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Assessment of a Cervical Cancer Education Program for Rural Women in Indore, Central India

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Abstract

One of the main causes of cancer in women globally is cervical cancer. Educating people about health issues is one strategy to reduce the prevalence of this cancerous condition. The purpose of this study was to create an educational package on cervical cancer (EPCC) and assess how well it worked in terms of significantly raising rural women's awareness of the disease. Pre-test and post-test were conducted in a single group. A straightforward sample technique was used to choose thirty rural women. A structured knowledge questionnaire created by the researchers and a demographic questionnaire were used to gather data. The EPCC was intended to run for an hour and ten minutes.

After administering the structured knowledge questionnaire as a pre-test, the EPCC was used to teach information about cervical cancer.

The post-test was given on the eighth day. Both descriptive and inferential statistics were used to analyze the data.

The EPCC was successful in raising rural women's awareness of cervical cancer, as evidenced by the fact that the women's mean post-test knowledge score was much higher than their mean pre-test score. The chi-square test, which was used to calculate the relationship between pre-test knowledge scores and specific demographic characteristics, revealed that the women's pre-test knowledge score about cervical cancer was unaffected by any of the sociodemographic factors.

It was determined that the EPCC is successful in raising women's awareness of cervical cancer. Women urgently need to be educated about cervical cancer prevention due to the high prevalence of the disease.

Keywords: Cervical cancer - cancer prevention - educational package - health education - rural women

1. Introduction

Cervical cancer is the fourth most prevalent cancer in females and the seventh most common cancer overall, making it one of the most common malignancies among women worldwide. An estimated 528,000 new cases and 266,000 fatalities were reported globally in 2012, making up 7.5% of all female cancer deaths. Less developed areas account for about 87% of cervical cancer mortality. In Eastern and

Middle Africa, cervical cancer continues to be the most prevalent malignancy among women (GLOBOCAN, 2012).

According to estimates of new cancer cases by India's major states, the burden is particularly significant in those states with large populations. Cancers of the breast and cervix alone account for over 41.3% of all cancer cases in Indian women. According to predictions, the incidence of cervical cancer would increase from 96,156 cases (0.096 million) to 148,813 cases (0.148 million) between 2011 and 2026 (Dsouza et al., 2013).

There are 432.20 million women in India who are 15 years of age or older and at risk for cervical cancer. According to current figures, 67477 women die from cervical cancer each year, and 122844 women receive a diagnosis. Age-standardized mortality is 12.7, while age-standardized incidence is 22. (ICO/HPV, 2014). According to data from 2008, the age-standardized incidence and death rates per 100,000 women were 27 and 15, respectively (Ferlay et al., 2010).

In India, cervical cancer is the second most common cause of cancer-related deaths among women between the ages of 15 and 44.

The Human Papillomavirus (HPV) is linked to invasive cervical cancer. HPV 16 or 18 is known to be the cause of 70% of cancer cases (WHO, 2013). Early marriage and childbearing, multiparity, poor personal cleanliness, and low socioeconomic position are among the main risk factors for this disease, according to a thorough analysis of Indian case studies (Raychaudhuri and Mandal, 2012). Because of its slow growth, cytologically detectable antecedents, and efficient treatments, cervical cancer is one of the most preventable malignancies if diagnosed early. Therefore, early detection and treatment of precancerous lesions are critical to lowering cancer morbidity and death. It is possible to detect lesions and stop the progression.

By identifying premalignant lesions, the Papanicolaou (Pap) test, sometimes referred to as cervical cytology screening, has significantly decreased the incidence of cervical cancer (Balogun et al., 2012).

Due to widespread routine Pap smear screening, invasive cervical cancer incidence and mortality have drastically decreased in developed nations over the past 50 years (Brotto et al., 2008). Contrary to this startling finding, cervical cancer is the second most frequent malignancy in women and the primary cause of cancer-related deaths in developing nations as a result of insufficient screening service use (Reis et al., 2012).

Every woman between the ages of thirty and forty-nine, at least once in their lifetime. Five years should be the minimum screening interval (frequency) (and ten years if an HPV test is being used). Prioritizing coverage within the at-risk target age group and ensuring thorough follow-up for women with abnormal screening test results is also advised, as opposed to maximizing the number of tests a woman will get in her lifetime. According to reports, there were almost a billion women between the ages of 30 and 49 worldwide in 2012, and the majority of them had never, ever been checked in low-resource settings (WHO, 2013).

The percentage of women screened by Pap tests in affluent nations ranges from 68 to 84% (Swan et al., 2003; Harry et al., 2006), while in India, it is a pitiful 2.6 to 5% (WHO, 2003; Gakidou et al., 2008). It is

not surprising that nearly three-quarters of cervical cancer cases in India are discovered at an advanced stage (Government of India-World Health Organization Collaboration Program 2004-2005), significantly lowering the likelihood of survival and cure (Shekhar et al., 2013).

Women must be aware of the screening options in order to prevent this. There are cervical cancer screening facilities in India.

Any health program aimed at preventing and controlling cervical cancer would largely depend on how well-informed potential beneficiaries are about the illness (Sankaranarayanan et al., 2009). According to a study done in rural India, only 17 (7.1%) of the 21 respondents who had a family history of cervical cancer had a Pap smear. Nearly half of those who had never been screened thought they were not susceptible to the illness, whereas the majority of respondents (43.5%) gave "no reason" for not getting a Pap test (Shekhar et al., 2013). 50% of women with cervical cancer have never had a pap test, according to research (Salslow et al., 2012). In addition to ignorance of the illness and unfamiliarity with the idea of prevention, there are numerous other factors that contribute to poor screening program response, chief among them being a lack of communication about the availability and advantages of cervical screening (Amarin et al., 2008) and a lack of support from the husbands. In many nations, particularly India, it is customary for husbands to make decisions about their wives' medical care.Cervical cancer is one of many diseases that are stigmatized in India and are linked to STDs and extramarital affairs. For this reason, the majority of Indian women decline to be screened. Lack of symptoms, lack of counseling, physician refusal, and even fear of vaginal inspection were cited in a study as reasons for not participating in the screening (Thippeveeranna et al., 2013).

According to a study conducted in a Mumbai slum, couples have little knowledge of cervical cancer and pap smear testing (Donta et al., 2012). Therefore, it is crucial to educate women and their families about cervical cancer and the need of screening for the illness. Numerous studies have been conducted to assess women's knowledge and awareness about cervical cancer and cervical cancer screening (Shankaranarayanan et al., 2009; Raychaudhuri and Mandal, 2012). Numerous studies have demonstrated that health education using various teaching techniques is a successful method of information transfer. Cervical cancer prevention requires education (Rahangdale, 2012; Simayi et al., 2013). The educational initiatives are highly successful in raising awareness of cervical cancer, perceived vulnerability, and cancer preventative practices (Choi, 2013). Women can be empowered via education by learning about cervical cancer, its early warning signs, and the availability of effective treatments. This will significantly affect the fight against this illness (Issac, 2009).

In light of this, a study was carried out with the following goals: i) to create a cervical cancer education package for women ii) assess the educational program's efficacy in terms of knowledge acquisition. iii) to see whether certain demographic factors and the pre-test knowledge are related. The results of this study will aid in preventing cervical cancer by teaching women about the disease and its effects.

The following theories were developed and examined at the significance level of 0.05: Hello: The women's mean post-test knowledge score about cervical cancer will be much higher than their mean pre-test score. H2: The sociodemographic factors and women's pre-test knowledge of cervical cancer will be significantly correlated.

Materials and Methods

Study design

In this work, a one-group pre-test, post-test quasi-experimental design was used. A rural area in Indore, India, was the source of the participants.

The non-probability convenience sampling method was used to choose thirty women. Those between the ages of 35 and 55, those who were willing to engage in the study, and those who could read, write, and comprehend the local language, met the inclusion criteria.

The study did not include women who had been diagnosed with cervical cancer.

Development of the data collection instruments

The authors created two instruments for this study: a structured knowledge questionnaire on cervical cancer and a sociodemographic questionnaire.

The participant's age, religion, educational background, occupation, marital status, family monthly income, type of family, family history of any cancer, and source of cervical cancer health information were all included in the nine items that made up the sociodemographic questionnaire.

Twenty multiple-choice questions on "general information and meaning of cervical cancer," "causes and risk factors," "signs and symptoms," "preventive measures," and "treatment and staging" were included in the structured knowledge questionnaire. A score of "1" was given for the right answer and "0" for the incorrect answer for each item.

The content validity was determined by calculating the percentage of agreement among the eleven Obstetrics and Gynecology (ObG) and ObG Nursing specialists who agreed on the items' accuracy and applicability. The validated instruments were translated from English into Kannada and then back into English to determine the language validity. The reliability coefficient was calculated after the instruments were pretested on five subjects to assess the items' clarity. A r value of 0.81 was obtained using the split half method, Karl Pearson's correlation coefficient, and the Spearman Brown Prophecy formula. The questionnaire's item analysis revealed that each of the 20 items had a difficulty index between 30% and 70%, indicating that they were all appropriate. Three items with a poor discrimination index were changed and kept, while seventeen things had an acceptable discrimination index.

Development and description of the educational package on cervical cancer (EPCC)

Prior to finalizing the content of the EPCC and the methods to be utilized for conducting the sessions, a thorough study of the literature on cervical cancer awareness was conducted. Figure 1 shows a diagrammatic representation of the steps used to design the EPCC.

Four components made up the educational package: i) the EPCC's objectives; ii) the content, which included the topics included in the knowledge questionnaire's development section. iii) the teaching approach, which uses a lecture-cum-discussion and a role-play to convey the lessons on risk factors and preventive actions; iv) audiovisual materials, which include a booklet, a video, and power point slides.

The educational session lasted one hour and ten minutes in total, consisting of a 45-minute lecture and discussion, a 15-minute role-play, and a 10-minute film. At the conclusion of the session, a brochure on cervical cancer prevention was created and given to the women.

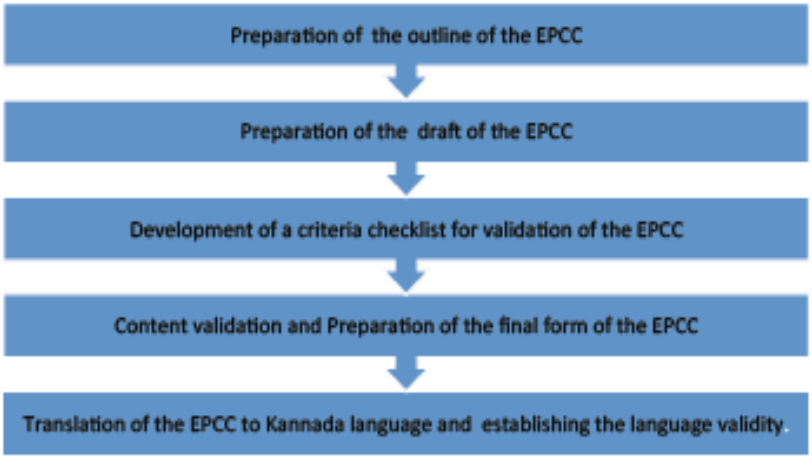

Figure 1. Diagrammatic Representation of Steps in the Development of the EPCC

Data collection

A pilot research using the EPCC was carried out on a sample of ten women prior to the data collection. The feasibility of the study was determined. Data collection took place in December 2011 after the pilot trial. The participants were asked to gather in an An-ganwadi, which is a government-sponsored facility for mother care and child care. They were given the structured knowledge questionnaire and the demographic questionnaire after giving their informed consent.

The pre-validated EPCC was used to perform the instructional program after the questionnaire was completed. The same structured knowledge questionnaire used for the pre-test was used for the posttest on the eighth day. Every one of the thirty ladies who took part in the pretest also took part in the post-test.

Analysis

A description of the sample based on the sociodemographic factors was part of the analysis. A mean of the total knowledge was computed. A paired "t" test with a statistical significance level of $p<0.05$ was used to examine the variations in the mean pre-test and post-test scores. The Chi-square was calculated to investigate the relationship between pre-test knowledge scores and particular demographic characteristics.

Results

The study's findings are displayed under the following headings: Women's sociodemographic profile, The EPCC's creation, its efficacy, and the correlation between knowledge and particular variables.

Socio-demographic profile of the women

According to the frequency and percentage distribution of the women's sociodemographic characteristics, the majority of them (63.3%) were between the ages of 35 and 40, had finished elementary school, earned between INR 3,001 and 6000 per month, and were members of nuclear families. None of the ladies had a family history of cancer, and they were all married. Ninety percent of them got their information about cervical cancer from the media. (Table 1)

Development of the EPCC

The percentage of experts who agreed on the EPCC's development criteria was used to analyze the data on content validation.

All criteria received 100% agreement among experts, with the exception of the "selection of content" criterion, which had 80% agreement. The EPCC's curriculum includes information on risk factors as recommended by the subject matter experts.

Effectiveness of the Educational Package on Cervical Cancer

Both descriptive and inferential statistics were used to analyze the pre-test and post-test results in order to assess the efficacy of the EPCC.

Pre- test and Post- test Knowledge Scores of the Women on Cervical Cancer

Women with cervical cancer had a mean pre-test knowledge score of 6.83, which was lower than their mean post-test score of 14.86. The women's pre-test and post-test knowledge scores in each area of cervical cancer were then examined. The mean % was computed after it was discovered that the maximum score in each location of cervical cancer varied. The pre-test mean percentage was less than 41% in every category, with the highest percentage being 40.8% in "treatment and staging of cervical cancer" and the lowest number (29.2%) in "preventive measures of cervical cancer." The fact that all post-test mean percentages were higher than 65% is positive; the highest percentage was 81.1% for "causes and risk factors of cervical cancer." (Fig. 2).

The hypothesis (H1) was examined in order to ascertain the EPCC's efficacy. A paired t test was used to examine the women's overall and area-specific means of knowledge. The pre-test mean knowledge score was 6.83 (SD± 2.3), while the post-test mean score was 14.86 (SD± 2.2). The post-test mean was considerably higher than the pre-test mean, according to the "t" value calculated between the means of the two tests, $t(29)=29.8$, $p<0.05$. This demonstrates that the EPCC is an effective package for educating women and has significantly increased women's understanding of cervical cancer. [Table 2].

Table 1. Frequency and Percentage Distribution of Demographic Variables of Women

Demographic variables		Frequency	Percentage
Age	35-40	19	63.3
	41-45	5	16.7
	46-50	3	10
	51-55	3	10
Religion	Hindu	12	40
	Muslim	18	60
Education	Primary	19	63.3
	Secondary	11	36.7
Occupation	Beedi roller	15	50
	Home makers	15	50

The post-test means in all areas of cervical cancer knowledge have considerably risen in the women, according to the "t" computed between the pre-test and post-test area-wise means (Table 3). This suggests that the EPCC was successful in raising women's awareness of all five aspects of cervical cancer: "general information and meaning of cervical cancer," "causes and risk factors," "signs and symptoms," "preventive measures," and "treatment and staging."

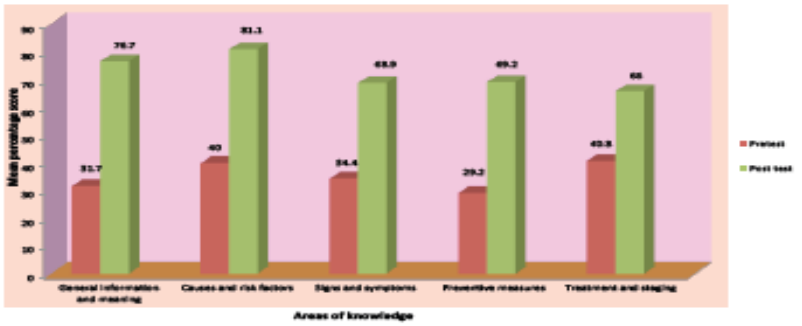

Figure 2. Bar Graph Showing Area- wise Mean Percentage Knowledge Scores on Pre-test and Post-test

Table 2. Mean, Standard Deviation(SD) and 't'value between Pre-Test and Post-Test knowledge scores N=30

Test	Knowledge			t'	Inference
	Mean	d	SD		
Pre-test	6.8	8.03	1.47	29.8	Significant
Post-test	14.8				p<0.05

Maximum possible score=20; t (29) =2.05, p<0.05

Table 3. Area-wise Paired 't' Test Showing the Significant Difference between Pre-Test and Post Test Knowledge Scores

Area	Mean		¯d	±SD	t' value
	Pre-test	Post-test			
General information	0.63	1.53	0.93	0.6	8.12*
Causes and risk factor	1.24	2.43	1.23	0.81	8.27*
Signs and symptoms	1.03	2.06	1.03	0.85	6.52*
Preventive measures	2.33	5.53	3.21	1.15	14.9*
Treatment and staging	1.63	3.33	1.64	0.95	9.35*

*significant; p>0.05, t (29) =2.05

Association between the Pre- test Knowledge and Selected Variables

The pre-test knowledge score on cervical cancer was independent of all the demographic variables, including age, religion, educational status, occupation, monthly family income, type of family, and source of health information, according to a chi-square analysis of the data.

Discussion

As of right moment, the only cancer that can be prevented and has a recognized cause is cervical cancer. In order to lower morbidity and death, early screening and prevention efforts, as well as public awareness of this illness and its risk factors, are crucial. Therefore, the purpose of this study was to create a cervical cancer education package for rural women and assess its efficacy in terms of a notable improvement in the women's understanding of the disease.

According to the analysis, the majority of women (63.3%) belonged to nuclear families, were between the ages of 35 and 40, had completed basic school, and earned between INR 3,001 and 6000. Half of the women were homemakers, while the other half worked as beedi rollers (beedis are tobacco rolled in a leaf used for smoking). The majority of them (90%) said they learned about cervical cancer via the media, and none of them had a family history of the disease.

According to the current study, the women's pre-test mean percentage of knowledge in all areas of cervical cancer was below 41%, indicating that their knowledge was insufficient. According to a study conducted in Punjab, northern India (Kaur and Kaur, 2012), 62.3% of women had insufficient knowledge about cervical cancer. The mean percentage in this instance was just 40.5, which is comparable to our study's results. Women in various nations and demographic groups have been found to have inadequate knowledge of the many facets of cervical cancer. 81% of women recruited from a gynecology clinic had "limited" or "no" knowledge of cervical cancer and 91% about pap smears, according to a hospital-based study (Roy and Tang, 2008).

Preventive measures had the lowest level of pretest knowledge in our study. Saha et al. (2010) discovered that college students had extremely low levels of knowledge about cervical cancer risk factors, which is in contrast to the results of other research conducted in the nation. The majority of women (89.2%) in a different study conducted in Kerala were unaware of the risk factors for cervical cancer (Aswathy et al., 2012). We discovered that following the women's EPCC, the mean percentage was highest in the category of causes and risk factors.

Oh et al. (2010) likewise revealed low levels of knowledge, finding that just 19% of adult Korean women were aware that HPV infection was a risk factor for cervical cancer. However, in a different study conducted among Chinese women, Xu et al. (2011) discovered that only 52.5% of the participants were aware that early detection of cervical cancer is possible, and only 26.9% stated that human HPV infections are risk factors for cervical cancer. The results of our current investigation, which revealed that women had insufficient knowledge of cervical cancer, its causes, risk factors, and prevention in the pre-test, are consistent with the findings of all previous studies.

One of the reasons for the high incidence of cervical cancer in underdeveloped nations has been shown to be a lack of knowledge about the disease.

To educate women about cervical cancer prevention, a number of Information, Education, and Communication (IEC) initiatives have been developed. However, the effectiveness of any educational program aimed at preventing and controlling cervical cancer would largely depend on the potential beneficiaries' knowledge of the many components of cervix cancer following the program. The women who had the EPCC significantly improved their knowledge, according to our study.

Our study's conclusions are amply corroborated by those of other Indian studies. Similar to the setting of our study, Fernandes (2011) discovered a significant increase in the awareness of women about cervical cancer who attended a scheduled education session on the prevention of carcinoma of the cervix on women in a chosen rural area of Mangalore. "Risk factors" and "structure of the female reproductive system" were the topics of instruction. The findings of our investigation are comparable. Wright et al. (2010) discovered that after participating in the health education program, urban women's baseline knowledge increased in a Nigerian study.

In a recent study conducted in Korea, Choi (2013) found that immigrant women's knowledge significantly increased following the educational program when compared to the control group. The results of all these studies demonstrate that women's understanding about cervical cancer has improved as a result of education.

Our research demonstrates that knowledge about cervical cancer is unaffected by any of the chosen factors, including age, religion, educational attainment, occupation, monthly family income, family type, and health information source.

Hoque et al. (2008) have reported similar results in other research.In contrast to the study's conclusions, Kaur and Kaur (2012) found a strong correlation between the women's awareness level and their occupation, degree of education, and monthly family income. However, it corroborated our study's conclusions about age and religion. Another study found a correlation between high family wealth, high educational attainment, and knowledge of HPV risk factors and vaccinations (Alassad, 2012).

The study's strength lies in the fact that it focused on rural women because they are the ones who lack access to health information, and the majority of them cited the media as their primary source of information. A few restrictions have been noted. Although the sample size was sufficient to assess a program's efficacy, it is insufficient to draw broad conclusions about women's lack of information about cervical cancer. The post-test was administered eight days following the intervention; there was little difference between the pre-test and the post-test, and the internal validity is dubious due to the absence of a control group. To determine whether the enhanced information resulted in positive screening practices, a follow-up research of the women's screening compliance for cervical cancer prevention would be required.

Notwithstanding the study's limitations, it is clear that all parties involved need to make an effort to reach out to women through well-planned educational programs and structured teaching materials.

Information, education, and communication about cancer that is sensitive to cultural differences will empower women to combat the disease. This will significantly lower the prevalence of cervical cancer.

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