

The Effect of Education on Women's Practice Based on the Health Belief Model About Pap Smear Test

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ABSTRACT

Introduction: Cervical cancer is the most common gynecological cancer in Iran. The single most effective tool in reducing death due to cervical cancer is the use of pap smear as a screening tool. Therefore, the aim of this study was to determine the effectiveness of education based on Health Belief Model about giving pap smear in women.

Methods: This quasi-experimental study was performed on 70 women who referred to two health center in Kouhdasht (Lorestan-Iran). The samples were randomly divided in two groups (35 in intervention group and 35 in control group). The data were collected by a validated and reliable questionnaire. Interventions were run based on Health Belief Model during three sessions only for intervention group. Each educational session was for 45–60 min. The independent *t*-test and paired *t*-test were used to analyze data. A two-tailed *P* value lower than 0.05 was considered statistically significant.

Result: According to results, the mean scores of knowledge were significantly different between two groups after intervention ($P < 0.001$). The mean scores of the model variables (perceived susceptibility and severity, perceived benefits, and barriers) had no significant difference in the two groups before intervention, but after intervention had significant difference between the two groups ($P < 0.001$).

Conclusion: Designing and executing health education programs based on health belief model can promote the practice of women regarding to pap smear tests.

Keywords: Health belief model, pap smear test, woman

INTRODUCTION

Cervical cancer is one of the most common forms of carcinoma among women worldwide, and 80% of these cases occurring in developing and undeveloped countries.^[1] Cervical cancer is largely preventable by effective screening programs.

The single most effective tool in reducing death due to cervical cancer is the use of pap smear as a screening tool.^[2] Regular

screening with the Papanicolaou (Pap) test may reduce cervical cancer mortality by as much as 98%.^[3,4]

Although other studies of Asian women found that lack of knowledge about cancer risk factors resulted in failure to get pap smears.^[5] In other hand, some of the other research found that sociocultural barriers such as embarrassment for pelvic examination and individuals' beliefs about the causes and significance of cervical cancer may lead to lack of using pap smear test or not.^[5-7]

Cervical cancer is the most common gynecological cancer in Iran,^[8] where various methods of screening, diagnosis, and treatment have been reported.^[9,10] However, since there is no lucid system to document the data on cancers, there are no clear reports of incidence and prevalence of cervical cancer in Iran.

Although cervical cancer is of high concern in Iran, and the level of screening test is unacceptable, few studies have been carried out to determine why women do not refer to participate in pap smear test, and education is efficient to persuade Iranian women to participate in this test.

One of the behavioral models can describe this matter is Health Belief Model.

This model, which emerged in the late 1950s, was used as an exploratory model to assess why people did not use preventive health services and eventually to understand why people use or fail to use health services.^[11] HBM consists of various constructs including perceived susceptibility, severity, barriers, and benefits, cues to action, and health action.^[11]

Many researchers now employ this model to guide the development of health interventions with the aim of changing behaviors,^[12] and effectiveness of this model has approved in many research.^[13,14] Shojaeezadeh *et al.* performed a quasi-experimental study in hamadian women which revealed that health education based on HBM can enhance women's knowledge of cervical cancer, change their health beliefs, and improve their behaviors (giving pap smear test).^[15] Therefore, the aim of this study was to determine the effectiveness of education using Health Belief Model on practice of women regarding pap smear in Kouhdasht (Lorestan-Iran), 2010–2011.

METHODS

This is a quasi-experimental study, performed on 70 women who referred to two health center in Kouhdasht (Lorestan- Iran).

Inclusion criteria of married women who never had a pap test and women who could not understand the questions were excluded from study. The samples were randomly divided in two groups (35 in intervention group and 35 in control group). There was no difference between the two groups in age, job, and education level. A self-administered questionnaire was designed by the researchers. The questionnaire was divided into four sections: demographic data (3 questions), knowledge (21 questions), HBM model constructs (57 questions) including 15 questions on perceived susceptibility, perceived severity, perceived benefits, each part (5 questions), perceived barriers (8 questions), cues to action (3 questions), and practice (1 question). Likert scoring method was used to assess the answers as follows: (certainly agree = 4, agree = 3, no idea = 2, disagree = 1, and certainly disagree = 0) and the score range for every section was 0 to 100.

For knowledge section, one score was given to each correct answer. The score for wrong answers was zero. Finally, practice and behavior of participants were assessed by yes and no question.

We allocated score 1 and 0 to yes and no answers about practice, respectively.

The reliability of questionnaire was determined by Cronbach's alpha, which was in the range of 0.60–0.83.

The questionnaires were distributed in two groups one week before the intervention and one month after the intervention. Interventions were run based on Health Belief Model during three sessions in health center only for intervention group. In first session, health educator informed them about cervical cancer and causes of this cancer and tried to promote perceived susceptibility and severity in women by showing cancer patients film. In second session, health educators and midwifery specialist conducted group discussion about the benefit and barriers to give pap smear test, also we used film about pap smear steps to decrease women's fear about test. Finally, specialist informed their family as their mothers and husbands about the necessity of having pap smear test for women. Women in both groups were intimated with detail of the study

and were asked to read and sign a consent form.

Each educational session lasted 45–60 min. Statistical analysis was performed using SPSS (version 18). Comparison between two groups was done by independent *t*-test. Paired *t*-test analysis was used for comparison in one group before and after intervention. A two-tailed *P* value lower than 0.05 was considered statistically significant.

RESULTS

A total of 70 married women entered the study. The mean and standard deviation of participants age was 31.64 ± 7.5 years (range, 19–49). The education level of 35.7% was diploma or precollege degree, 21.4% went to guidance school, 7% just went to primary school, and a small portion (2.9%) were illiterates. Majority of the participants (94.3%) were housewives.

There was no significant difference between age ($P = 0.197$), education level ($P = 0.581$), and job ($P = 0.483$) in two groups before intervention.

The mean scores of knowledge in intervention group before and after intervention were 49.76 ± 16.83 , 93.06 ± 5.92 , respectively. There was significant difference between knowledge in intervention group before and after intervention ($P < 0.001$). While in the control group has seen a decline in knowledge score after intervention.

As presented in Table 1, there was a significant difference between the mean scores of all of the constructs of HBM in intervention group after intervention compared to the before intervention ($P < 0.001$). However, there was no significant

difference between the constructs of HBM in control group after intervention compared to the baseline values ($P > 0.05$).

About practice, from 35 participants in intervention group, 34 (97.14%) of them have done pap smear test, but in control group only 1 (2.86%) of them has done test after intervention.

In control group, 10 (28.57%), 20 (57.14%), 5 (14.29%) of women known health staff, family member specially spouse are most important cues to action before intervention, respectively, but in intervention group 15 (42.86%) of women known health staff, 11 (31.43%) family member, and 9 (25.71%) friend as cues to action before intervention but these percents had changed after intervention.

DISCUSSION

The mean score of knowledge before the intervention in both groups was indicative of the low individual's knowledge of pap smear and cervical cancer. Other studies confirm this matter.^[14,16-18]

Considering to the impact of knowledge on practice, lack of knowledge about benefits and the purpose of the pap smear can be known as the reason for poor practice of pap smear. Consistent with our study findings, Hazavehei and colleagues have also known the lack of knowledge as one of the reasons of not doing the test.^[14] After educational intervention, the level of knowledge improved significantly that is emphasized on the impact of the education on knowledge. Our study findings confirmed by other similar studies in our country.^[14,19] Park study has also confirmed the

Table 1: Mean \pm SD of scores of constructs of Health belief model in women before and after intervention

Constructs of health belief model	Groups	Time		P-value
		Before intervention	1 month after intervention	
		Mean \pm SD	Mean \pm SD	
Perceived Susceptibility	Intervention	70.00 \pm 15.12	81.90 \pm 8.45	0.001
	Control	68.00 \pm 15.76	64.00 \pm 14.66	0.056
Perceived Severity	Intervention	60.38 \pm 13.97	82.47 \pm 7.51	0.001
	Control	59.80 \pm 13.40	63.42 \pm 15.81	0.056
Perceived Benefits	Intervention	82.26 \pm 12.93	90.33 \pm 6.85	0.001
	Control	83.42 \pm 9.05	82.95 \pm 10.45	0.585
Perceived Barrier	Intervention	70.83 \pm 12.27	92.26 \pm 10.86	0.001
	Control	75.17 \pm 15.43	75.53 \pm 15.99	0.465

impact of educational intervention on increasing women's knowledge and participation in cervical cancer screening program.^[20]

Following the intervention, the mean score of perceived susceptibility has been increased in the intervention group, but we are facing a decrease in the perceived susceptibility in control group. This significant difference indicates that educational intervention on the basis of Health Belief Model causing women to be awarded of being susceptible to cervical cancer. Significant increase in perceived susceptibility also emphasized by Hazavehei, Yakhfroosha, and Shojaeezadeh studies.^[14,15,19]

In contrast with our findings in park and colleagues study, the perceived susceptibility in both intervention and control groups did not have any effect on participating in cervical cancer screening program. They considered insufficient intervention time for changing the attitudes to be the reason.^[20]

With regards to perceived severity, the mean scores increased in intervention group following education program. That is, educational intervention based on HBM increased perceived severity regarding cervical cancer, which is similar with the result of other studies.^[15,21]

Based on our study findings, perceived benefits in both groups were desirable before the intervention. This showed that women in both groups were aware of the resulted benefits from doing pap smear. These findings were also proved by other studies.^[14,17] The emphasis on perceived benefits has been emphasized in another study for women persuasion to do the test.^[20-23]

According to the findings, difference between intervention and control groups about perceived barriers was not significant before the intervention, but educational intervention increased perceived barriers in intervention group. These findings were supported by Mc Farland and colleagues study who stated that the women, who had more barrier perception, had less performance regarding doing pap smear test during past 5 years.^[18] Psychological barrier like fear and embarrassment have been the most important barriers in women in lee study.^[22] It may refer to effectiveness of educational intervention based on the Health Belief Model that has caused the individuals in the intervention group to overcome to barriers. In the other performed studies based on the model, the education has been able to reduce the barrier on performing the health activities.^[24,25]

In relation to cues to action in the intervention group, 42.86% have chosen the health staff as the performance guide which has been increased to 57.14% after education. This is similar with the results of Enjzab and colleague study.^[26] In Akbari study women who have done the pap smear test regularly have considered the health care providers encouragements as the most important cues to action.^[21] In the present study, majority of participants (97.4%) in intervention group have done the test after intervention and the only one person avoided doing the test because of financial ability to pay the cost. This indicates that financial support and providing free or low cost services can improve health behavior of women regarding doing pap test. Also, in control group, after the intervention, one person (2.85%) has done the test due to the sensitivity resulted from answering the questionnaire. This study reveals the considerable increase in intervention group practice as a result of educational intervention, which were also proved in other studies.^[27-30] As general, the results of the study imply that education based on Health Belief Model lead to giving pap smear test in women. By considering the benefit of giving pap smear as a useful screening tools, educational intervention based on Health Belief Model is recommended in health centers. The study was limited to women who referred to the health centers and had a limited number of participants too. Further research must have participants from different groups of women, increasing the number of participants would also allow for a more robust evaluation and analysis. This study had pre- and postintervention measurements at two times, which showed only the short-term effects of the intervention.

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