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## Comparison the Effects of Two Educational Methods on Knowledge, Attitude and Practices of Arak Physicians about Breast Cancer

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**Abstract:** Breast cancer is the most common and most preventable cancer in women and early detection has the important role in reducing its morbidity and mortality, so increase 95% survival time. The present study conducted to compare the effects of two educational methods on knowledge, attitude and practices of Arak physicians. An interventional study after randomized allocation of each 64 physician to any of two different educational methods (video and systematic review) used to compare knowledge; attitude and practices score variation about breast cancer screening skills. Data collection carried out with structured questionnaire and entered to SPSS software. Data analyzed by t-test, paired t-test and Man-Whitney test in significant level of 0.05. Mean of total score of knowledge, attitude and practices (KAP) showed a significant difference before and after training and the total score of KAP increase ( $p < 0.05$ ). But KAP score variation and their subscales were same in two groups and didn't show any significant difference ( $p > 0.05$ ). Although KAP in Arak physician is appropriate and any educational program increase their KAP level, but continuing and repetition of educational courses seems to be necessary.

**Key words:** Educational intervention, breast cancer, physicians, knowledge, attitude, practice

### INTRODUCTION

Cancer is the second leading cause of death in worldwide (Harirchi *et al.*, 2010) and the third cause of death after cardiovascular diseases and accidents and injuries in Iran (Mousavi *et al.*, 2009). Among cancers, breast cancer is the most common cancer among women in world (Rabia and Sebahat, 2008; Parkin *et al.*, 2005) and in Iran (Mousavi *et al.*, 2009; Sadjadi *et al.*, 2002). Since, involves 24.4% of all cancers and it is the most fatal form of malignancy among 35 to 50 years old women accounting for 16-18% of all cancer deaths (Avci and Gozum, 2009; Nejla and Ozge, 2008; McCready *et al.*, 2005). Crude incidence rate of breast cancer is 17.81 and an Age Standardized Rate (ASR) is 23.65 per 100,000 in the year of 2006, according to a report of the Ministry of Health and Medical Education in Iran (Harirchi *et al.*, 2010).

Early detection of breast cancer plays an important role in reducing its morbidity and mortality. Theoretically, a 95% survival rate could be achieved if this cancer was diagnosed at an early stage (Tavafian *et al.*, 2009). Breast Self Examination (BSE), mammography and clinical breast examination are the secondary preventive tools that considered as screening methods for early detection

breast cancer (Tavafian *et al.*, 2009; Dundar *et al.*, 2006; Avci, 2008), these methods cause 24% mortality reduction in women aged 40 and older (Nejla and Ozge, 2008).

There was some studies about Knowledge, Attitude and Practice (KAP) about breast cancer, that their result showed knowledge of women about breast cancer, screening and treatment is moderate but attitude and practices is low (Dundar *et al.*, 2006; Secginli and Nahcivan, 2006; Simi *et al.*, 2009), also attitude and practice in health workers (physicians, nurses and midwives) were not adequate although their knowledge were high (Nejla and Ozge, 2008; Ibrahim and Odusanya, 2009). But interventional studies can increase in knowledge, belief and perceptions of women and nurses (Rabia and Sebahat, 2008; Avci and Gozum, 2009). Therefore it is hoped, to improve the overall survival rates by early detection of disease with educational efforts and programs for health workers such as physicians to increase the numbers diagnosed at an early stage.

With considering to high incidence and mortality rate of BC in developing countries (Shibuya *et al.*, 2002) such as Iran (Saidi *et al.*, 1995), epidemiologic evaluations and educational programs for people and work staffs is necessary. Because physicians must be diagnosed and treatment the breast cancer cases and increase of

knowledge in this group is necessary rather other groups of health workers. Based on these documents current study designed and conducted to evaluate Physician KAP about breast cancer and comparison of two educational methods in increasing of Physician KAP in Arak, Iran.

**MATERIALS AND METHODS**

The current study is an interventional study that assesses KAP of Arak city physicians in Iran about screening, diagnosis and treatment of breast cancer, in the baseline and after an educational Intervention. Employed physicians were the study population involves 140 physicians that have been sampled by random sampling method after a pilot study from all 262 physicians. Then the study purposes have described and after taking the informed consent, 128 physicians remained in the sample.

Randomization carried out based on KAP scores in the baseline. After collection data in the baseline and calculating the KAP scores for participants, half of physicians that acquired score above of mean and half of them that acquired score bellow of mean assign to one intervention group by chance and so for other group. So participants divided in two groups by stratified random allocation and each group contains 64 physicians.

Based on randomization, one group assign to video training intervention and other group assign to systematic review article training intervention. Educational content of two groups was similar and include sections about histology, anatomy, epidemiology, examination and history, screening methods and diagnosis of breast cancer, but educational procedure was different. In the first group, a 30 min video and a power point that contain

educational sections used and for second group training fulfill by a systematic review article that printed and give to them. In addition to video or article that gives to any participants, a questionnaire and a guideline about using the tools and answering to questions give too.

Data gathering conducted by a structured questionnaire in before and after of educational intervention. In questionnaire designing first prepared a question bank and test in pilot study. Questions entered to the main questionnaire that have reliability coefficient higher than 0.8. Final questionnaire involve 12 demographic questions, 10 knowledge questions, 20 attitude questions and 8 practice questions. The Final questionnaire acquired reliability coefficient higher than 0.8 in all dimensions. In the current study had taken informed consent from all participants and Arak medical University ethical committee approved this research.

After data gathering and entering to SPSS software version 16, data checked for any outlier and incorrect value. In the data analysis has been used from independent t-test, paired t-test, Man Whitney and levene tests. Significant level considered as 0.05.

**RESULTS**

From all 128 participated physicians in the study 68% (87 physicians) were male and 84.4% were married. Most of participants (60.9%) were in 20-30 years old range and 68.8% employed in private clinic. 74.2% reported that educated about cancer case finding in student period. Also, 27.3% reported that don't self-confident in diagnosis of breast cancer.

Result of statistical test according to Table 1 showed that total score mean of attitude, practice and their subscales and also total score mean of knowledge have

**Table 1: Comparison mean score of KAP and their subsets before and after of training**

Parameters	Before		After		p-value
	Mean	CI	Mean	CI	
<b>Knowledge</b>					
Semiology (from 2)	1.60	1.48-1.72	1.83	1.75-1.90	0.001
Epidemiology (from 3)	2.29	2.15-2.43	2.14	2.03-2.25	0.089
Screening and diagnosis (from 5)	1.71	1.55-1.87	2.55	2.38-2.72	<0.001
Total score (from 10)	5.60	5.34-5.84	6.74	6.54-6.95	<0.001
<b>Attitude</b>					
Cancer patients (from 10)	7.26	6.97-7.54	8.21	7.54-8.88	<0.001
Clinical exams (from 30)	21.13	20.37-21.89	22.33	21.29-23.37	<0.001
Screening (from 60)	35.61	34.61-36.62	37.53	36.63-38.44	<0.001
Total score (from 100)	64.00	62.41-65.61	68.08	66.29-69.86	<0.001
<b>Practice</b>					
Taking history (from 200)	109.39	102.4-116.7	120.20	112.2-128.2	0.113
Clinical exams (from 200)	76.86	68.8-84.9	121.50	113.9-129.4	<0.001
Screening (from 400)	236.76	22.3-251.2	292.80	277.5-308	<0.001
Diagnosis (from 200)	109.39	101.8-117	120.20	112.2-128.2	0.113
Total score (from 1000)	423.08	399.4-446.5	546.00	524-568.2	<0.001

Table 2: Comparison of mean KAP scores and their subsets after of training between two groups

Parameters	Article group		Video group		p-value
	Mean changes	CI	Mean changes	CI	
<b>Knowledge</b>					
Semiology	0.238	0.037-0.439	0.215	0.065-0.370	0.732
Epidemiology	-0.0269	-0.514- -0.0254	-0.031	-0.278-0.217	0.242
Screening and diagnosis	0.778	0.487-1.07	0.829	0.582-1.20	0.466
Total score	1.063	0.667-1.46	1.21	0.837-1.59	0.407
<b>Attitude</b>					
Cancer patients	1.048	-0.33-2.43	0.861	0.326-1.39	0.212
Clinical exams	0.603	-0.391-1.58	1.68	0.018-3.34	0.705
Screening	1.59	0.343-2.83	2.25	0.907-3.59	0.248
Total score	3.24	0.942-5.53	4.89	2.28-7.49	0.526
<b>Practice</b>					
Taking history	7.27	-7.07- 20.61	14.21	0.829-27.6	0.480
Clinical exams	41.32	28.55-54.1	48.14	34.1-62.2	0.475
Screening	56.50	31.3-81.7	55.60	32.3-78.8	0.975
Diagnosis	7.27	-7.1-21.6	14.21	0.829-27.6	0.480
Total score	118.35	81.5-155.2	127.70	93.6-161.7	0.711

significant difference before and after of training and the total score of KAP increase ( $p < 0.05$ ). But knowledge in epidemiology, practice in history and diagnosis of breast cancer didn't show any significant difference before and after intervention ( $p > 0.05$ ).

Table 2 showed that KAP score variation and their subscales were same in two groups and didn't show any significant difference after educational intervention ( $p > 0.05$ ).

### DISCUSSION

Life time risk of breast cancer equal to one per nine women and one million new cases of the disease occurs annually in the world. Breast cancer is the most common cancer among women and included 18% of all female cancers. Since, the natural history of disease is largely unknown and is difficult to prevent from disease (McCready *et al.*, 2005) a lot of emphasis has been to the diagnosis and treatment of breast cancer, but this requires high level knowledge of health workers and people, especially in women.

Several studies in women indicated low performance for their diagnosis through breast self-examination and mammography. Secginli and Nahcivan (2006) and Marinho *et al.* (2003) studies showed that knowledge and practice of women referred to health centers in Brazil was insufficient but there was a good attitude towards breast cancer screening. Since, the knowledge causes better attitude and practice, most studies have been considered increasing the awareness as one of the solutions.

The mean total score of knowledge, attitude and practice before the intervention in the baseline measurement was above of average. In a study on the Nigerian female doctors the knowledge was adequate (74% of total score) and 86% of them have good belief to

diagnosis (Ibrahim and Odusanya, 2009). Another study in Colorado Health care staffs indicated high level of knowledge about instruction of diagnosis and treatment of breast cancer (Bakemeier *et al.*, 1995). These results are same to present study, but a study on health personnel in Tehran showed that low levels of knowledge and need for excess training (Haji-Mahmoodi *et al.*, 2002) that conflict to our results. Since, the health workers such as nurses, modifies and physicians are in direct contact to patients in all studies in these people emphases for increasing knowledge by educational interventions.

The mean total score of knowledge, attitude and performance before and after the intervention showed significant difference, so that the total score in all three scopes of knowledge, attitude and practice has been increased. Other studies have shown rising in knowledge, attitude and practice after educational and training interventions too. A study on the Egyptian students about risk factors for breast cancer showed significant increase in knowledge, attitude and practice (Fatohy *et al.*, 1998). In Ngelangel *et al.* (1997) study, the mean changes of knowledge, attitude and practice before and after training intervention was significant too. These finding is same to my results in current study.

Changes in KAP and their subsets showed no statistically significant difference in two groups that indicating equality of two educational methods in improving physician's KAP. In a study with the aim of the training effect in two individual and group educations on female employees showed that attitude and belief of them in individual education have significant differences before and after intervention, but knowledge on the subjects in any two technique was not shown significant difference (Brailey, 1986). These results show that probably any educational intervention caused increase in KAP score and it is a educational benefits of these studies.

In a Avci and Gozum (2009) study in Turkey in order to compare two educational videos and attend educational class on teachers didn't observe significant differences between two study groups, but increase in attitude score was similar in two groups. This finding is consistent with the results of this study. As well as their knowledge before and after the intervention was showed a significant difference, but was not found significant difference in practice of video group. The results of other studies were considered that education intervention is effective in increasing knowledge and performance of the subjects (Leight *et al.*, 2000; Zhu *et al.*, 2002; Lu, 1998).

Knowledge and awareness about breast cancer is varying in different population groups and communities around the world. Studies on Women indicating an acceptable level of knowledge among them in some population (Ibrahim and Odusanya, 2009; Grunfeld *et al.*, 2002; McMenamin *et al.*, 2005) but reports of other elsewhere, especially in developing countries like Nigeria and Iran indicate insufficient knowledge about the disease (Haji-Mahmoodi *et al.*, 2002; Okobia *et al.*, 2006). Two studies in Saudi women showed low knowledge about risk factors, screening and breast self examination (Jahan *et al.*, 2006; Dandash and Mohaimeed, 2007). Also, specified that in communities where awareness of the disease is high, patients diagnose in the early stages of the disease (Ibrahim and Odusanya, 2009).

One of the goals of reducing burden of cancer depends on the public health education and implementation of effective screening programs in primary care services. In breast cancer having a good understanding of behaviors associated with breast cancer screening and its risk factors is crucial. So, for health workers, especially nurses that have the most contact with the patients and physicians that responsible for diagnose and screening it is essential to aware about the disease and factors affecting breast cancer screening behaviors (Secginli and Nahcivan, 2006).

It would be considered that although educational intervention increase knowledge, attitude and practice but based the results of other studies, such interventions is necessary to remember the compulsion of screening and early diagnosis and in order to study subjects including medical health workers doing screening procedure correctly (Avci and Gozum, 2009; Leight *et al.*, 2000; Zhu *et al.*, 2002).

Authors suggested that further studies conducted about other educational methods with a longer time duration gap between intervention and final measurement about physician's skills.

## CONCLUSION

Although, based on the results of this study KAP scores in the Arak physicians were in acceptable range at the baseline and two educational methods were improved the KAP score. Also since medical educational programs in any form can lead to increased knowledge, better understanding and better performance for the diagnosis and treatment of disease but of course continuous and regular training and retraining to upgrade skills and take up more medical knowledge is necessary.

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## REFERENCES

- Avci, I.A. and S. Gozum, 2009. Comparison of two different educational methods on teachers knowledge, beliefs and behaviors regarding breast cancer screening. *Eur. J. Oncol. Nurs.*, 13: 94-101.
- Avci, I.A., 2008. Factors associated with breast self-examination practices and beliefs in female workers at a Muslim community. *Eur. J. Oncol. Nurs.*, 12: 127-133.
- Bakemeier, R.F., L.U. Krebs, J.R. Murphy, Z. Shen and T. Ryals, 1995. Attitudes of Colorado health professionals toward breast and cervical cancer screening in Hispanic women. *J. Natl. Cancer Inst. Monogr.*, 18: 95-100.
- Brailey, L.J., 1986. Effects of health teaching in the work place on womens knowledge, beliefs and practices regarding breast self-examination. *Res. Nurs Health*, 9: 223-231.
- Dandash, K.H. and A. Mohaimeed, 2007. Knowledge, attitudes and practices surrounding breast cancer and screening in female teachers of Buraidah, Saudi Arabia. *Int. J. Health Sci.*, 1: 75-88.
- Dundar, P.E., D. Ozmen, B. Ozturk, G. Haspolat, F. Akyildiz, S. Coban and G. Cakiroglu, 2006. The knowledge and attitudes of breast self-examination and mammography in a group of women in a rural area in western Turkey. *BMC Cancer*, 24: 6-43.
- Fatohy, I.M., G.M. Mounir, N.H. Mahdy and B.M. El-Deghedhi, 1998. Improving students knowledge, attitude and practice towards cancer prevention through a health education program. Part II. *J. Egypt Public Health Assoc.*, 73: 755-785.

- Grunfeld, E.A., A.J. Ramirez, M.S. Hunter and M.A. Richards, 2002. Womens knowledge and beliefs regarding breast cancer. *Br. J. Cancer*, 86: 1373-1378.
- Haji-Mahmoodi, M., A. Montazeri, S. Jarvandi, M. Ebrahimi, S. Haghghat and I. Harirchi, 2002. Breast self-examination: Knowledge, attitudes and practices among female health care workers in Tehran, Iran. *Breast J.*, 8: 222-225.
- Harirchi, I., S. Kolahdoozan, M. Karbakhsh, N. Chegini and S.M. Mohseni *et al.*, 2010. Twenty years of breast cancer in Iran: Downstaging without a formal screening program. *Ann. Oncol.*
- Ibrahim, N.A. and O.O. Odusanya, 2009. Knowledge of risk factors, beliefs and practices of female healthcare professionals towards breast cancer in a tertiary institution in Lagos, Nigeria. *BMC Cancer*, 9: 76-76.
- Jahan, S., A.M. Al-Saigul and M.H. Abdelgadir, 2006. Breast cancer. Knowledge, attitudes and practices of breast self examination among women in Qassim region of Saudi Arabia. *Saudi Med. J.*, 27: 1737-1741.
- Leight, S.B., P. Deiriggi, D. Hursh, D. Miller and V. Leight, 2000. The effect of structured training on breast self-examination search behaviors as measured using biomedical instrumentation. *Nursing Res.*, 49: 283-289.
- Lu, Z.J., 1998. Effectiveness of breast self-examination nursing interventions for Taiwanese community target groups. *Oncol. Nursing Forum*, 25: 1693-1701.
- Marinho, L.A., M.S. Costa-Gurgel, J.G. Cecatti and M.J. Osis, 2003. Knowledge, attitude and practice of breast self-examination in health centers. *Rev. Saude Publica*, 37: 576-582.
- McCready, T., D. Littlewood and J. Jenkinson, 2005. Breast self-examination and breast awareness: A literature review. *J. Clin. Nurs.*, 14: 570-578.
- McMenamin, M., H. Barry, A.M. Lennon, H. Purcell and M. Baum *et al.*, 2005. A survey of breast cancer awareness and knowledge in a Western population: Lots of light but little illumination. *Eur. J. Cancer*, 41: 393-397.
- Mousavi, S.M., M.M. Gouya, R. Ramazani, M. Davanlou, N. Hajsadeghi and Z. Seddighi, 2009. Cancer incidence and mortality in Iran. *Ann. Oncol.*, 20: 556-563.
- Nejla, C. and U. Ozge, 2008. Health beliefs and breast cancer screening behaviors among female health workers in Turkey. *Eur. J. Oncol. Nursing*, 12: 148-156.
- Ngelangel, C.A., M.L. Ordoneo, J. Lu-lim, R.A. Fernandez, 1997. Knowledge, attitudes and practices on breast cancer and breast examination of nurses and midwives in Metro Manila. *Philipp J. Intern. Med.*, 35: 15-17.
- Okobia, M.N., C.H. Bunker, F.E. Okonofua and U. Osime, 2006. Knowledge, attitude and practice of Nigerian women towards breast cancer: A cross-sectional study. *World J. Surg. Oncol.*, 4: 11-11.
- Parkin, D.M., F. Bray, J. Ferlay and P. Pisani, 2005. Global cancer statistics, 2002. *CA Cancer J. Clin.*, 55: 74-108.
- Rabia, H. and G. Sebahat, 2008. The effect of training on the knowledge levels and beliefs regarding breast self-examination on women attending a public education centre. *Eur. J. Oncol. Nursing*, 12: 58-64.
- Sadjadi, A., M. Nouraie, M.A. Mohagheghi, A. Mousavi-Jarrahi, R. Malekezadeh and D.M. Parkin, 2002. Cancer occurrence in Iran in 2002, an international perspective. *Asian Pacific J. Cancer Prev.*, 6: 359-363.
- Saidi, F., S. Farahmand and R. Badr, 1995. Age of onset of breast cancer among Iranian women. *Iran J. Med. Sci.*, 20: 5-7.
- Secginli, S. and N.O. Naheivan, 2006. Factors associated with breast cancer screening behaviours in a sample of Turkish women: A questionnaire survey. *Int. J. Nursing Stud.*, 43: 161-171.
- Shibuya, K., C.D. Mathers, C. Boschi-Pinto, A.D. Lopez and C.J. Murray, 2002. Global and regional estimates of cancer mortality and incidence by site: II. Results for the global burden of disease 2000. *BMC Cancer*, 2: 37-37.
- Simi, A., M. Yadollahie and F. Habibzadeh, 2009. Knowledge and attitudes of breast self examination in a group of women in Shiraz, Southern Iran. *Postgrad Med. J.*, 85: 283-287.
- Tavafian, S.S., L. Hasani, T. Aghamolaei, S. Zare and D. Gregory, 2009. Prediction of breast self-examination in a sample of Iranian women: An application of the Health Belief Model. *BMC Womens Health*, 9: 37-37.
- Zhu, K., S. Hunter, L.J. Bernard, K. Payne-Wilks and C.L. Roland *et al.*, 2002. An intervention study on screening for breast cancer among single African-American women aged 65 and older. *Preventive Med.*, 34: 536-545.