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Original Research Article

A Study to Identify Barriers Related To Screening and Evaluate the Effectiveness of Community Based Education Program on Knowledge of Cervical Cancer

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ABSTRACT

The objective of the study were to identify the barriers related to screening for cervical cancer among the women, assess & compare the knowledge on cervical cancer before & after the Community based education program among the women, determine the association of post test knowledge score of women on cervical cancer with selected variables. The research design selected for study was Pre experimental (Quantitative). The study was conducted at women residing in village Simbla, Dist Ambala, Haryana (N=100) and convenient sampling technique was used. Structured questionnaires were used to assess barriers, and structured knowledge questionnaire was used before and after CBEP (Video based instruction). The result revealed that 63% of women had barriers. In pre test none of the women had good level of knowledge and in the post test (69%) had good knowledge. The mean knowledge score of post test (20.85) was significantly higher than the pre test (9.64) with the 't' value of 27.53 ($p<0.05$). Further, there was no significant association of post test knowledge score with any of the selected variable. Community based education program (video based instruction) was an effective teaching method for enhancing the knowledge of women on cervical cancer.

Key Words: Barriers, knowledge, cervical cancer, cervical screening, community based education program

INTRODUCTION

Cancer starts when cells in a part of the body start to grow out of control. Instead of dying, Cancer cells continue to grow and form new, abnormal cells". [1] Many a time people wonder how cancer is caused. Studies have shown there are many reasons for developing cancer in human beings. Some of them are Chemicals, Diet and exercise, obesity, radiations, infection, physical agents, Hormones or genetic changes. [2]

The second most common cancer among women worldwide is cervical cancer. Cancer of Cervix develops in the tissues of cervix, which is a part of female reproductive system. The cervix connects the upper body of uterus to the vagina. The most common cause for developing cervical cancer is Human Papilloma Virus (HPV) which is a sexually transmitted infection. [3]

Melbourne times (3 December 2014) states that, "WHO aims to facilitate countries to prevent and control the cancer of cervix by new guidance. The key elements in the new guidance are: HPV vaccination to 9 to 13 year old girls in two doses to prevent Human papilloma virus (HPV) infection, Regular cervical screening of women to prevent cervical cancer." [4]

In the United States, the number of new cases and number of deaths from cervical cancer have significantly decreased in the past 40 years. Basically this decline is the result of getting regular Pap tests by most of the women, as pap test can find cervical pre cancer before it becomes cancer. [5]

Usually cervical cancer takes place in midlife. i.e. < 50 years of age. Many elderly women feel that they have crossed the risky age of developing cervical cancer. Secondly reports also state that woman who have reached up to the age of 65, did not develop cervical cancer as they regularly underwent screening test. [6]

METHODOLOGY

The research design selected for study was Pre experimental (Quantitative). Formal administrative approval was obtained from the ethical committee of MMIMSR, Mullana, Ambala to conduct the final study. For the present study the sample size was 100 and they were informed about the purpose of the study.

The following data collection tools were developed and used order to obtain data:
Section 1: Description of Selected variables
Section 2: Barrier questionnaire to assess the barriers of the women those who are not interested and will not be able to go for cervical screening.
Section 3: Knowledge Questionnaire on cervical cancer.

The interview technique was selected for collecting data related to assessment of barriers related to cervical screening and knowledge on cervical cancer. To ensure the content validity, it was submitted to 7 experts. i.e. 5 in the field of nursing and 2 Doctors (Obstetrics & Gynecology) for checking its accuracy and relevancy. The reliability coefficient for structured knowledge questionnaire was calculated by using Kuder-Richardson-20 (KR_{20}) formula and it was found to be 0.85. The acceptable range of (KR_{20}) is 0.06-0.09. Thus the tool was found to be reliable. The data obtained in the study was analyzed by using both descriptive and inferential statistics i.e. Mean, median, percentage, frequency distribution, standard deviation and Paired sample "t" test , ANOVA/ independent "t" test.

RESULT

Both descriptive and inferential statistics were used as per the objectives of the study and the hypotheses to be tested at 0.05 level of significance.

Section I: Description of selected variables

Table1: Frequency and Percentage distribution of women according to Selected variables. N=100

S. no.	Selected variables	f (%)
1.	**Age(in years)**	
1.1	21-30	56
1.2	31-48	23
1.3	41-50	15
1.4	51-60	06
2.	**Religion**	
2.1	Hindu	98
2.3	Sikh	02
3.	**Educational status**	
3.1	Non literate	04
3.2	Primary	06
3.3	Secondary	59
3.4	Higher Secondary	16
3.5	Graduate or Above	15
4.	**Employment status**	
4.1	Unemployed	01
4.2	Employed	08
4.3	Self employed/Business	09
4.4	Home maker	82
5.	**Family Income (per month in rupees)**	
5.1	3000-8000	38
5.2	8001-13000	32
5.3	13001-18000	13
5.4	18001-23000	14
5.5	23001-28000	03
6.	**Marital Status**	
6.1	Unmarried	11
6.2	Married	81
6.3	Divorced/Separated	01
6.4	Others (Married and not living together)	07
7.	**Have you ever heard about cervical cancer?**	
7.1	Yes	36
7.2	No	64

Table 1 depicts the information about the frequency and percentage distribution of women according to selected variables. Out of 100 women majority of them (56%) were in the age group of 21-30 years, (98%) of them were Hindus and most of them (81%) were married. More than half (59%) were having education up to secondary level with (82%) women are

homemakers and (38%) were having family income of 3000-8000Rs./- per month. Most of them (64%) said that they have not heard about cervical cancer.

Section II: Assessment of barriers related to screening for cervical cancer among women

Table 2: Area and Item Wise Frequency and Percentage Distribution of women in terms of barriers related to screening for cervical cancer

GENERAL BARRIER FOR SCREENING			**N=100**
Sr. No.	**Item**	**f f**	**Barrier %**
1.	Are you interested and will be able to go for cervical screening?	Yes No	
		37 63	63
SPECIFIC BARRIER FOR SCREENING			**n=63**
Sr. No.	**Items**	**f**	**%**
Personal			
1.	Feeling of anxiety, Fear	44	69.8
2.	Feeling of ashamed and embarassement regarding pap test	43	68.25
3.	Lack of awareness about when to go for pap test	43	68.25
4.	Forget to go for pap test	04	6.34
5.	Inadequate time	25	39.68
6.	Appointment time not suitable	05	7.93
7.	Past vaginal examination test have been uncomfortable/painful	04	6.34
8.	Scared of a cancer diagnosis and treatment	18	28.57
9.	Not sexually active so do not need to go for a pap smear	08	12.69
Financial			
10.	Cannot afford the cost	08	12.69
11.	Pap test not covered by health insurance	03	4.76
12.	High Travelling cost because health centre is very far	03	4.76
Social			
13.	Fear of lack of confidentiality	08	12.69
14	Partner would not allow	13	20.63
15.	Against the religious and cultural values.	03	4.76
Institutional			
16.	No screening sites in community	04	6.34
17.	Lack of information from health centers about cancer and screening	23	36.50
18.	Screening sites are far from residential areas	02	3.174
19.	No health education program to promote screening	30	47.61
20.	The attitude of health personnel is not so fair.	05	7.93

Table 2 depicts the area and item wise frequency and percentage distribution of women in terms of barriers related to screening for cervical cancer. Out of 100 women, 63% had barrier for cervical screening based on general barrier for screening. The specific barrier for screening assessment showed that out of 63 women, 44 (69.8%) of the women had feeling of anxiety, fear as per personal Barriers. In institutional Barriers, 30 (47.61%) women having the barrier that there is no health education program to promote screening. In social barriers 13 (20.63%) women felt their partners would not allow to go for pap test. Very few women had financial barrier to screening for cervical cancer .i.e. 8 (12.69%) cannot afford the cost of Pap test.

Section III: Assessment of knowledge on cervical cancer among women and to evaluate the effectiveness of community based education program (video based instruction) on knowledge

Table 3:Area wise Mean, Mean Percentage, Actual and possible gain score and Modified gain% of Pre test and post test Knowledge score of women on cervical cancer

N=100

Area	**Max score**	**Pre test**		**Post test**		**Actual gain score**	**Possible gain score**	**Modified gain %**
		Mean	**%**	**Mean**	**%**			
Anatomy of Cervix and Concept of Cervical Cancer	5	2.61	52.2	4.39	87.8	1.78	2.39	74.47
Risk factors, Causes and Sign & Symptoms of Cervical Cancer	4	1.89	47.25	3.47	86.75	1.58	2.11	74.88
Cervical Screening	6	1.49	24.83	4.48	74.66	2.99	4.51	66.29
Prevention & Treatment of Cervical Cancer	11	3.66	33.45	8.51	77.36	4.85	7.34	66.00

Table 3 reveals the knowledge score of women in four areas of knowledge questionnaire on cervical cancer. The highest mean percentage (87.8%) of post test score was in the area of anatomy of cervix and concept of cervical cancer, and the lowest mean percentage (74.66%) of post test score was in the area of cervical screening. It shows that maximum gain % had been in the area of risk factors, causes and sign & symptoms of cervical cancer (74.88%). The second highest gain had been in the area of anatomy of cervix and concept of cervical cancer (74.47%), followed by cervical screening (66.29%). The minimum gain had been in the area of prevention and treatment of cervical cancer (66%). Thus, the women gained knowledge on cervical cancer in all learning areas.

Effectiveness of Community based education program (video based instruction) in terms of knowledge on cervical cancer among women

To find out the significance of the mean difference between pre test and post test mean knowledge score of women on cervical cancer the following hypothesis was stated:

H_1 The post test mean knowledge score of women on cervical cancer will be significantly higher than the pre test mean knowledge score.

H_{01} The post test mean knowledge score of women on cervical cancer will not be significantly higher than the pre test mean knowledge score.

Table 4:Mean, Mean Difference, Standard Deviation Difference, Standard Error of Mean Difference and 't' value and p value of pre test and post test knowledge score of women on cervical cancer N=100

Knowledge score	Mean	M_D	SD_D	SE_{MD}	't' value	p value
Pre test	9.64					
		11.21	0.437	0.0448	27.537*	0.000
Post test	20.85					
t(99)=1.95 at 0.05 level of significance * significance(p<0.05)						

Table 4 depicts mean, mean difference, standard deviation difference, standard error of mean difference and 't' value and p value of pre test and post test knowledge score of women on cervical cancer. The computed t value, (t=27.53) p<0.05 indicates a significant difference between pre test knowledge score and post test knowledge score. Thus, it was concluded that the difference obtained in the mean pre test and post test knowledge score was a true difference and not by chance. Hence, the null hypothesis (H_{01}) was rejected and research hypothesis (H_1) was accepted. This indicates that the community based education program (video based instruction) was an effective method for increasing knowledge of women on cervical cancer.

Table 5:Area wise Mean, Mean Difference, Standard Deviation Difference, Standard Error of Mean Difference and 't' value of pre test and post test knowledge score of women on cervical cancer N=100

Areas	Mean		M_D	SD_D	SE_{MD}	't' value
	Pre test	Post test				
Anatomy of Cervix and Concept of Cervical Cancer	2.61	4.39	1.78	1.07	0.107	16.50*
Risk factors, Causes and Sign & Symptoms of Cervical Cancer	1.89	3.47	1.58	0.20	0.021	14.83*
Cervical Screening	1.49	4.48	2.99	0.20	0.02	20.38*
Prevention &Treatment of Cervical Cancer	3.66	8.51	4.85	2.20	0.22	21.96*

t(99)=1.95 at 0.05 level of significance
* Significance (p<0.05)

Table 5 shows the Area wise Mean, Mean Difference, Standard Deviation Difference, Standard Error of Mean Difference and 't' value of pre test and post test knowledge score of women on cervical cancer . It shows that the obtained 't' values

in each area i.e. Anatomy of cervix and concept of cervical cancer was 16.50*, risk factors, causes and sign & symptoms of cervical cancer 14.83*, cervical screening 20.38*, prevention and treatment of cervical cancer 21.96* were significant at 0.05 level of significance. The calculated 't' value for each area is more than their table value. It indicates that the difference between the mean pre test and post test knowledge score of women on cervical cancer in each area was by true difference and not by chance.

Hence, it showed that structured community based education program enable women to gain knowledge on cervical cancer in each area.

Section IV: Association of post test knowledge score of women on cervical cancer with selected variables

H_2 There will be significant association of post test knowledge score of women on cervical cancer with selected variables.

H_{02} There will be no significant association between post test knowledge score of women on cervical cancer with selected variables.

In order to determine the association of post test knowledge score of women on cervical cancer with selected variables, ANOVA and 't' test was used.

Table 6: ANOVA/t value showing association of Post test knowledge score of women with selected variables

					N=100
S.no.	**variables**	**Post test mean Knowledge score**	**df**	**t/F value**	**P value**
1.	**Age (in years)**				
1.1	21-30	20.58			
1.2	31-48	21.08	3/96	0.227 ^{NS}	0.87
1.3	41-50	21.26			
1.4	51-60	21.33			
2.	**Religion**				
2.1	Hindu	20.79	98	1.049 ^{NS}	0.297
2.3	Sikh	23.5			
3.	**Educational status**				
3.1	Non literate	16			
3.2	Primary	19.83			
3.3	Secondary	21.05	4/95	2.450^{NS}	0.051
3.4	Higher Secondary	20.68			
3.5	Graduate or Above	21.93			
4.	**Employment status**				
4.1	Unemployed	22			
4.2	Employed	21.5	3/96	0.239^{NS}	0.86
4.3	Self employed/Business	21.44			
4.4	Home maker	48.47			
5.	**Family Income (per month in rupees)**				
5.1	3000-8000	20.13			
5.2	8001-13000	21.31			
5.3	13001-18000	20.76	4/95	1.001 ^{NS}	0.411
5.4	18001-23000	21.21			
5.5	23001-28000	23.66			
6.	**Marital Status**				
6.1	Single	21.09			
6.2	Married	20.80			
6.3	Divorced/Separated	21	3/96	0.039^{NS}	0.990
6.5	Others	21.14			
7.	**Previous Knowledge**				
7.1	Yes	20.61			
7.2	No	20.62	98	0.830 ^{NS}	0.489

NS= Not significant

Table 6 depicts the association of post test knowledge score of women on cervical cancer with selected variables by ANOVA/'t' test. It shows that the association of post test knowledge score with age, educational level, employment status, family income, marital status by one way ANOVA (0.227), (2.450), (0.239), (1.001), (0.039) respectively and religion, previous knowledge by 't' test (1.049), (0.830) respectively. There was no significant association of post test

knowledge score of women with any of the selected variables at 0.05 level. Hence, the null hypothesis (H_{02}) was accepted and research hypothesis (H_2) was rejected.

DISCUSSION

In the present study, (63%) women were not interested to go for cervical screening and they were having the barriers to screening. The specific barrier for screening assessment showed that out of 63 women, 44 (69.8%) of the women had feeling of anxiety, fear as per personal Barriers. In institutional Barriers, 30 (47.61%) women having the barrier that there is no health education program to promote screening. In social barriers 13 (20.63%) women felt their partners would not allow to go for pap test. Very few women had financial barrier to screening for cervical cancer .i.e. 8 (12.69%) cannot afford the cost of Pap test.

This study is consistent with the findings of the study conducted by E were et al who determined barriers to screening in Kenya which showed that though 65% of participants wished to be screened, yet (11.4%) had financial barriers and (22.4%) had fear of abnormal result. [7]

The community based education program (video based instruction) in the present study for cervical cancer was effective in enhancing the knowledge of women by showing a difference between the mean knowledge score before and after the intervention (11.21$\pm$ 0.437) with 't' value 27.537 and p value 0.000 and obtained 't' value in each areas were significant at 0.05 level of significance.

Similarly Abiodun A olumide et al conducted a study to find the impact of health education intervention on knowledge and perception of cervical cancer and cervical screening uptake among adult women in rural communities in Nigeria. The study concluded that health education intervention was effective in increasing the knowledge on cervical cancer by showing the mean difference in knowledge score (23.94$\pm$0.55) with 't' value 52.48 and p value (<0.0001). [8]

The findings of the present study revealed that there is no association of post test knowledge score with selected variables such as age (F=0.227), education status (F=2.450).

This is supported by a pilot study conducted by Ingeborg Zehbe & Helle Moeller et al to assess acceptability of self sampling and human papillomavirus testing for cervical prevention in First Nation women from Northwest Ontario, Canada. The findings revealed that knowledge was independent of age and educational level. [9]

Hence, the community based education program (video based instruction) in terms of knowledge on cervical cancer was found highly acceptable and useful by women.

CONCLUSION

The community based education program (video based instruction) enhanced the knowledge of women on cervical cancer which was statistically significant. The maximum gain % had been in the area of risk factors, causes and sign & symptoms of cervical cancer (74.88%) and minimum gain % had been in the area of prevention and treatment of cervical cancer (66%). There was no significant association of post test knowledge score of women on cervical cancer with selected variables.

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