

RESEARCH COMMUNICATION

Efficacy of a Training Course Given by Midwives Concerning Cervical Cancer Risk Factors and Prevention

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Abstract

Background: Cervical cancer is the second most common cancer type seen among women in most countries and an important cause of mortality. Although it is a preventable disease, most women living in developing countries cannot reach effective screening programs. It is essential that appropriate education about cervical cancer is provided. **Objective:** This experimental field study was performed with the aim of evaluating the efficacy of training given to women about cervical cancer risk factors and primary and secondary prevention precautions. **Methods:** The research focused on women between 25 and 29 years of age, literate, married and having social security. The study was conducted in the district of Evka 4 Health Care Center between the dates of April to August 2005. The women were given survey forms and questionnaires in order to determine their socio-demographic features and knowledge level about cervical cancer in the course of home visits. They were trained and given a manual at the data collection stage. At a second visit, carried out three months later, the trained women were again evaluated for their knowledge level about cervical cancer, risk factors and whether they had undergone a Pap smear test. **Results:** Together with the difference between pre-/post-training mean information scores related to women's cervical cancer risk factors, the difference between the women's having a Pap smear test in the pre-/post-training period was found statistically significant. Only 16.3% of the women stated that they had a Pap smear test in the post-training period. **Conclusions:** It was determined that the women were in need of knowledge about risk factors related to cervical cancer, prevention from and early diagnosis of cervical cancer, but there was no significant increase in the rate of having a Pap smear test despite the increase in the knowledge level with the training given.

Key Words: Cervical cancer - midwife training - risk factors - Pap smear test

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Introduction

Cervical cancer is the second most common type of cancer among women and also an important reason for mortality. Cervical cancer composes of 12% of all the cancer types seen among women. The number of new cases per year is a half million and 80–90% of these cases are seen in developing countries. The number of the cases defined in the year of 2000 in the world is 471.000 and the number of the deaths from this disease is 288.000 (Sankaranarayanan et al., 2001; WHO, 2002; 2004).

In Turkey, according to the 1999 data of the Ministry of Health, Department of Cancer Control, cervical cancer composes of 3% of all the cancer types seen among women (Sağlık Bakanlığı, 2002). According to the data of the Izmir Cancer Registry (KIDEM), the annual incidence rate of cervical cancer in Izmir is 5.4 out of 100,000 (KIDEM, 2003). It has been stated that the insufficiency of prenatal care as well as having many deliveries, getting married and starting to have sex at an early age is effective in the development of cervical cancer among women in Turkey

(Kalyoncu et al., 2003; TNSA, 2003).

The frequency of cervical cancer in developing countries is higher than in developed countries because there are not effective screening programs to ascertain and cure the lesions predisposing to cancer before they turn into invasive cancer in developing countries (WHO, 2002, ACCP, 2004). Cervical cancer is a preventable disease, most women living especially in developing countries cannot reach effective screening programs, though (Sankaranarayanan et al., 2001; Maaita and Barakat, 2002, Nganwai et al., 2007). The technique which is recommended by the World Health Organization to be used in cervical cancer screening programs is Pap smear test (WHO, 2002, WHO, 2004). Moreover, many studies which were realized have shown that the most appropriate method to be used for cervical cancer screening is Pap smear test. Yet, international studies show that women do not have sufficient knowledge about cervical cancer risk factors and Pap smear (Ideström et al., 2002, Pearlman et al., 1999, Waller et al., 2004). The fact that risk factors and smear test are not known results in early diagnosis

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and treatment methods' not being able to be used (Pearlman et al., 1999, Gupta, 2002). It has been stated that the chance to live for the women with preinvasive lesions ascertained in an early period by Pap smear test is 100%. And, for this reason it is necessary to raise awareness of women about having a regular Pap smear test in order to prevent cervical cancer or cure it through early diagnosis (Twinn et al., 2002). It has been observed with many studies that the knowledge level of the women increased through health education given to them about the prevention from cervical cancer and they had a Pap smear test or were eager to have it in the post-education period (Mcavoy and Raza, 1991; Ansell et al., 1994; Kelly et al., 1996). That's why it has been stated that women are in need of the development of behavior aimed at having a Pap smear by being trained about the risk factors and early diagnosis related to cervical cancer (Thomas and Fick, 1994; Maaita and Barakat, 2002; Moore and Tajima, 2003).

In our country, midwives are the health manpower working in health care centers and dispensaries where a person can get first level health services. For this reason, they are generally supposed to work in the direction of Basic Health Services. There are basic application fields (antenatal care; parental education; family planning; health education) for midwives in Basic Health Services. However, it has been stated that midwives should give health education services not only aimed at women, but aimed at family and society, as well (WHO, 2002, Turkistanlı et al., 2003). Midwives come together more often with women than the other health personnel (Turkistanlı et al., 2003). Because of this, it is important for women to be supported by midwives in order to be prevented from cervical cancer and be oriented to Pap smear test for early diagnosis.

Materials and Methods

Sampling

The mid-year population (June 2004) of the 25-29 year-old women registered Evka 4 Health Care Center connected to Bornova Health Group Directorate, Izmir Provincial Health Directorate was 4.051. The number of the women literate, married and having social security was determined to be 2636 by scanning Household Evaluation Forms (HEF). This number consisted of the research population. 254 women were included in the research by calculating the sample size with the method that is used in the cases in which the population number is known (N: 4.051) but the frequency of the disease is not known in the Epi-info 5.0 statistics package, with 90% confidence interval and 5% error margin. The addresses and phone numbers of all the women between 25-29 years of age, literate, married and having social security were listed by scanning The HEFs belonging to the midwives' region. The number of the women to be included in the research was determined by using stratified sampling method according to age. The women to be included in the research from every stratum were determined by using simple random numbers table. 254 substitutes were determined by using the same method

regarding the possibility that the women did not want to be a part of the research and they could not be reached. 67 women from the substitute list participated in the research (26%).

254 women living in the Evka 4 Health Care Center District were given training about the risk factors of and prevention from cervical cancer. 227 out of 254 women trained and having answered the first question form could be reached and the evaluations were made by taking these 227 women into consideration (the return rate for post test is 89.4%). Among the reasons for not being able to reach 27 trained women out of 254 were moving, visiting out-of-town relatives, working as a seasonal worker (collecting olives), leaving home by divorcing, going up to the parents to give birth.

Training Program

The data of the research were collected during home visits. In the course of the first home visit, a questionnaire was applied by face-to-face interview method in order to determine the women's socio-demographic features and their knowledge level (pre-test) about cervical cancer. The women were given an almost thirty-minute training about cervical cancer, risk factors, primary and secondary prevention measures by using an illustrated guide. Moreover, they were given a training booklet titled "It is Possible to Prevent Cervical Cancer: Early Diagnosis Saves Lives". In the second visit realized three months later, the women's knowledge level was re-evaluated (post-test) and they were asked if they had a Pap smear or not.

Ethics

A permission was granted from Bornova Health Group Directorate, Izmir Provincial Health Directorate and Evka 4 Health Care Center before doing this research. The questionnaire prepared by the researcher was sent to the State Institute of Statistics for feasibility analysis. The questionnaire was reorganized by taking the changes demanded by the State Institute of Statistics into consideration. The women to be included in the research were explained the objective of the research and their verbal consents were obtained in order to let them participate in the research. The ones who did not want to take part in the research were given training booklets. The women from the substitute list participated in the research instead of the ones who did not want to.

Data Analysis

The analysis of the data obtained at the end of the research was done through SPSS (Statistical Package for Social Science) 11.1 and the number and percentage distributions of the descriptive findings regarding women were given in this data analysis. The difference between the answers of the women to the questions about cervical cancer risk factors in the pre- and post-training period was examined through chi-square test (McNemar) in the dependent groups. T-test was done among dependent samples in order to compare the pre-test and post-test mean information scores of the women. The factors that could affect the women's pre-test and post-test mean

Table 1. Socio-demographic Characteristics of the Women

Characteristic	Category	n	%
Age group	25-34	86	37.9
	35-44	91	40.0
	45-54	42	18.5
	55-59	8	3.5
Educational Level	Primary	151	66.6
	High-school	62	27.3
	University	14	5.7
Employment status	Working	22	9.7
	Not working	205	90.3
Social Security	Emekli Sandığı*	47	20.7
	SSK	165	72.7
	Bag-kur**	15	6.6
	Smoking status	Smoking	75
Living with someone who smokes	Quit smoking	24	10.6
	Never smoked	128	56.4
	Yes	117	51.5
	No	110	48.5
Total		227	100.0

*Pension Fund for Civil Servants; SSK, Social Insurance Institution; **Social Security Institution for the Self-employed

information scores (independent variables) were examined through the significance test of the difference between the two averages. The difference between the women's having a Pap smear test in the pre-training and post-training period was examined through chi-square test (McNemar) in the dependent groups.

Results

The women's socio-demographic characteristics are shown in Table 1. The pre-test mean information scores of the women related to cervical cancer risk factors have increased in the post-test. The difference between pre-test and post-test mean information scores are also statistically significant (Table 2).

It has been determined that the women had minimum knowledge of cervical cancer risk factors including giving birth to more than three babies (9.3%), living and/or working with someone who smokes (17.6%), and vaginal douching (18.9%) in the pre-training period. Yet, in the post-training period the correct answers to these questions significantly increased, and 96.9% of the women stated that giving birth to more than three babies, 95.6% of them said that living and/or working with someone who smokes, and 93.4% stated that vaginal douching are risk factors for cervical cancer.

It has been determined that 75.8% of the women told not to have a Pap smear test in the pre-training period and 16.3% of them had a Pap smear test in the post-training period (Table 3). The women's status of having a Pap smear test in the pre-/post-training period and their pre-/post-test mean scores is given in Table 3. The difference between pre-test and post-test mean scores of the women who had a Pap smear test and who did not have a Pap smear test in the pre-training period was not statistically significant. While the difference between pre-test mean

Table 2. Evaluation of the Differences between Pre-test and Post-test Mean Information Scores of the Women related to Cervical Cancer Risk Factors

Results	Pre-test (n=227)	Post-test (n=227)
Average Score	11.11	22.64
Standard Deviation	4.48	1.40
Min-Max Score	1-20	15-24
t and P Values	t=-42.32	p= 0.00

Table 3. Pre-test and Post-test Mean Scores of Women According to Their Having a Pap Smear Test

Group	n (%)	Pre-test	Post-test
Pre-training			
Pap smear Yes	55 (24.2)	11.45 ± 4.71	22.73 ± 1.30
Pap smear No	172 (75.8)	11.00 ± 4.41	22.62 ± 1.43
t and P Value		t=-0.65, p=0.51	t=-0.51, p= 0.60
Post-training			
Pap smear Yes	37 (16.3)	10.46 ± 5.32	23.00 ± 1.03
Pap smear No	190 (83.7)	11.24 ± 4.30	22.57 ± 1.45
t and P Value		t=-0.96, p=0.40	t=1.70, p= 0.03

Table 4. Status of Women having a Pap Smear Test in the Pre-training and Post-training period

Pre-training	Post-training Pap smear		Total	χ^2 *	P
	Yes	No			
Yes	10 (18.2)	45 (81.8)	55 (100)	4.01	0.04
No	27 (15.7)	145 (84.3)	172 (100)		
Total	37 (16.3)	190 (83.7)	227 (100)		

* McNemar test

scores of the women were not found statistically significant as the mean information scores of the women having a Pap smear test (and not having a Pap smear test in the post-training period) were analyzed, it was determined that the difference between post-test mean information scores were statistically significant (Table 3).

It has been determined that only 8.4% of the women were previously informed about Pap smear test and they generally got this information from health care personnel (78.9%). It has been determined that the difference between the women's status of having a Pap smear test in the pre-/post-training period was also statistically significant. 18.2% of the women who had a test in the pre-training period had another test in the post-training period, but 15.7% of the women who did not have a test in the pre-training period had a test in the post-training period (Table 4).

Discussion

Cervical cancer is a preventable disease, but most women living especially in developing countries cannot reach effective screening programs (Sankaranarayanan et al., 2001; Maaita and Barakat, 2002; WHO, 2002). Among the factors which affect women's having Pap smear test are their knowledge, belief and behavior about cervical cancer and screening programs. The studies done indicate that an important proportion of the women do not know the risk factors leading to cervical cancer, Pap smear test, the importance of positive cervical smear and treatment

success (Ralston et al., 2003; Hislop et al., 2004; Waller et al., 2004).

The fact that the risk factors and smear test are not known results in women's not using the methods of preventing cervical cancer, early diagnosis and treatment (Kelly et al., 1996; Pearlman et al., 1999; Gupta et al., 2002). The studies done in recent years inform that smoking rates among women are gradually increasing (Sood, 1991; Pullon et al., 2003; ACCP, 2004). The studies which mention that smoking is a factor in cervical cancer highlight the necessity of women's being more sensitive about giving up smoking (Sood, 1991; Pullon et al., 2003). The rate of the women who said that their husbands smoked is 51.5%. In the present case, given that half of the women live in a smoking environment, the women and their husbands should be educated about the dangers of passive smoking.

It has been determined through this study that less than 50% of the women know 14 out of 24 cervical cancer risk factor questions which take place in the pre-test. The mean information score of the women was found 11.11 ± 4.48 out of 24. That the women have a low knowledge level shows that they have not been informed enough previously. Moreover, it has been determined through this study that the women have the lowest level of knowledge about cervical cancer risk factors including giving birth to more than three babies (9.3%), living and/or working with someone who smokes (17.6%) and vaginal douching (18.9%) in the pre-training period.

Hislop et al (2004) found the pre-test mean information scores of the women as 5.2 out of 10 in the study which was done in order to assess the knowledge status about the risk factors related to cervical cancer and Pap smear test of the Chinese women living in Canada. Maaita and Barakat (2002) determined that 77% of the women do not know the risk factors related to cervical cancer in a study done in Jordan in order to examine the women's attitude towards cervical cancer screening programs. Ralston et al (2003) determined in a study in which they examined the Chinese women's knowledge status about cervical cancer risk factors that these women do not know most of the risk factors. In another a study done in order to examine the beliefs and attitudes about cervical cancer risk factors in English society that 38% of the women are not informed about the factors which increase cervical cancer risk (Waller et al., 2004). In the study realized by Twinn among 228 Chinese women in Hong Kong with the aim of evaluating the efficacy of the training given and making the women acquire behavior towards having a Pap smear test by increasing the women's knowledge level about cervical cancer risk factors and Pap smear test, it was observed that the knowledge of the women about cervical cancer and risk factors were insufficient, but in the post-training period this level significantly increased (Twinn, 2001).

Through this study it has been determined that the women had low knowledge level about cervical cancer risk factors in the pre-training period, only 8.4% of them were previously informed about Pap smear test and had a Pap smear test (24.2%). Likewise, Ralston et al., stated in a study done with Chinese immigrant women in the

U.S.A. that most of the women did not know cervical cancer risk factors and the lack of knowledge of the women affected having a Pap smear test in a negative way (Ralston et al., 2003). Through a study done in South Africa, it was determined that 87% of the women did not have a Pap smear test because they did not know anything about it (Wellensiek et al., 2002).

There are many studies in Turkey as well which determine that the women are not informed about Pap smear test and also of the women have not had a Pap smear test in Turkey and some other countries (Maaita and Barakat, 2002; Gıchangı et al., 2003; Kalyoncu et al., 2003; Oran et al., 2003).

Kalyoncu et al., determined through a study in which they examined the women's knowledge about and attitude towards Pap smear test that only 20% of the women had a Pap smear test; Oran et al., determined through a study among academicians that only 28.2% of them had a Pap smear test (Kalyoncu et al., 2003, Oran et al., 2003). Through a study done in Jordan to examine the attitudes of the women towards cervical cancer screening methods, Maaita and Barakat determined that 75% of the women did not have a Pap smear (Maaita and Barakat 2002). Gıchangı et al., determined through a study done in Kenya that the rate of having a Pap smear test of the women with cervical cancer was 24%, and the rate of not having it was 20% (Gıchangı et al., 2003). It was determined through this study that 24.2% of the women had a Pap smear test in the pre-training period.

As it can be understood from the results of the study, it is obvious that Pap smear screening programs are not sufficient by themselves, and informative studies which raise awareness of the women need to be done in order to increase the rate of having a Pap smear test. Twinn and Cheng stated in a study realized in Hong Kong that 57% of the women had a Pap smear test, but they emphasized that this rate was not enough and studies should be kept on in order to increase the women's participation in the screening programs (Twinn and Cheng, 2000). It can be seen in some countries that the rates of having a Pap smear test vary between 40–70% (Claeys et al., 2003). The difference in these rates makes us think that community-based cervical cancer screening programs has had a positive effect on Pap smear test application rates. Community-based screening programs are the programs which have strategical effect and are used to reduce morbidity and mortality rates of cervical cancer.

Many studies which show that having knowledge about cervical cancer and Pap smear test affect the participation in cervical cancer screening programs have been done (Kelly et al., 1996; Pearlman et al., 1999; Gupta et al., 2002). As in the other studies, it was found statistically significant also in this study that the post-test mean information scores of the women who had a Pap smear in the post-training period were higher than the ones who did not have it. These results indicate that the women are in need of training about cervical cancer risk factors and early diagnosis in order to develop behavior to have a Pap smear test. Through a study in which the knowledge change among the women and their having a Pap smear test status were evaluated with a post-test given six weeks

later than training, Twinn determined that 20% of the trained women had a Pap smear test in the post-training period and 42% of them were intentioned to have a test (Twinn, 2001). In the study about the importance of knowledge in breast cancer and cervical cancer screening, Pearlman et al., stated that the women did not have sufficient knowledge about cervical cancer risk factors and this prevented them from having a test (Pearlman et al., 1999). Besides, in this study the difference between the women's status of having a Pap smear test in the pre-training period and post-training period was found statistically significant. That the tendency of the women who previously had a test to have a Pap smear test is higher than the ones who did not have a test before shows that repetition in training is effective in turning information into action.

Through this study, it has been determined that the women did not have sufficient knowledge about cervical cancer risk factors, prevention from and early diagnosis of cervical cancer; the rate of the women having a Pap smear test was low; but the women's knowledge is to increase with the training given and they can develop behaviors aimed at having a Pap smear test. Among the factors which affect the women's having a Pap smear test are that the women do not have sufficient knowledge about cervical cancer and screening programs along with they refrain from vaginal examination and having a smear test. Moreover, the access to health care facilities, the cost, quality and continuity of the service, the knowledge, skill and manner of the personnel providing service affect the use of Pap smear test (Twinn and Cheng, 2000, Twinn, 2001).

For these reasons, it can be recommended that;

- For women to receive continuous and regular consultancy services, Pap smear test should be integrated in routine services of all health care units because it is important in terms of sexual and reproductive health.

- The studies which can determine the factors affecting women's receiving sexual and reproductive health services should be done.

- The studies which can enable to determine the factors affecting women's having a Pap smear test should be done.

- The certificate programs which can authorize midwives to perform Pap smear tests should be initialized in addition that women are informed by midwives about cervical cancer risk factors, prevention from and early diagnosis of the disease.

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