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# The effect of self-care training programs on lifestyle and breast self-examination of immigrant Afghan women

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## Abstract:

**BACKGROUND:** Breast cancer is the most prevalent cancer and a major cause of mortality among women. Breast self-examination (BSE) is a key technique for early diagnosis of breast cancer, which, along with lifestyle changes, can alleviate the risk of mortality. This study aimed to examine the effect of self-care training programs on lifestyle change and BSE of immigrant Afghan women residing in Iran.

**MATERIALS AND METHODS:** In this quasi-experimental study, 140 immigrant Afghan women visiting health-care centers in Shiraz (Iran) were selected via convenience sampling during 2019–2020. The data were collected using a lifestyle questionnaire, a demographic information checklist, and a BSE checklist. Following the pretest, the experimental group received three sessions of self-care training and took the posttest 2 months after the intervention. The control group did not receive any intervention, but took the same posttest 2 months after the pretest. Data analysis was performed using paired and independent *t*-test and Chi-squared test in Statistical Package for the Social Sciences (SPSS) 22.

**RESULTS:** The post-intervention level of knowledge and performance of the experimental group significantly increased in terms of a healthy lifestyle ( $P < 0.001$ ) and performance of BSE ( $P < 0.001$ ) compared to the control group. The intervention also had a significant positive effect ( $P < 0.000$ ) on all dimensions of lifestyle.

**CONCLUSION:** Self-care training for lifestyle and BSE can promote the prevention and early diagnosis of breast cancer in immigrant Afghan women who have limited access to health care.

## Keywords:

Breast Self-examination, immigrants, lifestyle, self-care, women

## Introduction

Breast cancer is the most prevalent cancer and a major cause of mortality in women.<sup>[1]</sup> On average, 38 million people die annually worldwide due to chronic noncommunicable diseases, 20% of which is accounted for by breast cancer in women.<sup>[2]</sup> Although this disease is prevalent worldwide, its incidence, mortality, and survival rates vary in different regions due

to factors such as demographic structures, lifestyles, genetic and environmental factors.<sup>[1]</sup>

In Afghanistan, cancer care is still at a stage that needs further research and attention. Despite the development of medical services in recent years and the improvement of primary health care, which was 9% in 2002 and almost 60% in 2012, the health system has not yet been successful in treating noncommunicable diseases such as cancer.<sup>[3]</sup>

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Immigration is a major determinant of public health and social development.<sup>[1]</sup> Immigrants often face numerous sociocultural and economic challenges that prevent them from receiving medical care, thereby negatively impacting their health.<sup>[4]</sup> Based on a study on Afghan immigrants residing in Pakistan, the most prevalent cancers among Afghan women were breast cancer (20.8%) followed by cancers of the esophagus, skin, cervix, the lymphatic system, and ovaries.<sup>[5]</sup>

The high and rising incidence of this disease and the problems associated with its treatment in advanced stages impose a heavy burden on health-care systems. Therefore, these systems have provided several methods to empower women in performing breast cancer screening to promote early diagnosis.<sup>[6]</sup> Self-care, which refers to measures taken by a person to maintain and promote his/her health, has attracted considerable attention as a health-promoting behavior. The most important health-promoting behaviors include taking responsibility for one's health, exercise, nutrition, social support, stress control, and spiritual growth.<sup>[7]</sup>

Lifestyle is often used to describe people's choices according to their consumption pattern. These choices in the field of health include a healthy diet, abstinence from smoking and alcohol, and other health-related habits.<sup>[8]</sup> Diet is one of the most modifiable and important risk factors that can affect the risk and mortality of breast cancer.<sup>[9]</sup> Lifestyle changes related to nutrition and exercise can improve both the physical and mental health of cancer patients, which is why lifestyle-related programs must be precise, advanced, and practical.<sup>[10]</sup>

The relationship between early diagnosis and disease outcomes has been specified in the literature. Evidence suggests that standard screening techniques, for example, mammography and breast self-examination (BSE), can mitigate breast cancer mortality.<sup>[11,12]</sup> A US study on the behaviors and knowledge of immigrant Afghan women about breast cancer screening showed that only a small percentage of them were familiar with early diagnostic methods. Numerous health risks and problems threatened this population due to their little access to medical services, language-related problems, patriarchal society, social exclusion, and religious and cultural barriers.<sup>[12]</sup>

Also, in a study conducted on medical staff in Afghanistan, five issues related to cancer care were prioritized: 1. lack of preventive facilities to change people's lifestyles to prevent cancer; 2. lack of sufficient information about cancer care; 3. lack of comprehensive cancer diagnosis centers; 4. lack of adequate treatment centers for cancer patients; and 5. lack of experienced health-care providers for prevention, early diagnosis, treatment, and palliative care.<sup>[3]</sup>

So, it seems that strategies are needed to improve the lifestyle of these people. Self-care education not only provides an opportunity to increase people's knowledge, but also changes their attitudes and behaviors.<sup>[13]</sup> Shiraz (Iran) has a large population of immigrant Afghan women who are vulnerable and in need of information due to their little awareness and knowledge about lifestyle and early detection of breast cancer. This study, therefore, aimed to examine the effect of self-care training programs on lifestyle change and BSE of immigrant Afghan women residing in Shiraz.

## Materials and Methods

### Study design and setting

This quasi-experimental study was conducted in Shiraz during 2019–2020. The researcher referred to the health centers that had the most Afghan clients. To prevent any communication between the experimental and control groups, among the clinics with more Afghan clients, one clinic was randomly selected as the experimental group and two clinics were chosen as the control group.

### Study participants and sampling

Eligible women were selected by convenience sampling for the study. A total of 140 Afghan women (70 women in the experimental group and 70 women in the control group) participated in this study based on the estimated sample size. The inclusion criteria were willingness to participate in the research, no history of breast cancer, age >20 years, and at least 5 years of residence in Iran. Participants who did not wish to continue participation or attend the training sessions were excluded.

The sample size was estimated at 63 per group based on previous studies<sup>[11]</sup> with the following assumptions: an error of 5%, a power of 80%, an effect size of 50%, and

a 1:1 ratio, using the formula  $n = \frac{1+r}{r} s^2 (Z_{1-\alpha/2} + Z_{1-\beta})^2$ .

Due to the longitudinal nature of the study and repeated measurements, and by using the formula  $n' = n \times \frac{1}{1-p}$  and assuming 10% attrition, the final sample size was estimated at 70 per group.

### Data collection tool and technique

Data collection tools included a demographic questionnaire, a lifestyle questionnaire (LSQ), and a BSE checklist. The LSQ consisted of 70 items that explored 10 factors (physical health, exercise and fitness, weight management and nutrition, disease prevention, mental health, spiritual health, social health, avoidance of drugs, narcotics, and alcohol, accident prevention, and environmental health). In a study conducted on the teachers of Department of Education in Isfahan (Iran)

in 2008–2009, Lali *et al.*<sup>[14]</sup> developed and validated the LSQ and showed its adequate reliability and validity for lifestyle measurement. The BSE checklist was developed by the researcher based on the latest guidelines for prevention, early diagnosis, and screening of breast cancer, and was reviewed and approved by experts. It comprised five items and pictures for clarification and examined all five steps of BSE. The items were scored from 1 to 3 (1 = performs incorrectly, 2 = performs relatively well, 3 = performs correctly).

All participants first signed an informed consent and then completed all three questionnaires. The questionnaires and checklist assessed the participants' level of knowledge and awareness. In the next stage, the experimental group entered three training sessions. The researcher administered the programs to the experimental group in three 45-min sessions over 3 days through lectures, practice, and films. In the first session, the researcher introduced women to information about risk factors, signs and symptoms, preventive measures, and methods of diagnosis and treatment of breast cancer. The purpose of the second session was to familiarize the participants with normal lifestyle factors such as nutrition, exercise, sleep, coping with stress, social support, and the harms of substance use. In the third session, along with showing the video and slide, the researcher tried to teach the participants the correct BSE.

The control group received routine training of health-care providers. Two months after the training sessions, both groups were asked again to fill out the questionnaires and checklist, and the post-intervention results were compared with the pre-intervention results [Figure 1].

To describe the data, descriptive statistics including mean and standard deviation for quantitative variables and number (%) for qualitative variables were used. The mean of the parameters before and after as well as the difference between the changes were tested by independent *t*-test. Paired *t*-test was used to compare the mean of the parameters in each of the two groups. Chi-squared test was used to compare the variables and qualitative characteristics between the two groups.

### Ethical consideration

Permission to conduct this study was obtained from the Ethics Committee of Shiraz University of Medical Sciences with 17332-08-01-97 code. To maintain confidentiality and privacy, participants were assured that their information was confidential and their names or addresses will not be disclosed in the research. Written consent was obtained from all participants. To adhere to the ethical considerations, the training content was also provided to the control group after the study.

## Results

The data of all 140 participants were entered in the analysis. The demographic characteristics of the two groups are summarized in Table 1. Based on the independent *t*-test, the two groups did not significantly differ in terms of age ( $P < 0.05$ ).

As for the demographic characteristics, most women in the experimental group were illiterate (40%) or had completed elementary school (40%), while the majority of women in the control group (48.6%) had completed elementary school; still, the two groups did not significantly differ in terms of education level based

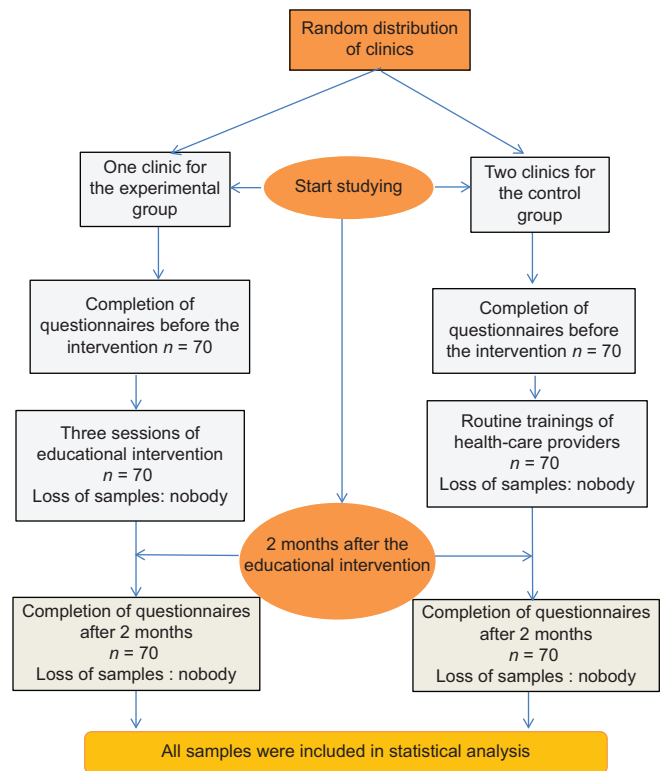


Figure 1: Consort

Table 1: Frequency distribution of education and marital status of participants

| Variable             | Levels         | Experimental group |         | Control group |         |
|----------------------|----------------|--------------------|---------|---------------|---------|
|                      |                | <i>n</i>           | Percent | <i>n</i>      | Percent |
| Age (mean±SD), years |                | 35.42±10.39        |         | 30.51±9.23    |         |
| Education            |                |                    |         |               |         |
|                      | Illiterate     | 28                 | 40      | 31            | 44.3    |
|                      | Primary school | 28                 | 40      | 34            | 48.6    |
|                      | Middle school  | 6                  | 8.6     | 3             | 4.3     |
|                      | High school    | 8                  | 11.4    | 2             | 2.9     |
| Marital status       |                |                    |         |               |         |
|                      | Single         | 7                  | 10      | 1             | 1.4     |
|                      | Married        | 63                 | 90      | 69            | 98.6    |

on the Chi-squared test ( $P = 0.149$ ). Most women in the experimental (90%) and control (98.6%) groups were married, and the Chi-squared test showed no significant difference between the two groups in terms of marital status ( $P = 0.063$ ) [Table 1].

The results obtained on comparing the lifestyle knowledge scores in each group and across the groups pre- and post-intervention are summarized in Table 2. The paired and independent  $t$ -tests showed no significant difference between the two groups pre-intervention ( $P = 0.81$ ); post-intervention, however, there was a significant difference between the two groups ( $P = 0.000$ ), demonstrating the effect of the intervention on the level of lifestyle knowledge. The difference in the mean changes between the two groups was also significant ( $P = 0.000$ ). In the within-group analysis, the difference in the pre- and posttest scores was significant in both groups. There was a rise in the lifestyle knowledge score of the experimental group and a decrease in the lifestyle knowledge score of the control group [Table 2].

The results of comparing lifestyle changes in the two groups are summarized in Table 3. This table shows the mean changes of each dimension in both groups. These changes in lifestyle dimensions were compared across the groups using an independent  $t$ -test. The differences were significant ( $P < 0.05$ ) in all dimensions, indicating the effect of the intervention on all aspects of lifestyles [Table 3].

The results obtained on comparing the scores on BSE in each group and between the two groups before and after the intervention are summarized in Table 4. Based on the paired and independent  $t$ -tests, there was no significant difference between the two groups before the intervention ( $P = 0.61$ ); after the intervention, however, the groups significantly differed ( $P = 0.000$ ), displaying the effect of the intervention on the BSE scores. The difference in the mean changes was significant in the two groups ( $P = 0.000$ ). In the within-group analysis, the difference between pre- and posttest scores was significant only in the experimental group ( $P < 0.000$ ). These results revealed the effect of the intervention on performing BSE [Table 4].

### Discussion

The findings indicated a significant increase in the mean posttest score of knowledge about lifestyle and BSE in the experimental group compared to the pretest and the control group. In other words, the training improved the knowledge of Afghan women about lifestyle change and BSE.

Yong *et al.*<sup>[15]</sup> (2018) in Malaysia, Alsarairah *et al.*<sup>[16]</sup> (2017) in Jordan, and Moustafa *et al.*<sup>[17]</sup> (2015) in Egypt obtained similar results about the effect of training programs on the knowledge and performance of BSE. Based on the literature, women’s failure to visit health-care centers or to diagnose breast cancer in its early stages is due to their low level of knowledge about breast cancer; insufficient awareness about the importance of self-examination

**Table 2: Comparison of the mean score of lifestyle knowledge between the experimental group and the control group**

| Variable                          | Time                  | Groups              |                | Statistical index | P     |
|-----------------------------------|-----------------------|---------------------|----------------|-------------------|-------|
|                                   |                       | Experimental (n=70) | Control (n=70) |                   |       |
| Mean score of lifestyle knowledge | Before intervention   | 141.48±19           | 140.72±18.44   | 0.239             | 0.81  |
|                                   | After intervention    | 152.28±15.15        | 138.5±16.38    | 5.16              | 0.000 |
|                                   | Changes over 2 months | -10.8±10.06         | 2.22±5.7       | 9.42              | 0.000 |
|                                   | Statistical index     | -8.97               | 3.268          |                   |       |
|                                   | P                     | >0.001              | <0.002         |                   |       |

**Table 3: Comparison of changes in the dimension of lifestyle in the intervention and the control groups**

| Changes in the dimension of lifestyle | Experimental group (n=70) | Control group (n=70) | Changes resulting from the comparison of the two groups | Statistical index | P     |
|---------------------------------------|---------------------------|----------------------|---|-------------------|-------|
| Physical health                       | 1/82±2/049                | 0/214±1/85           | 1/61±0/33   | 4/884             | 0/000 |
| Exercise and health                   | 1/6±3/01                  | -0/028±1/76          | 1/63±0/41   | 3/915             | 0/000 |
| Weight control and nutrition          | 1/38±2/26                 | -0/58±1/74           | 1/97±0/34   | 5/782             | 0/000 |
| Prevention of diseases                | 0/91±1/47                 | -0/21±1/45           | 1/12±0/24   | 4/564             | 0/000 |
| Mental health                         | 1/44±1/94                 | 0/25±1/3             | 1/18±0/27   | 4/235             | 0/000 |
| Spiritual health                      | 0/67±1/6                  | -0/55±1/38           | 1/22±0/25   | 4/844             | 0/000 |
| Social health                         | 1/1±2/28                  | -0/08±1/66           | 1/18±0/33   | 3/508             | 0/001 |
| Avoid drugs and narcotics             | 0/34±0/75                 | -0/3±1/37            | 0/64±0/18   | 3/422             | 0/001 |
| Accident prevention                   | 0/32±1/16                 | -1/02±1/46           | 1/35±0/22   | 6/071             | 0/000 |
| Environmental health                  | 1/17±2/44                 | 0/1±1/57             | 1/07±0/34   | 3/081             | 0/007 |



**Table 4: Comparison of the mean score of breast self-examination between the experimental group and the control group**

| Variable                              | Time                  | Groups              |                | Statistical index | P     |
|---------------------------------------|-----------------------|---------------------|----------------|-------------------|-------|
|                                       |                       | Experimental (n=70) | Control (n=70) |                   |       |
| Mean score of breast self-examination | Before intervention   | 6.34±1.77           | 6.48±1.557     | -0.5              | 0.61  |
|                                       | After intervention    | 11.47±3.22          | 6.64±1.73      | 11.019            | 0.000 |
|                                       | Changes over 2 months | -5.128±3.63         | -0.15±1.35     | 10.72             | 0.000 |
|                                       | Statistical index     | -11.81              | -0.96          |                   |       |
|                                       | P                     | <0.000              | <0.336         |                   |       |

or knowledge of how to perform it, or disregard for it; social poverty; the late onset of breast cancer signs and symptoms; and careless examination by specialists.<sup>[1,12]</sup> In a study by Khiyali *et al.*<sup>[18]</sup> conducted in Fasa (Iran), training programs based on the Health Belief Model effectively promoted BSE behavior.<sup>[18]</sup> It is, therefore, essential to offer BSE training programs as a secondary breast cancer prevention method to all young women.

In terms of lifestyle, similar to the present study, Đorđić *et al.*,<sup>[19]</sup> in their study conducted in Serbia, showed that training programs based on healthy lifestyle promotion guidelines increased vegetable intake and promoted adults' attention to food labels. Their results suggested that brief and focused training could direct general populations' healthy lifestyle toward health promotion.

In line with the results of this research, Shabgard *et al.*<sup>[20]</sup> and Sadat Hosseini *et al.*,<sup>[21]</sup> in their studies conducted in Rasht and Neishabour (Iran), respectively, also reported that training programs were an effective way to enhance awareness, lifestyle, and cancer prevention behaviors of women. Empowering people through self-care can reduce medical referrals. In addition, it saves time and money and helps improve treatment outcomes.

Herein, the intervention positively affected all aspects of lifestyle, for example, physical health, exercise and well-being, weight and nutrition management, disease prevention, mental health, spiritual health, social health, avoidance of drugs, narcotics, and alcohol, accident prevention, and environmental health. Finocchiaro *et al.*<sup>[22]</sup> and Braakhuis *et al.*<sup>[23]</sup> reported in their studies conducted in Italy and New Zealand, respectively, that training programs reduced body mass index (BMI) and waist circumference and promoted a healthy lifestyle in breast cancer patients by altering the quality of their diet and limiting a sedentary lifestyle. These findings are consistent with those of this study, as both programs had a positive effect on diet.

The findings are also in line with those of the study by Rygg *et al.*<sup>[24]</sup> conducted in Norway, according to which an engaging teaching method could encourage the participants to control their diet, exercise, and regulate their blood glucose level by learning what type of food to

eat. In fact, people gain the ability to take responsibility for their own health, and on the other hand, providing self-care information has increased the knowledge and confidence of participants in self-care training programs.

Today, a healthy lifestyle is an important factor in providing, maintaining, and promoting health.<sup>[25]</sup> Lifestyle modification has recently gained momentum as an appropriate and efficient strategy for achieving health and preventing diseases.<sup>[26]</sup>

A major strength of this intervention that can explain its impact is that the researcher and the participants spoke the same language and were from the same country, which allowed greater communication and active interaction and increased the participants' sense of peace and trust in one another and the instructor. Another strength of this study lies in providing the educational content and videos to the learners and reviewing the materials of previous sessions, which led to better and long-term learning.

### Limitation and Recommendation

One of the limitations of our study was the small number of training sessions because training must be continuous and regular to have a long-lasting impact on behavior and performance. Therefore, due to the limited time we had in conducting this study (student dissertation), it is suggested that future studies examine the impact of continuing education on breast cancer prevention measures in women.

Another limitation of the study was that we did not pursue long-term educational effects, and therefore, future studies should be performed to evaluate the effectiveness of the intervention over a long period of time.

### Conclusion

The results revealed that, compared to the control group, the experimental group's level of knowledge and performance after the self-care training significantly increased in 10 dimensions of a healthy lifestyle and BSE. Based on the literature, a small percentage of immigrant

Afghan women are familiar with early diagnostic methods. Religious beliefs and cultural attitudes and values, for example, observing hijab, being embarrassed by medical staff, not seeking early counseling, not touching one's body, gender, the position of Afghan women in the family, and their husbands' refusal to allow their wives to be examined by a male doctor, were barriers to breast cancer screening.<sup>[1,10]</sup> As such, an appropriate strategy to prevent and control cancer seems to be promoting the knowledge and changing the attitude of society, especially that of Afghan immigrants, about health-promoting behaviors.

### Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient has given her consent for her images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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### Conflicts of interest

There are no conflicts of interest.

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