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Original Research Article

Effect of Education Bundle on Prevention and Early Detection of Cervical Cancer and Participation of Women in Cervical Screening Procedures

Seeta Devi[1], Dr. Prabha Dasila[2]

[1]PhD Scholar, MGM University of Health Sciences, Navi Mumbai
[2]Professor & Director, MGM University, Department of Nursing, Navi Mumbai

Corresponding Author: Seeta Devi

ABSTRACT

Worldwide, cervical cancer is the second most common cause of cancer-related deaths and is responsible for approximately 250,000 annual deaths , most of which occur in developing countries The objectives of the study was to assess comparison of verbal, written and video based health interventions and prevention and early detection of cervical cancer and participation of women in cervical screening procedures.
Pre-experimental research design. One group pretest and post test design study conducted using a structured interview questionnaire which collected quantitative data.
All the participants across the written and video module samples said that they have never ever have got themselves screened for Cervical Cancer. Across each of the verbal and written module samples, 59% participants said they didn't get screening done since they had no knowledge/ information about cervical screening. In verbal individual face to face health education, 94% of the participants have poor knowledge regarding prevention and early detection of cervical cancer prior to the health education programme and this figure stoops down to 18% post the verbal health education programme. In written health education 100% of the participants had poor knowledge. The t value for this test is 6.48 at 16 degrees of freedom, and the corresponding p-value of the test is extremely negligible (0.000004). The t value for this test came out to be 7.34 at 16 degrees of freedom, and the corresponding p-value of the test is extremely negligible (0.00000001). In verbal face to face health education 70.58% and in video based health education and 82.35 % participants have participated in cervical screening procedures. An improved participation in the cervical screening procedures noticed in verbal and video based health education programmes.

Key words: verbal. Written, video based health education, early detection of cervical cancer Cervical screening.

INTRODUCTION

Globally, cervical cancer is one of the most common cancers in women, with an estimate of 440,000 new cases annually, and 80% of these cases occurring in developing and undeveloped countries due to inadequate use of the screening services. [1,2] All sexually active women are at risk for the development of cervical cancer. [3] Human papillomavirus (HPV) infection is responsible for more than 90% of the cases of invasive cervical cancer worldwide, and it is related to 80% of pre-cancerous changes in the cervix. [1] The most notable risk factor for cervical cancer is failure to undergo screening, which accounts for roughly half of women diagnosed with cervical cancer. Other risk factors include

smoking, immunosuppression from any cause including HIV infection, long-term use of oral contraception, co-infection with Chlamydia, parity, prior cervical cancer, and genetic polymorphisms affecting the entry of HPV DNA into cervical cells. [4]

Cervical cancer can be prevented when it is detected and treated prior to the pre-invasive stage. This can be accomplished through scheduled Pap smear screening for cervical cancer. The screening programs for early detection and treatment of cervical cancer haves significantly reduced the morbidity and mortality of these diseases. [5,6] Two vaccines are now available for primary prevention. They generate neutralizing antibodies to HPV capsid protein. The vaccines have been shown to confer nearly 100 per cent protection against cervical pre-cancers and genital warts caused by HPV types. Vaccination and screening, which are complementary and synergistic, now constitute the new paradigm for prevention of this disease. [7]

Regular Papanicolaou's (PAP) smear screening has reduced the incidence of mortality from cervical cancer tremendously. This simple screening test can detect pre-invasive, and invasive disease process in very early stages, at which it can be prevented, treated, and cured. This screening method has been proven to reduce the incidence and mortality from cervical cancer up to 80% in developed countries. Therefore, this test is recommended for all sexually active females worldwide. [8, 9]

The role of counseling in providing psychosocial support and encouragement for behavior change has proved to be immense value. Counseling is considered very important in order to achieve the purpose of screening. Providing information on cervical cancer in the community and in health services is vital to raising awareness and reducing illness and death. [10] Behavioral intention can be improved through counseling. A woman's behavioral intention is based on her attitude toward screening, her belief as well as the support of the people around a woman regarding the need and benefits of screening. To participate in any screening program, the woman has to be ready. If she is not ready to be screened, she will not present herself for screening as counseling sessions helps in preparing women for screening. [11]

Screening for cancer is known to reduce mortality by early detection and treatment. However, there are two prerequisites for screening to reduce the rate of death from cancer. First, screening must advance the time of diagnosis of cancers that are destined to cause death. Second, early treatment of these cancers must confer some advantage over treatment at clinical presentation. Unlike other cancer sites, cervix can be subjected to screening for early diagnosis and treatment. However, despite availability of various cervical cancer screening methods, as well as large burden of disease in India, there is no countrywide government-sponsored public health policy on prevention of cervical cancer by either screening or vaccination or both and no such educational audio visual aids to disseminate the information on prevention and early detection of cervical cancer.

There are several reasons why women developing invasive cervical cancer fail to have cancer detected at a pre invasive stage by screening. [12,13] The commonest Reason is that they have never been screened at all. [14] In a study of 337 randomly selected Asian women in aged 30-50 found that only 35% of at risk women had a cervical smear test. The main reasons given for never having had a cervical smear test related to lack of knowledge or awareness; factors that could be improved by health education.

Therefore, this study was carried out to create awareness by three health educational interventions specifically information by verbal face to face health education, booklet and video based health education on cervical cancer and to understand views and participation of

women in cervical screening procedures before and after interventions as well as to disseminate the information about various procedures available for cervical screening procedures.

METHODS AND DESIGN

Pre-experimental research design. One group pretest and post test design study was conducted using a structured interview structured questionnaire which has collected quantitative data.

Setting of the study:

The study was conducted in PCMC hospitals, Pune, Maharashtra with proper permission.

Study population and eligibility:

The study involved females aged between 30 to 60 years in the selected in PCMC hospitals who were the permanent resident of Pimpri Chinchwad Municipal Corporation (PCMC).

Sampling procedure:

A multi-stage sampling technique was used: Two hospitals were randomly selected from PCMC. Four OPDs were selected from each hospital using simple random sampling to obtain samples. In order to select the samples, systematic random sampling was used where the interval for selection of the samples was determined by dividing the approximate number of women visit OPD in a given OPD by the required number of respondents from OPD. List of hospitals belong to PCMC office obtained from PCMC officials while OPD employees at YCM hospitals have provided the estimates of numbers of OPD patients. Within OPD registration, simple random sampling was used to select a respondent whenever more than one eligible woman was present at the time of data collection. Same procedure was used for all three experimental groups.

Data collection:

After the selection of samples, participants were divided in to three groups namely verbal, written group and video based group. Each group had 17 women who were randomly selected. The total sample size was 51. Each group had given pretest questionnaires with structured interview methods. After pre test, education was provided to three experimental groups. Immediately after education, if any woman is interested for screening, investigator has guided them for the screening procedure as per their choice (Pap, VIA, VILI and HPV DNA). Those who have not screened immediately after education and willing to participate, they have given invitation letters mentioning the screening dates, venue and name of the dates who will be performing screening test. The participants who did not come for screening on given dates, the investigator has sent reminders namely, letter, message in telephone and phone calls by giving them 10 days of interval for each reminder.

The questionnaire included eight sections. Section I had 22 demographic variables, section II had Knowledge questionnaire with 37 items on Prevention and early detection of cervical cancer, Section III had Attitude scale with 13 items on prevention and early detection of cervical cancer, Section IV had Likert's scale with 15 items assessed the reasons for non participation in cervical screening (Before Health Education), Section V consisted of 13 items on reasons for non participation in cervical screening (After Health Education), Section VI had 8 items on reasons for participation in cervical screening , Section VII had 4 items on views of women regarding health education programmes. Section VIII had Participation of women in cervical screening (Immediately after education, Invitation letter, Letters, SMS and telephone calls). This questionnaire was presented by researcher in a scientific advisory committee, MGM University Mumbai and got approval. This tool also was validated by experts in the field of Gynecology.

Ethical consideration:

After institutional approval had been obtained, data were collected. It was explained to the participants that they had the right to withdraw from the investigation

and the information would be kept strictly confidential.

Analysis:

Table: 1 Distribution of Demographic variables of women among three experimental groups verbal, written and video based health education in percentage:

S.No	Demographic variables	Verbal face to face health education	Written Information booklet	Video based Health education
1.	**Age in years**			
	30 – 35	12	40	0
	36 – 40	29	18	0
	41 - 45	24	18	24
	46 - 50	29	18	0
	51 - 55	6	6	35
	56 – 60	0	0	41
2.	**Educational qualification**			
	Professional or Honours	0	0	0
	Graduate or Post Graduate	0	0	0
	Intermediate	6	0	0
	High School	0	18	0
	Middle School	6	24	0
	Primary School	35	24	18
	Illiterate	53	35	76
3.	**Occupation**			
	Profession	0	0	24
	Semi -Profession	0	0	12
	Clerical or Similar	0	0	12
	Skilled Worker	12	6	6
	Semi Skilled Worker	0	0	18
	Unskilled Worker	18	35	29
	Unemployed	71	59	0
4.	**Monthly income**			
	> 36017	18	18	88
	18000 to 36016	0	12	12
	13495 to 17999	6	0	0
	8989 to 13494	6	35	0
	5387 to 8988	53	18	0
	1803 to 5386	18	18	0
	< 1802	0	0	0
5.	**Religion**			
	Hindu	88	94	24
	Muslim	0	6	76
	Christian	12	0	0
	Others	0	0	0
6.	**Marital status**			
	Single	0	18	24
	Married & Living with Partner	94	76	76
	Married & Separated	6	0	0
	Divorced	0	0	0
	Widow	0	6	0
7.	**Age at Marriage in years**			
	<15	17	24	19
	>15	83	76	81
8.	**Age at onset of sex**			
	< 15	35	6	12
	16 - 20	59	82	59
	21 - 25	6	12	29
	26 - 30	0	0	0
	> 30	0	0	0
9.	**Age at first childbirth**			
	< 15	12	6	76
	16 - 20	88	53	24
	21 - 25	0	41	0
	26 - 30	0	0	0
	> 30	0	0	0
10.	**Number of sex partners**			
	0 - 1	100	100	29
	2 - 3	0	0	53
	4 - 5	0	0	6
	others	0	0	12
11.	**Ever Screened for Cervical Cancer**			
	Yes	6	0	0
	No	94	100	100
12.	**Reasons for not screened**			
	May be Painful	12	0	100
	I feel shy	12	24	0
	I am healthy	12	18	0
	It is expensive	6	0	0
	No knowledge	59	59	0
13.	**Have you ever Smoked**			
	Yes	12	6	42
	No	88	94	58

The maximum percentage of participants across each of the three health educational programme; namely verbal, written and video based; the maximum percentages of participants are illiterate. The maximum percentages of participants in the verbal and written modules are unemployed.

Across all the three groups, we see that none of the participants fall in the income group of less than 1802 INR per month. Most of the participants were between 16 and 20 years at the onset of sex. All the sampled individuals in the written and verbal modules say that they have not more than one sex partner in their life. A very high proportion (53%) of the participants in the video sample admitted to have 2 or 3 sex partners, 12% participants chose not to disclose the number of sex partners that they have.

All the participants across the written and video module samples said that they have never ever have got themselves screened for Cervical Cancer. Across each of the verbal and written module samples, 59% participants said they didn't get screening done since they had no knowledge/ information about cervical screening. In the written and verbal module samples, 24% and 12% participants said that they haven't ever got screening done owing to their shyness. 18% and 12% participants across the written and verbal module samples said that they feel they need no screening because they're healthy.

Objective I: To assess the knowledge of women regarding prevention and early detection of cervical cancer before and after health education among three experimental groups.

Table 2: Knowledge of women regarding Prevention and Early Detection of Cervical Cancer by Verbal Individual face to face Health Education , Written Health Education (Information booklet) and Video Based Health Education in percentages Programme in percentages : N=51

		Verbal Individual face to face Health Education		Written Health Education (Information booklet)		Video Based Health Education in percentages	
Score Range	**Grading**	**Before Health Education**	**After Health Education**	**Before Health Education**	**After Health Education**	**Before Health Education**	**After Health Education**
> 70%	Excellent	0	47	0	0	0	76
50% - 70%	Very good	6	29	0	12	0	24
40% - 50%	Good	0	6	0	29	6	0
< 40%	Poor	94	18	100	59	94	0

In verbal individual face to face health education, 94% of the participants have poor knowledge regarding prevention and early detection of cervical cancer prior to the health education programme and this figure stoops down to 18% post the verbal health education programme. In written health education 100% of the participants had poor knowledge regarding prevention and early detection of cervical cancer before administering written health education module, and this figure goes down to 59% after administering written health education module.

In video based health education 94% of the participants have poor knowledge regarding prevention and early detection of cervical cancer before video based health education, and this figure goes down to 0% post the video based health education module. A huge positive impact of the video- based health education module on the knowledge of prevention and early detection of cervical cancer in women.

Objective 2: To assess the participation of women for cervical screening before and after verbal, written and video based health education among three experimental groups.

Table3: Comparison of knowledge scores before and after three health education programmes.

Type of the education programme	Score Category	Means	SD	t	df	p- value
Verbal face to face health education programme	Before	29.18	8.95	7.34	16	0.000
	After	46.24	3.44			
Written health education programme (Information booklet)	Before	8.41	2.72	6.48	16	0.000
	After	14.18	2.86			
Video based health education programme (Information booklet)	Before	9.18	3.09	20.66	16	0.000
	After	27.76	2.49			

Table:4 Comparison of participation of women for cervical screening before and after verbal, written and video based health education among three experimental groups. N= 51

	Number of participants from verbal individual face to face health education group N= 17		Number of participants from written health education group N=17		Number of participants from video based health education group N= 17	
	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
Pre test	1	5.88	0	0	0	0
Post test	12	70.58	6	35.29	14	82.35

Objective 4: To find out the reasons for participation and nonparticipation for cervical screening among three experimental groups.

Table5: Reasons for non-participation of women for cervical screening before health education programmes among three experimental groups.

S.N	Item	Response	Health Education		
			Verbal	Written	Video
1	Iam not aware of cervical cancer and its screening procedures	Strongly Agree	88	59	65
		Agree	12	35	35
		Neither Agree nor Disagree	0	6	0
		Disagree	0	0	0
		Strongly Disagree	0	0	0
2.	This test may make me worry and fear of exam:	Strongly Agree	58	53	35
		Agree	18	35	35
		Neither Agree nor Disagree	12	0	12
		Disagree	12	12	18
		Strongly Disagree	0	0	0
3.	I don't want to get a Pap smear test because of fear of test results	Strongly Agree	76	40	29
		Agree	6	24	29
		Neither Agree nor Disagree	6	12	12
		Disagree	12	24	29
		Strongly Disagree	0	0	0
4.	The test is too painful	Strongly Agree	30	28	35
		Agree	24	24	12
		Neither Agree nor Disagree	18	24	41
		Disagree	18	12	12
		Strongly Disagree	12	12	0
5.	It is too embarrassing to get a Pap smear test	Strongly Agree	48	18	18
		Agree	12	24	35
		Neither Agree nor Disagree	6	18	6
		Disagree	12	29	41
		Strongly Disagree	24	11	0
6.	Being examined by a male provider would discourage me from getting a Pap smear test	Strongly Agree	29	41	35
		Agree	24	35	53
		Neither Agree nor Disagree	0	6	12
		Disagree	41	18	0
		Strongly Disagree	6	0	0
7.	This test is too expensive	Strongly Agree	41	18	24
		Agree	12	29	12
		Neither Agree nor Disagree	12	24	29
		Disagree	35	29	35
		Strongly Disagree	0	0	0
8.	I don't need a Pap smear test as I don't have any discomfort or pain:	Strongly Agree	46	53	41
		Agree	24	29	18
		Neither Agree nor Disagree	6	18	12
		Disagree	12	0	29
		Strongly Disagree	12	0	0
9.	This test is not important for my age	Strongly Agree	41	41	12
		Agree	29	18	41
		Neither Agree nor Disagree	6	12	24
		Disagree	12	18	24
		Strongly Disagree	12	12	0

Table5 to be continued…					
10.	I don't need a Pap smear test as I have only one sexual partner	Strongly Agree	52	59	29
		Agree	12	12	35
		Neither Agree nor Disagree	12	12	18
		Disagree	12	18	18
		Strongly Disagree	12	0	0
11.	I don't know where to go for Pap smear test	Strongly Agree	76	41	29
		Agree	18	29	47
		Neither Agree nor Disagree	0	12	12
		Disagree	0	18	12
		Strongly Disagree	6	0	0

Table6: Analysis of variance (ANOVA) for comparing the equality of effectiveness of the three health education programmes; namely, verbal, written and video based in improving knowledge and attitude scores:

Health education programme	Average	SD	CV (in %)
Verbal	8.88	4.43	49.89
Written	8.41	2.72	32.34
Video Based	9.17	3.09	33.70

The above table shows that the average scores obtained from the samples under the three modules are very close to each other, but are not all the same. From the coefficient of variation, a measure of variation in the data relative to the average shows that the scores of participants under the written module sample are the most consistent with each other.

In order to assess whether the differences in the sample averages imply that the three modules are not equally effective, the researcher carried out one - way ANOVA, and the resulting table is as below:

Source of Variation	SS	df	MS	F	p-value	F crit
Between Groups	5.06	2	2.53	0.208	0.813	3.191
Within Groups	584.35	48	12.17	--	--	--
Total	589.41	50	--	--	--	--

The above table shows that the calculated F test statistic (0.208) is less than the corresponding critical value (3.191). Also, the p - value for the test of significance is 0.813, which is very high. These observations suggest that there is no sufficient evidence in the data to reject the null hypothesis.

Through module related paired t - tests, we have established that every health education module is effective in improving attitude scores, and now we may be interested in knowing whether one particular module is better than the other two when it comes to improvement in attitude scores. The attitude of participants towards getting screened for Cervical Cancer was assessed on a 5 point Likert scale; the lowest score of 1; being for the most negative attitude, and the highest score of 5 being for the most positive attitude. The average scores along with their standard deviations and coefficients of variation are as in the table below:

Module	Average	SD	CV (in %)
Verbal	44.88	7.78	17.33
Written	43.11	7.64	17.71
Video Based	45.71	7.02	15.37

The above table shows that the average scores obtained from the samples under the three modules are very close to each other, but are not all the same. From the coefficient of variation, a measure of variation in the data relative to the average shows that the scores of participants under the video based module sample are the most consistent with each other.

Source of Variation	SS	df	MS	F	p-value	F crit
Between Groups	59.45	2	29.73	0.530	0.592	3.191
Within Groups	2691.06	48	56.06	--	--	--
Total	2750.51	50	--	--	--	--

The above table shows that the calculated F test statistic (0.530) is less than the corresponding critical value (3.191). Also, the p - value for the test of significance is 0.592, which is high. These observations suggest that there is no sufficient evidence in the data to reject the null hypothesis of the equality of the average scores of the three populations (i.e.

the possible population attitude scores under the three health education modules).

DISCUSSION

A total of 51 participants, 51 samples were equally divided by random sampling techniques. Each group had 17 in number. Sociodemo graphically the three groups were essentially similar.

The respondents generally had very poor knowledge on prevention and early detection of cervical cancer before health education in all three experimental groups. Knowledge on prevention and early detection got improved significantly after the intervention and more respondents were knowledgeable about the disease and screening procedures. Among three experimental groups video based health education group had high knowledge scores.

The attitude of the respondents was also not favorable in both groups prior to the intervention. This may be related to their perception of the test. The attitude of participants was showed favorable after interventions among three experimental groups.

Participation in cervical screening procedures was very poor among three experimental groups before intervention. The finding of only 5.88 % of the respondents in only one group whereas in other groups reported nil. The report is similar to the 0.5% reported by Chukwuali, among users of a cervical cancer screening service in Enugu, Nigeria. [15]

This study showed a relatively high cervical cancer screening participation rate of 70.85 in verbal face to face health education and 82.35 % in video based health education. Similar study conducted by Ezechi et al. BMC Public Health in 2013, the screening acceptance rate was 79.8% with counseling. The poor participation was noticed in written information booklet group. Again, contrary to what has been reported by other researchers elsewhere, [16] educational status did not appear to have had any positive impact on the uptake, as poor uptake was recorded in spite of the respondents' high level of education. Poor uptake of the Pap smear has been similarly reported among female medical practitioners in Enugu, Nigeria. [17]

CONCLUSION

In conclusion, this study has shown that three health education programmes a positive effect on improving knowledge and attitude toward cervical screening procedures. An improved participation in the cervical screening procedures noticed in verbal and video based health education programmes. However, require more than health education and an offer of free services cervical screening procedures.

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Conflicts Of Interest Disclosure

The researchers declare that there is no conflict of interest.

REFERENCES

1. Wong LP, Wong YL, Low WY, et al. Knowledge and awareness of cervical cancer and screening among Malaysian women who have never had a Pap smear: a qualitative study. Singapore Medicine Journal. 2009; 50(1): 49-53.PMid:19224084
2. Reis N, Bebis H, Kose S, et al. Knowledge, Behavior and Beliefs Related to Cervical Cancer and Screening among Turkish Women. Asian Pacific J Cancer Prev. 2012; 13:1463-1470. http://dx.doi.org/10.7314/APJCP.2012.13.4.1463
3. Carr KC, Sellors JW. Cervical cancer screening in low resource settings using visual inspection with acetic acid. Journal of Midwifery and Women's Health care. 2004; 49(4): 329-37.PMid:15236713 http://dx.doi.org/10.1016/j.jmwh.2004.02.015
4. The American College of Obstetricians and Gynecologists New guidelines issued in March. 2012.
5. World Health Organization. Cervical Cancer Screening in Developing Countries. A report of WHO Consultation. World Health Organization, Geneva. 2005.

6. Mosavel M, Simon C, Oakar C, et al. Cervical cancer attitudes and beliefs-aCape Town community responds on World Cancer Day. Journal of Cancer Education. 2009; 24: 114-9. PMid:19431027. http://dx.doi.org/10.1080/08858190902854590
7. Bhatla N, Joseph E. Cervical cancer prevention & the role of human papillomavirus vaccines in India. Indian J Med Res 130, September 2009, pp 334-340
8. Saslow D, Runowicz CD, Solomon D, et al. American Cancer Society guideline for the early detection of cervical neoplasia and cancer. Cancer Journal of Clinic. 2002; 52:342-362. http://dx.doi.org/10.3322/canjclin.52.6.342
9. Patnick J. Cervical cancer screening in England. European Journal of Cancer. 2000; 36: 2205-2208. http://dx.doi.org/10.1016 /S0959-8049(00)00310-5
10. World Health organization. Comprehensive cancer control. A Guide to Essential Practice. World Health Organization. Geneva. 2006.
11. Ndikom CM, et al. Pre-screening counseling in cervical cancer prevention: Implications for nursing. International Journal of Nursing and Midwifery. 2011; 3(10): 158-164.
12. ChaberlainJ. Failures of the cervical cytology screening programme. BMJ 1984;289:853-4.
13. Chamberlain J. Reasons that some screening programmes fail to control cervical cancer.In: Hakama M, Miller AB, Day NE, eds. Screening for cancer of the uterine cemix. Lyon: International Agency for Research on Cancer, 1986:161-8. (IARC Publications No76.
14. Choyce A, McAvoy BR. Cervical cancer screening and registration-are they working? J Epidemiol Community Health 1990;44:52-4.
15. Chukwuali LI, Onuigbo WI, Mgbor NC. Cervical Cancer Screening in Enugu, Nigeria. Trop J Obstet Gynaecol 2003; 20:109-12
16. Al Saira M, Mohamed FA. Knowledge, attitudes, and practice related to cervical cancer screening among Kuwaiti women. Med PrincPract 2009;18:35-42.
17. Dim CC, Ekwe E, Madubuko T, Dim NR, Ezegwui HU. Improved awareness of Pap smear may not affect its use in Nigeria: A case study of female medical practitioners in Enugu, southeastern Nigeria. Trans R Soc Trop Med Hyg 2009;103:852-54

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