaba et al. (2007); in their study it was documented that ignorance about cervical cancer, cultural constraint and poor attitude toward cervical cancer screening occurred despite advocacy programme and public enlightenment campaign. The variability in this study could be that the cervical cancer education intervention programme is more intensive and educative than mere advocacy programme, mere sensitization and public campaign. The cervical cancer education intervention package is well structured, tailored and based on sound theories that helped the participants to take informed decision. This present finding is in agreement with the finding of Hoque and Hoque (2009) where the respondents showed significant improvement in the knowledge and attitude towards vaccination for the prevention of cervical cancer. The finding on the effect of health education on knowledge of the participants on commodity supply, integration and screening practices towards cervical cancer prevention showed significant difference, which is consistent with that of Tay (2012) and Ubajaka et al. (2015), asserting that vaccination and Pap smear examination reduces the incidences of cervical cancer. The knowledge of the respondents on the need for vaccination for the prevention of cervical cancer, number of doses for adequate prevention of cervical cancer increased significantly which is in conformity with the work of Tay (2012).

Conclusion

It could be concluded that young girls should be given three doses of HPV vaccine before exposure to first sexual debut or make up doses should be given to those who missed the standard laid down rules on HPV vaccine. The HPV vaccination strategy offers valuable opportunities for integration with other school health services and adolescent-friendly primary health care services. Interventions can include screening for common nutritional deficiencies, physical disabilities and illnesses, as well as providing preventive health information, such as information on the dangers of tobacco use, on contraception to prevent unplanned pregnancies, and on condom use for the dual purpose of preventing pregnancies and STIs, including HIV/AIDS (Winnie et al., 2016).

Recommendations

1. There should be HPV vaccination programme in school health services for the young girls.

2. There should be more advocacy campaign and enlightenment programme to prohibit bad life styles like risky health behaviour, drug abuse, and smoking and other social deviance attitude.
3. There should be regular adolescents' friendly programme in all the schools.

REFERENCES

- Hilton LW, Jennings-Dozier K, Bradley PK, Lockwood-Rayermann S, DeJesus Y, Stephens DL, Rabel K, Sandella J, Sbach A, Widmark C (2003). The role of nursing in cervical cancer prevention and treatment. *Cancer Journal* 1, 98 (9 Suppl), 2070- 2074.
- Hoque E, Hoque M (2009). Knowledge of and attitude towards cervical cancer among female University students in South Africa. *South Africa Journal of Epidemiology Infection* 24 (1), 21 -24.
- Mutyaba T, Fazelid E, Mirembe F, Weiderpass, E (2007). Influences on uptake of reproductive health services on Nsangi community of Uganda and their Implications for cervical cancer screening. *Reproductive Health Journal*, 4 (4), 66 -76.
- NisreenArif A, Farzana RA (2015). Knowledge and attitude about cervical screening and HPV vaccine among female medical students of Taif University, Saudi Arabia. *International Journal of Current Research and Academic review ISSN:2347-3215*, 3 (8). 106 -112.
- Tay SK (2012). Cervical cancer in the human papilloma virus vaccination era. *Journal of Obstetrics and Gynaecology*, 24 (1), 3 -7.
- Thomas VN, Saleem T, Abraham R (2005). Barriers to effective uptake of cancer screening among black and minority ethnic groups. *International Journal of Palliative Nursing*, 11 (11), 562- 571.
- Ubajaka C, Ukegbu A, Ilikannu S, Ibeh C, Onyeonoro U, Ezeanyim A (2015). Knowledge of cervical cancer and practice of Pap smear testing among secondary school teachers in Nnewi North Local Government area of Anambra State, South Eastern Nigeria. *Advances in Sexual Medicine*, 5 (13), 21- 31
- Winnie M, Gideon K, Peter W, Charles M (2016). Factors associated with uptake of cervical cancer screening among women aged 18-49 years in Njiru Sub country, Nairobi, Kenya. *Journal of Biology, Agriculture and Health Care ISSN 2224-3208*. 6 (6):87- 95.
- World Health Organization (WHO) (2016). Screening for various cancers. Available at Accessed 25th June, 2017.