T M U

Use of the Health Education Campaign (HEC) in the Field of Breast Cancer Screening in the North of Iran

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ABSTRACT

Aims Breast cancer is the most common cancer in women.The Health Education Campaign (HEC) is an important educational strategy for breast cancer screening. The aim of this study was to investigate the effect of the (HEC) based training on the knowledge, attitudes, and practices of women, regarding breast cancer screening methods.
Materials & Methods This was a pre- and post-quasi-experimental study conducted among 200 women over 20 years in Mazandaran Province. A self-made 34-item questionnaire was used to collect the data. A pretest was performed before the educational intervention and a posttest was conducted 12 weeks after the intervention. The data were analyzed by logistic regression, Pearson correlation coefficient, and one way ANOVA, using SPSS 22.
Findings The mean age of the women was 35.16 years. Based on paired t-test, the difference in the mean scores of knowledge and attitudes regarding screening methods in the women was significant (p≤0.0001) before and after the intervention. Also, based on the macnemar test, the difference between the early detection of breast self-examination (BSE) and clinical breast examination (CBE) was significant in the women studied before and after the educational intervention.
Conclusion According to the results of the study, the intervention had been able to change the knowledge, attitudes, and behaviors of women regarding breast cancer and early detection methods.

Keywords Health Education Campaign; Breast Cancer; Screening

CITATION LINKS

[1] Breast cancer in Iran: Need for greater women awareness of warning signs and effective screening methods [2] Health beliefs about mammography and clinical breast examination among female healthcare providers in Tabriz health centers [3] Proapoptotic PUMA targets stem-like breast cancer cells to suppress metastasis [4] Breast cancer status in Iran: Statistical analysis of 3010 cases between 1998 and 2014 [5] Cancer registry in Iran: A brief overview [6] Knowledge and source of information about early detection techniques of breast cancer among women in Iran: a systematic review [7] Cancer incidence and mortality in Iran [8] Geographic distribution of breast cancer incidence in Iran [9] Factors associated with breast self-examination among Malaysian women teachers [10] Predictors of adherence to clinical breast examination and mammography screening among Malaysian women [11] The role of clinical breast examination and breast self-examination [12] Awareness and breast cancer risk factors: Perception and screening practices among females in a tertiary institution in Southwest Nigeria [13] Knowledge, attitude and practice of women in Ardabil about breast self- examination, 2000 [14] Knowledge, attitude, and practice on breast cancer screening methods among women in the North of Iran [15] Sociocultural factors associated with breast self-examination among Iranian women [16] What social media offers to health professionals and citizens [17] Breast self-examination: Defining a cohort still in need [18] Mammography screening participation: Effects of a media campaign targeting Italian-speaking women [19] Evaluating a campaign to detect early stage breast tumors in the United States [20] Evaluation of a cancer awareness campaign: Experience with a selected population in Karachi [21] Educational intervention to improve breast health knowledge among women in Jordan [22] Breast cancer awareness campaign: Will it make a difference? [23] Evaluating the effects of a youth health media campaign [24] Original: Anti-smoking media campaign messages: Theory and practice [25] Mass media campaign improves cervical screening across all socio-economic groups

Introduction

Breast cancer is the most common cancer in women after lung cancer and the most common cause of cancer death in women [1, 2]. In 2018, it is estimated that 627,000 women died from breast cancer – that is approximately 15% of all cancer deaths among women [3]. Breast cancer is still ranked as the first malignancy among Iranian women. Its peak incidence age in Iranian women is in the 4th and 5th decades of life, which is a decade younger than the global peak age of incidence [4]. Furthermore, this deadly disease can be cured by early detection and timely treatment [5] and the incidence and mortality rates can be reduced through prevention and screening [6].

The most efficient method for the early detection of this disease is screening. Therefore, if breast cancer is early detected, more than 90% of the patients will be treated [7]. The statistics of breast cancer according to gender in Mazandaran province for female breast cancer (BC) and male (BC) are 56% and 28.4%, respectively [8].

Screening methods include breast self-examination (BSE), clinical breast examination (CBE) by a physician or other medical staff, and mammography [1]. The breast cancer prevention and screening programs are very powerful tools for the early detection of this cancer. However, they are not yet taken seriously by most doctors as well as by women in most medical centers in developing countries [9].

Various studies have shown BSE and mammography rates of 4% to 20% and 3% to 6.5% for Iran, respectively [1, 6, 10]. They have also reported rates of 24% and 17% for Nigeria and Malaysia, respectively [11, 12]. However, Iranian women's knowledge of cancer screening methods is relatively low [13-15].

The Health Education Campaign (HEC) is an important educational strategy for health promotion and disease prevention. The HEC is a set of coordinated communication and educational activities, using a combination of multiple and diverse communication channels in order to transmit specific messages to a specific population within certain and limited period in line with the objectives of the program. Over the past years, HEC has been used to influence various health behaviors in a large proportion of the population. Using HEC has been considered in many countries since early in 1990 in order to encourage women to perform Pap smear and mammography. Research has shown that using HEC in short-term screening programs has led to increases in this behavior [16, 17].

Since the use of screening methods plays a very important role in the prevention and control of breast cancer in women, the aim of this study was to investigate the effect of the HEC-based training on the knowledge, attitudes, and practices of women in Rostamkola, one of the northern cities of Iran, regarding breast cancer screening methods.

Materials and Methods

This was a pre- and post-quasi-experimental study conducted among women over 20 years in the Rostamkola, Mazandaran Province. This city has a population of 12,000 and a sample size of 500 people was determined based on the sample size formula. Furthermore, stratified random sampling was used. Sampling started after 10 block numbers from the central square of Rostamkola in 4 directions of east, west, south, and north in equal numbers and in each separate direction, and a sample of 125 people was determined.

In this study, the inclusion criteria included women over 20 and residing in the district holding the HEC, who were willing to participate in the study. In addition, the exclusion criteria included women not residing in the district, women with breast cancer, and those having mental and psychological conditions.

Our educational intervention under HEC was the "early detection of breast cancer in women". The direct target group consisted of women over 20 in Rostamkala and the indirect target group consisted of health volunteers, reference groups, and governmental, social, and non-governmental organizations and institutions. Educational goals were developed in terms of cognitive, attitudinal, and behavioral learning objectives tailored to the target group.

Educational content provided on the basis of program objectives included: identification of risk factors for breast cancer in women, methods of early detection of breast cancer, method of BSE, frequency of BSE, CBE by a physician or other medical staff, mammography in women over 20 years, adoption of the "breast cancer can be prevented" and "breast cancer can be detected very early by screening methods" attitudes, correct method of BSE, visits to trained medical staff or relevant medical professionals for a CBE, and visits for mammography.

The underlying messages of the HEC for the target group were "it is very easy to prevent breast cancer" and "let's prevent breast cancer by regular screening." The timetable on the executive activities of the HEC was arranged, depending on the type of activity, the target group, location, runtime, and the program executive manager.

Communication channels used in HEC included 4 channels as follow:

A) Interpersonal channels: the target group was notified weekly through face-to-face training by various educators (health center personnel, doctors, paramedics, and health volunteers) at the level of health centers, private clinics, drugstores,

neighborhoods, public places, shopping malls, and markets.

B) Group channels: in this communication channel, 20 group discussion sessions for different groups (including female teachers, female employees, and elected women from the neighborhoods of Rostamkala), 2 workshop sessions for health volunteers, and 10 general meetings in large mosques, and conference halls in the city were held by skilled and trained educators.

C) Social and organizational channels: in this communication channel, separate briefing and coordination sessions for social and organizational groups (including health volunteers, officials and members of neighborhood women's Basij resistance force bases, members of city council and municipal administration, clerics and trustees, managers of municipal organizations, and offices) were held to attract the support and participation of social groups and organizations.

D) Mass communication channels: in this channel, given the resources and facilities available, educational packages such as pamphlets and brochures were used for distribution in the community and among target group women.

The HEC runtime was 7 days. A pretest was performed before the educational intervention and a posttest was conducted 12 weeks after the intervention.

The questionnaire was used to collect data. This questionnaire consisted of 34 questions, which included 8 questions on demographic characteristics, 10 questions on the assessment of disease knowledge and breast cancer screening methods, 10 questions on the assessment of women's attitudes toward breast cancer screening methods, and 6 questions on the assessment of breast cancer screening practices in the women studied.

For the assessment of knowledge, the questions in the questionnaire were set to "Yes" (1), "No" (-1), and "I don't know" (0). For the assessment of attitudes, a 5-point Likert rating scale was used and rated as "strongly agree" (5), "agree" (4), "neither agree nor disagree" (3), "disagree" (2) and "strongly disagree" (1), depending on the type of direct and reverse questions. As for the assessment of breast cancer screening practices (including BSE, CBE by a doctor and other medical staff, and mammography), options "Yes" (1) and "No" (0) were considered. Validity of the questionnaire was determined, using content validity method and experts' opinion. In addition, its reliability was determined, using Cronbach's alpha test. Cronbach's alpha values of 0.78, 0.81, and 0.83 were calculated for knowledge, attitudes, and practices, respectively. Data collection was carried out by interviews with the selected households of eligible women.

SPSS 22 software and descriptive statistics methods were used for data analysis, and logistic regression, Pearson correlation coefficient, and one way ANOVA were used to investigate the effect of quantitative variables.

Findings

The mean age of the participants was 35.16 years, 85.7% of whom were married and 7.4% were single. The majority of women were housewives (79.9%) and 11.2% were employed. The mean age of the onset of the menstrual period was 13.75±1.48, the mean age of the first pregnancy was 20.97±4.7, and the mean age of menopause was 48.51±5.3.

The education level of 13.9% of the women was up to third grade, 55.4% had a diploma and post-diploma, and 13.5% had a degree regarded higher than a post-diploma. 9.6% had a history of benign breast diseases. Moreover, 8% of the women had a history of breast cancer in first-degree relatives and 12% of the women had a history of breast cancer in second-degree relatives.

Based on the findings, the mean score of women's knowledge of the disease and breast cancer screening methods was 5.46±3 with a 95% confidence interval (2.8, 6.46) before the educational intervention and 11.44±3.49 with a 95% confidence interval (7.14, 95.93) after the intervention.

Moreover, the mean score of women's attitudes toward the disease and breast cancer screening methods was 37.12±5.54 with a 95% confidence interval (31.42, 58.66) before the educational intervention and 54.37±7.53 with a 95% confidence interval (46.04, 61.9) after the intervention (Table 1).

Based on paired t-test, the difference in the mean scores of knowledge and attitudes regarding screening methods in the women studied was significant ($p \leq 0.0001$) before and after the intervention (Table 2).

Based on the macnemar test, the difference between the early detection of BSE and CBE in the participants was significant before and after the educational intervention. However, the early detection of mammography in the participants increased after the educational intervention compared to pre-intervention, but the difference was not statistically significant.

Table 1) Comparison of mean scores of knowledge and attitudes toward screening methods before and after the educational intervention in the participants

Variable	Mean ± SE	p-value
Awareness		
Before Intervention	5.46±0.133	0.0001
After Intervention	11.44±0.156	
Attitude		
Before Intervention	37.12±0.247	0.0001
After Intervention	54.37±0.336	

Table 2) Comparison of early detection of breast self-examination (BSE), clinical breast examination (CBE), and mammography before and after the educational intervention in the participants

Variable	Before Intervention Number (%)	After Intervention Number (%)	p-value
History of self-examination	268(53.4)	315(62.3)	0.001
Regular performance (monthly)	64(13.1)	95(18.3)	0.001
Irregular performance (occasional)	204(40.3)	220(44)	0.001
History of clinical examination	161(32.1)	185(37)	0.01
Less than 3 months	31(6.2)	54(10.8)	0.001
History of mammography	84(16.7)	9(18)	n.s
Less than 3 months	15(3)	21(4.3)	n.s

n.s: Non-significant

Discussion

The aim of this study was to determine the effectiveness of the HEC based educational intervention in the knowledge, attitudes, and behaviors of women regarding breast cancer screening. According to the results of the study, the intervention had been able to change the knowledge, attitudes, and behaviors of women regarding breast cancer and early detection methods.

In the present study, the mean scores of the knowledge and attitudes of the subjects were significant before and after the intervention. In terms of the practices, the difference between using BSE screening method and CBE was significant before and after the intervention, but there was no significant statistical difference in the use of mammography. In the study by Page et al., using the mass media, including radio and newspapers, to increase the focus on mammography screening was not significant [18]. The insignificance of performing mammography in this study can be attributed to the limited mammography centers in the district holding HEC and the failure to predict this program in the family physician program and some structural problems and resource constraints, etc.

In the present study, the HEC had resulted in increased knowledge, changed attitudes, and increased preventive behaviors 3 months after the educational intervention.

Different findings have been reported on the outcomes and effectiveness of the educational intervention in various studies. According to a study conducted by Catalano et al. [19], Ali et al. [20], the HECs had a positive role in breast cancer awareness. In a study in Jordan, the HEC was found to be effective in increasing awareness of breast cancer,

but it was not significant for preventive behaviors and use of early detection methods [21]. In contrast, in a study by Abdelhadi et al., the HEC led to increased knowledge and acceptance of self-examination and mammography [22].

Moreover, in a study carried out by Beaudoin, there was little evidence of the outcomes of the HEC [23]. In the study by Cohen et al., although there had been an overwhelming publicity and announcement, it was apparently used mostly to inform and not to worry and affect them [24].

Since in HEC it had been attempted to use local communication channels to send messages to all target groups, the use of BSE was expected to increase. However, performing a CBE required attending educational centers and offices, and visiting trained gynecologists, female general surgeons, and midwives. This conclusion suggests that the implementation of training programs based on specific strategies can increase the screening behaviors of women.

Conclusion

Today, HEC is widely used in various countries. Despite the fact that the results of the use of mass media strategy and various communication channels indicate that HEC has contributed to increasing public awareness, preventing unhealthy behaviors, and promoting healthy behaviors [25], its inclusive and continuous effectiveness is facing serious challenges. Therefore, policy makers and planners of health education programs need to consider those challenges before, during, and after the implementation of educational programs.

References

1- Montazeri A, Vahdaninia M, Harirchi I, Harirchi AM, Sajadian A, Khaleghi F, et al. Breast cancer in Iran: Need for greater women awareness of warning signs and effective screening methods. Asia Pac Fam Med. 2008;7(1):6.
2- Mokhtari L, Baradaran Rezaee M, Mohammadpour Asl A, Mousavi SM. Health beliefs about mammography and clinical breast examination among female healthcare providers in Tabriz health centers. Iran J Nurs. 2011;24(71):63-73. [Persian]

3- Sun Q, Lesperance J, Wettersten H, Luterstein E, DeRose YS, Welm A, et al. Proapoptotic PUMA targets stem-like breast cancer cells to suppress metastasis. J Clin Investig. 2018;128(1):531-44.

4- Akbari ME, Sayad S, Sayad S, Khayamzadeh M, Shojaee L, Shormeji Z, et al. Breast cancer status in Iran: Statistical analysis of 3010 cases between 1998 and 2014. Int J Breast Cancer. 2017;2017:2481021.

5- Etemadi A, Sadjadi A, Semnani S, Nouraie SM, Khademi H, Bahadori M. Cancer registry in Iran: A brief overview. Arch Iran Med. 2008;11(5):577-80.

6- Bouya S, Balouchi A, Ahmadidarehsima S, Badakhsh M. Knowledge and source of information about early detection techniques of breast cancer among women in Iran: a systematic review. J Cancer Prev. 2018;23 (1):51-60.

7- Mousavi SM, Gouya MM, Ramazani R, Davanlou M, Hajsadeghi N, Seddighi Z. Cancer incidence and mortality in Iran. Ann Oncol. 2009;20(3):556-63.

8- Khosravi Shadmani F, Mansori K, Khazaei S, Mansouri Hanis Sh, Khazaei S, Sani M, et al. Geographic distribution of breast cancer incidence in Iran. Biomed Res Ther. 2017;4(5):1295-304.

9- Parsa P, Kandiah M, Parsa N. Factors associated with breast self-examination among Malaysian women teachers. East Mediterr Health J. 2011;17(6):509-16.

10- Parsa P, Kandiah M. Predictors of adherence to clinical breast examination and mammography screening among Malaysian women. Asian Pac J Cancer Prev. 2010;11(3):681-8.

11- Miller AB, Baines CJ. The role of clinical breast examination and breast self-examination. Prev Med. 2011;53(3):118-20.

12- Olugbenga-Bello A, Oladele EA, Bello TO, Ojo JO, Oguntola AS. Awareness and breast cancer risk factors: Perception and screening practices among females in a tertiary institution in Southwest Nigeria. Niger Postgrad Med J. 2011;18(1):8-15.

13- Dadkhah B, Mohammadi MA. Knowledge, attitude and practice of women in Ardabil about breast self-examination, 2000. J Ardabil Univ Med Sci. 2002;2(3):14-20. [Persian]

14- Naghibi SA, Daryani S, Shojaizadeh D, Montazeri A. Knowledge, attitude, and practice on breast cancer screening methods among women in the North of Iran. Int J Humanit Cult Stud. 2016 Apr:2550-60.

15- Naghibi SA, Shojaizadeh D, Montazeri A, Yazdani Cherati J. Sociocultural factors associated with breast self-examination among Iranian women. Acta Med Iran. 2015;53(1):62-8.

16- Mc Nab C. What social media offers to health professionals and citizens. Bull World Health Organ. 2009;87(8):566.

17- Wilke LG, Broadwater G, Rabiner S, Owens E, Yoon S, Ghate S, et al. Breast self-examination: Defining a cohort still in need. Am J Surg. 2009;198(4):575-9.

18- Page A, Morrell S, Tewson R, Taylor R, Brassil A. Mammography screening participation: Effects of a media campaign targeting Italian-speaking women. Aust N Z J Public Health. 2005;29(4):365-71.

19- Catalano R, Winett L, Wallack L, Satariano W. Evaluating a campaign to detect early stage breast tumors in the United States. Eur J Epidemiol. 2003;18(6):545-50.

20- Ali TS, Baig S. Evaluation of a cancer awareness campaign: Experience with a selected population in Karachi. Asian Pac J Cancer Prev. 2006;7(3):391-5.

21- Taha H, Halabi Y, Berggren V, Jaouni S, Nyström L, Al-Qutob R, et al. Educational intervention to improve breast health knowledge among women in Jordan. Asian Pac J Cancer Prev. 2010;11(5):1167-73.

22- Abdelhadi MS. Breast cancer awareness campaign: Will it make a difference?. J Family Community Med. 2006;13(3):115-8.

23- Beaudoin CE, Thorson E. Evaluating the effects of a youth health media campaign. J Health Commun. 2007;12(5):439-54.

24- Cohen EL, Shumate MD, Gold A. Original: Anti-smoking media campaign messages: Theory and practice. Health Commun. 2007;22(2):91-102.

25- Anderson JO, Mullins RM, Siahpush M, Spittal MJ, Wakefield M. Mass media campaign improves cervical screening across all socio-economic groups. Health Educ Res. 2009;24(5):867-75.