

Effect of planned teaching program on knowledge, attitude and practices (KAP) in relation to selected aspects of cervical cancer and screening for secondary prevention among women in rural district of Raigad, Maharashtra

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Abstract

Introduction: Worldwide and in developing countries cervical cancer remains an important health problem. The burden of cancer is still increasing worldwide despite advances for diagnosis and treatment. Epidemiological studies have shown that many cancers may be avoidable. It is widely held that 80–90% of human cancers may be attributable to environmental and lifestyle factors such as tobacco, alcohol, lack of immunization and dietary habits.

Objectives: The objectives of the study were to assess the knowledge, attitudes and common practices pertaining to cervical cancer and its secondary prevention and the importance of Pap (Papanicolaou) smear test for screening among the women and also to determine the association between knowledge and attitudes scores of women in relation to cervical cancer with the selected demographic variables. **Material and Methods:** This interventional study imparting planned teaching program to women participants encouraging undergoing Pap smear screening was conducted in Raigad District. General Systems Model was the guiding framework for the study. Proportionate sampling was used to recruit women from villages selected for the study. **Results:** The number of participants was 950. This study revealed the limited knowledge of Indian women about the susceptibility of cervical cancer, and the necessity of cervical cancer screening among the women. Among the study population, 98.5% had poor knowledge regarding cervical cancer screening. There were significant differences among the women knowledge scores, a change in their attitudes and a change in the practices scores also, which shows that the structured teaching program has been highly effective.

Keywords: papanicolaou, cervical cancer, awareness, structured education, screening

Introduction

Cancer of cervix is the leading cause of death among women which mostly affects middle-aged women between 40 and 55 years which may be due to scarcity of resources available for the purpose of prevention, diagnosis and treatment especially among those from the lower economic background and who fail to carry out regular health check-ups. Out of the total of 58

million deaths worldwide in 2005, cancer accounted for 7.6 million (13%) of all deaths occurred in low, and middle-income countries. Deaths due to cancer in the world are projected to continue rising with estimated 9 million people dying from cancer in 2005 and 11.4 million dying in 2030⁽¹⁾. Worldwide 31% of cancer in women belongs to uterine cervix. The estimated cases of cervix cancer per year is 500000 of which 79 to 85 %

occur in the developing countries, where it is consistently the leading cancer and there are in excess of 2,30,000 deaths from the diseases⁽²⁾. According to an expert, the factors responsible for rise in cervical cancer are largely the changing life style and dietary pattern among urban population. Moreover, in spite of delivering few babies, the risk of cancer among women is increasing because of life style changes. It is also linked with greater life expectancy⁽³⁾. Most new HPV infections resolve spontaneously, if it persists, infection may lead to the development of precancerous lesion, which if left untreated can lead to cancer. As it usually takes 10-20 years for precursor lesion caused by HPV to develop into invasive cancer⁽⁴⁾. The key determinants of HPV infection for both men and women are related to sexual behavior, and include young age at sexual initiation, a high number of sexual partners, and having sexual partners with multiple partners⁽⁵⁾. India is a big country with more than 1 billion population and 72% of whom reside in the rural areas and the infrastructure health facility available is inadequate to prevent cancer cervix in rural areas. Hence, cervical cancer awareness program will be an effective intervention in order to improve the knowledge and consequently change the behavior of the women towards acknowledging importance of screening among the rural women and its level of acceptance⁽⁶⁾. The objectives of the study were to compare the knowledge scores of women in relation to selected aspects of cervical cancer before and after administering the teaching program, to compare the scores of attitudes among women in relation to selected aspects of cervical cancer before and after administration of teaching program, to compare the practice scores of women in relation to selected aspects of cervical cancer before and after administration of teaching program, to determine the association between knowledge and attitudes scores of women in relation to cervical cancer with selected demographic variables, to identify the causes for not accepting of Pap smear screening among the women, and to estimate and compare the region-wise results of cytological findings.

Material and Methods

In this study, an interventional study approach was used. Ethical approval was obtained from the Ethics committee of MGM University before commencement of the data collection. Informed consent of the women subject was obtained prior to conducting the study. Confidentiality of collected data and privacy of the subject was maintained throughout the study. The study started in the month of April 2015 and field work was completed in July 2017. The analysis was completed in the month of November 2017. Mixed method design is used for the study which is a combination of quantitative and qualitative study. Design used in the study is basically a quantitative type for encouraging women participants to undergo Pap smear screening. However, for identifying the reasons behind non-participation in screening practices, in-depth interviews were conducted. Three post-tests were conducted simultaneously among the participants maintaining duration of six months to see the changes between the scores and retention of the knowledge among the women in relation to various aspects of cancer of the cervix. In the study, the independent variable is planned teaching program related to knowledge about risk factors of cervical cancer and screening in relation to assess the attitudes of women for self-assessment and knowledge, attitudes and the practices scores of the women are the dependent variable. The other variables include Cytological diagnosis of Pap smears.

This study was conducted in rural areas of Raigad District of Maharashtra state in India. Population of the state is about 10 % of the Indian population. This District is divided into four subdivisions together incorporating fifteen Talukas and 1,967 villages. There are 52 primary health centers (PHCs) in the district. Participants consisted of married women from selected villages from Raigad District who fulfill the criteria of inclusion in the study. The sample size of 470 was estimated to detect about 45% change in attitude based on a pilot study. Sample size for detecting prevalence of 65.4% cytological changes in Pap smear of women was also calculated⁽⁷⁾. Thus, on the basis of calculations

higher sample size required is 857, adding 10% extra for lost to follow up 950 women participants were needed for the study. Most populous village within each block Raigad District was selected on the basis of census of 2011. This procedure was adopted to ensure getting adequate number of women participants.

In the study, proportionate sampling technique was used to study the subjects among the District Raigad. The number of women was derived assuming 15% of the total population constitutes women in the group of 25 years and above. Then from each village proportionately number of women required for selection was decided for the data collection of the study. Women in the age group from 25 years to 65 years and who are presently married and women who have been residing in the selected area for more than six months were included in the study. Women who had cancer of cervix and have been operated and received treatment for the same, women suffering from critical illness such as advanced stage of Diabetes Mellitus, Hypertension etc. and women who have undergone hysterectomy were excluded from the study.

A semi structured schedule for in-depth face to face interview was prepared for collecting the data. It had four sections. Section one consisted of demographic data, obstetrical and sexual history. Section two consisted of 20 items about knowledge related selected aspects of cervical cancer. Section three consisted of 30 items to evaluate the attitudes of women. Initially pretest was carried out. After that phase one teaching was conducted for about 20 minutes. Women were appealed to give Pap smear. Then phase two of teaching about Pap smear was given; again, they were appealed to give Smear. Then post-test was conducted. Smears were collected from willing women. The data was collected using same schedule for pre-test and post-test. Total three post-tests were conducted in six months.

Analysis of Demographic data, knowledge and attitudes regarding cancer of cervix and its secondary prevention was done with the help of frequency, percentage, and z –test. Appropriate tests like Non-Parametric Tests - Kruskal-Wallis Test, and paired 't' test for difference were used. The conventional level of significance was set at 0.01.

Results

A total of 937 women participants completed all three post-tests envisaged in the study maintaining duration between two posttests of six months to see the changes between the scores and retention of the knowledge among the women about various aspects of cancer of the cervix. The maximum age of the study participant was 62 years. There was no significant difference in age-distribution among villages; i. e. the age distribution was comparable in all fifteen villages with $\chi^2 = 57.463$, $df = 42$; $p=0.05$. The attainment in educational level among participants bearing no formal education was maximum (68.6%). There was no significant difference in education level among villages; i.e. the education distribution was comparable among all fifteen villages with $\chi^2=29.6$, $df=42$; p value $=0.10$. The maximum participants of the study comprised of Hindu religion with $\chi^2=79.7$, $df=42$, $p=0.001$ compared to census 2011 of district Raigad (85.1%), and majority of the participants reported that they consume mixed type of diet pattern regularly. It was found that majority of the women from the group reported 89.8 % regular menses, 6.2 % had irregular menses, regardless of women attending menopause (4.0 %). Majority of the women participants became sexually active between the age group of 18 to 20 years. The $\chi^2=541.9$, $df=28$; $p=0.001$. Age at marriage was 18-20 years (74.1%), 20-25 years (25.9%).

The pretest standard deviation among the score of knowledge section was 0.677, whereas in post-test it is 5.305. The df value was almost the same (937) for all aspects of knowledge section. The calculated "t" value equivalent to z test was found to be 149.698. As the calculated "t" value was greater than the value at 0.01 level of significance. It is shown in table no 1. After periodic counselling they have shown changes in their behaviors.

Table 1: Section wise comparison of mean knowledge scores of participants between pre intervention and post intervention (n=937)

Knowledge		Mean	SD	df	t-value/ z test	p-value
Section A- Causes of cervical cancer	Pre-test	0.19	0.38	937	122.39	0.001
	Post-test3	8.08	1.95			
Section B- Preventive strategies	Pre-test	0.03	0.16	937	97.53	0.001
	Post-test 3	5.75	1.79			
Section C- Signs and symptoms	Pre test	0.05	0.21	937	65.10	0.001
	Post-test 3	4.40	2.02			
Section D- Screening measures	Pre-test	0.15	0.35	937	101.30	0.001
	Post-test 3	6.67	1.92			
Section E- Treatment modalities	Pre-test	0.06	0.23	937	49.546	0.001
	Post-test 3	1.59	0.93			
Total	Pre-test	0.47	0.67	937	149.69	0.001
	Post-test 3	26.50	5.30			

Comparison of mean attitude scores of the participants is depicted in table 2. The Chi-square test result for comparing pretest scores and post-test scores showed that in pretest only 1.8 % of women gave acceptance to Pap smear screening whereas in post-test, it increased to 51.5 %. $\chi^2 = 0.436$; $P=0.001$ was highly significant,

which denotes that the planned teaching with a view to change the attitudes of participants towards screening is very effective. Therefore, we conclude that practice scores among the participants have increased significantly (Table 5).

Table 2: Comparison of mean attitude scores of the participants (n=937)

Attitude		Mean	SD	t-value	df	p-value
Section 1- Causes/etiology	Pre-test	0.03	0.17	91.491	937	0.001
	Post-test3	4.97	1.65			
Section 2- Prevention aspect	Pre-test	0.01	0.11	82.60	937	0.001
	Post-test3	4.03	1.11			
Section 3- Screening aspect	Pre-test	0.01	0.10	55.95	937	0.001
	Post-test3	3.46	1.27			
Section 4- Treatment modalities	Pre-test	0.01	0.09	36.05	937	0.001
	Post-test3	1.52	0.82			
Section 5- Accepting participation	Pre-test	0.00	0.06	110.42	937	0.001
	Post-test3	0.93	0.78			
Section 6- Acceptance for self- testing	Pre-test	0.10	0.31	47.16	937	0.001
	Post-test3	1.76	1.03			
Total	Pre-test	0.16	0.48	144.46	937	0.001
	Post-test3	16.67	3.45			

The calculated value of ANOVA test is 7.113 for knowledge section and 0.319 for attitudes section with p-value = 0.001. Scores of the respondents do not depend on age and education of the participants. Hence, we accept null hypothesis and reject alternate hypothesis. It is depicted in table 3.

Table 3: Association between age group with knowledge and attitude scores of women participants

Years	Age of women participants		Part A Causes of cervical cancer	Part B Preventive strategies	Part C Signs and symptoms	Part D Screening practices	Part E Treatment modalities	Attitude of women
25-34	N-336	Mean	8.22	6.12	4.73	7.04	1.69	16.48
		SD	1.86	2.15	2.10	2.07	0.94	3.86
35-44	N-321	Mean	7.55	5.44	4.20	6.11	1.47	16.40
		SD	2.04	1.53	2.00	1.80	0.87	3.47
45-54	N-206	Mean	8.05	5.70	4.20	6.31	1.44	16.7
		SD	2.01	1.46	1.93	1.79	1.02	3.17
55-64	N-87	Mean	7.56	5.82	4.04	6.45	1.43	16.51
		SD	1.94	1.88	2.03	2.18	0.92	3.33
Total	N-950	Mean	7.89	5.76	4.37	6.51	1.54	16.50
		SD	1.98	1.80	2.04	1.97	0.94	3.53
ANOVA test value			7.11	7.50	5.18	12.68	4.27	0.31
p-value			0.001	0.001	0.001	0.001	0.005	0.812

Table 4: Association between level of education with knowledge and attitude scores of women participants

Education of women participants			Part A Causes of cervical cancer	Part B Preventive strategies	Part C Signs and symptoms	Part D Screening practices	Part E Treatment modalities	Attitude of women
No formal Education	N 654	Mean	7.95	5.77	4.41	6.65	1.56	16.68
		SD	1.922	1.884	2.087	2.035	0.913	3.550
Primary	N 149	Mean	7.44	5.39	3.99	6.26	1.53	16.44
		SD	1.949	1.523	1.820	1.614	1.046	2.919
Secondary	N 139	Mean	8.08	5.90	4.55	6.23	1.44	15.95
		SD	2.224	1.608	2.084	1.959	0.980	3.673
Graduate	N 8	Mean	8.25	5.38	3.50	5.87	0.87	13.50
		SD	1.488	1.768	1.690	2.232	1.126	4.660
Total	N 950	Mean	7.89	5.73	4.36	6.52	1.53	16.51
		SD	1.975	1.798	2.049	1.972	0.948	3.500
ANOVA test value			3.331	2.449	2.576	2.955	1.896	3.638
p-value			0.019	0.062	0.053	0.032	0.129	0.013

Table 5: Comparison between sequential posts tests

	Total Knowledge Scores of participants (6 months apart)			
	Pre-test	Post-test -one	Post-test- two	Post-test- three
N	950	946	940	937
Mean	0.47	26.45	26.50	26.50
SD	0.68	5.33	5.31	5.30

Systematic sampling with random start method was used and accordingly in every fifth village of the study to achieve the objective of women (170) for not accepting self-screening practices. District Sub division wise results were almost similar. The Chi-square test result is 3.41 with $p = 0.333$. Among the

results 51.6 % women reports showed inflammatory changes in the Pap smear, 47.3 % showed normal cytological findings and 0.9 % smears presented with changes of Atrophic vaginitis which is mentioned in table 6 of the study.

Table 6: Sub-Divisions wise results of Pap smear interpretation Raigad District (n=507)

Sub-divisions	Inflammatory smear	NILM -Negative for intraepithelial lesion or malignancy	Atropic Vaginitis
Alibaug	13.4%	9.2%	0.19%
Panvel	14.9%	14%	---
Mahad	13.0%	12.6%	0.78%
Mangaon	10.2%	11.4%	---
Total	51.6%	47.3%	0.97%

Discussion

The findings of the present study show that 98.5% had poor knowledge regarding cervical cancer screening. Similar study in Kerala showed where the literacy rate among females is very high, it was found that among 809 women where only half of the study population was aware of symptoms and the majority (89.2%) were unaware of the risk factors for cervical cancer⁽⁷⁾. The absence of adequate knowledge is almost universal and reflected in Nigeria (29.4%)⁽⁸⁾. It is a known fact that the knowledge of cervical cancer prevention is very poor in developing nations because of poor education and limited awareness program. This is reflected in this study also with observation of better knowledge among more educated compared to the less educated. Though 43% had good knowledge about symptoms and 39% had good knowledge about screening guidelines but poor knowledge about the Pap test as a screening measure⁽⁹⁾. Most of the women in this study (91%) got their health-related information from their family members which could be one of the reasons for the poor

knowledge regarding cervical cancer. A limitation of the study may be the potential for information bias which exists in the accurate disclosure of personal information. Women may be hesitant to report having multiple sexual partners, their age at initiation of sexual activity, and history of STDs. Awareness of cervix cancer, its causes and the screening program can help in reduction of morbidity & mortality among women and helps to reduce disease burden on health care services⁽¹⁰⁾. Things can change dramatically and positively if these women are screened early and regularly to detect the cancer in its very early stage in which it remains for 15-20 long years by offering simple treatment at minimum cost which in turn can completely cure these women of their precancerous state and increase the lifespan⁽¹¹⁾.

Conclusion

The implementation of planned teaching program and periodic counselling sessions are very effective tools in

imparting knowledge and encouraging women for screening practices with a view to prompt diagnosis, treatment and follow up.

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Conflict of interest: Nil

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