Lifestyle in Iranian Patients with Breast Cancer

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ABSTRACT

Background: One of the most commonly diagnosed cancers is breast cancer that leads to mortality and morbidity among Iranian women. Behavioural risk factors, such as common lifestyle patterns are often associated with risk of breast cancer incidence.

Aim: This study aimed to investigate lifestyle of breast cancer patients admitted to Cancer Research Center of Mazandaran University of Medical Sciences.

Materials and Methods: This descriptive cross-sectional study was conducted using convenient sampling method. Sample size consisted of 150 cancer patients, and data collection tool included a researcher-made questionnaire on dimensions of lifestyle containing four dimensions of self-care, exercise and physical activity, diet and coping with stress. Maximum score in different dimensions, based on 100% of marks earned, was evaluated in three categories of undesirable, relatively desirable and desirable. Data were analysed with SPSS-19 software using descriptive statistics (relative and absolute frequencies, mean and standard deviation).

Results: In total of 150 women, the mean age of patients was 51.9 ± 1.04 (27-78). The majority of participants were married, housewives, with high school education. Among the four parts of healthy lifestyle, desirable level of physical activity and exercise had the least participants, and in the dimensions of physical activity and exercise, the lowest level related to walking, followed by daily exercise. Most of the participants had undesirable level of self-care and lowest frequency related to mammography after 40-year-old, followed by annual check-up and Pap-smear. With regard to nutrition, most of them were at desirable level.

Conclusion: The results indicated undesirable levels in two lifestyle dimensions (self-care and physical activity and exercise) in the majority of participants for a year before contracting breast cancer. Primary prevention programs should be implemented with a comprehensive approach, thus, effective strategies are required to modify lifestyle.

INTRODUCTION

One of the most commonly diagnosed cancers is breast cancer that leads to mortality and morbidity in women worldwide [1]. According to a report by the International Agency for Cancer Research of the World Health Organization (2012), next to lung cancer, the world's most commonly diagnosed cancer is breast cancer with estimated 1.7 million cases (11.9%), and compared to 2008, the prevalence and mortality of breast cancer increased 20% and 14%, respectively [2]. Although Iran is among the countries with the lowest prevalence of breast cancer in the world (25 in 100000), it causes morbidity and mortality among Iranian women [3]. According to the 2008 report by the International Cancer Research Agency, the standard age of breast cancer incidence was estimated at 18.4 years among Iranian women [4]. In Mazandaran province in 2006, breast cancer was considered the most common malignancy among women with 23.38% [5].

Global trends suggest that developing countries are rapidly advancing toward social, economic, and lifestyle changes, compatible with industrialized countries, which leads to increased burden of cancers associated with hormonal, reproductive and nutritional risk factors [6]. Furthermore, behavioural risk factors, such as conventional lifestyle patterns are often associated with risk of breast cancer [7]. Accordingly, Mc Cormack and Buftak anticipated the burden of global cancer between 13.3 million and 21.4 million in countries with low to moderate income during 2010 to 2030 only through changes in demographic factors. Risk factors associated with lifestyle in these countries are changing, which will affect the increasing prevalence. Breast cancer, especially internationally, will be associated with lower menarche age and reduced household numbers and with weight gain in postmenopausal years [8].

Independent effects of various lifestyle factors, such as dietary and physical activity patterns, and anthropometric characteristics, such as BMI, smoking and alcohol use on incidence of breast cancer have been reported in various studies [7]. Sedentary lifestyle, together with unhealthy diet, especially in the recent 20 years, has been associated with risk of obesity and weight gain [9]. Physical activity is associated with reduced risk of breast cancer through affecting weight gain and obesity, insulin resistance and chronic inflammation [10]. Mayor, in his study (2011) in Italy on the effect of lifestyle changes in reducing risk of breast cancer reported alcohol abstinence, physical activity (minimum 2 hours per week), and BMI<25, will completely reduce risk of breast cancer [11]. Therefore, women should be trained and encouraged to change their unhealthy lifestyles to reduce risk of breast cancer [12]. In Iran, diseases induced by lifestyle are considered main causes of death and disability [13]. Yet, only a few studies have been conducted in this area. Given increasing prevalence of breast cancer in Iran, and before any planning, it is necessary to study lifestyle and risk factors in these patients. Thus, this study aimed to investigate lifestyle of breast cancer patients admitted to Cancer Research Center of Mazandaran University of Medical Sciences, so that by obtaining data, practical strategies can be proposed to improve lifestyles to control the disease and its associated side-effects.

MATERIALS AND METHODS

This quantitative descriptive cross-sectional study was conducted from September 2013 to September 2014 using convenient sampling method according to study inclusion and exclusion criteria. Statistical population comprised cancer patients admitted to Cancer Research Center of Mazandaran University of Medical Sciences.The sample size was calculated 150 patients based on Poisson model-based sampling.

$$n \geq \frac{N\sigma^2}{N(\xi\mu)^2 + \sigma^2}$$

$N = 1000$

$\mu = 30$

$\sigma^2 = 30$

$\xi = 0.075$

After obtaining permission of the research center authorities and participants' written consent, sampling was carried out according to study inclusion criterion of less than one year since diagnosis of breast cancer and exclusion criteria of no chronic diseases and no other cancers. Data collection tool consisted of a researcher-made questionnaire, comprising two parts. The first part contained 21 items on demographic details, and the second part related to 4 dimensions of lifestyle, including self-care (8 items), exercise and physical activity (3 items), diet (14 items, and coping with stress (24 items). In the self-care dimension, maximum score is 12, evaluated according to three categories of undesirable (0-4), relatively desirable (5-8), and desirable (9-12). Similarly, in the physical activity and exercise dimension, maximum score is 12, evaluated according to three categories of undesirable (0-4), relatively desirable (5-8), and desirable (9-12). Maximum score in diet dimension is 57, evaluated in three categories of undesirable (8-24), relatively desirable (25-41), and desirable (42-57). Maximum score in coping with stress dimension is 120, evaluated in three categories of undesirable (24-56), relatively desirable (57-88), and desirable (89-120). It is noteworthy that the researcher opted lifestyle prior to breast cancer, so data were collected accordingly.

Qualitative content validity was used to validate the questionnaire. To this end, the questionnaire was prepared according to review of literature and relevant articles, and approved by 5 faculty members. Cronbach's alpha was used to determine its reliability, which was found more than 0.7. Collected data were analysed with SPSS-19 software using descriptive statistics, chi-square test and Pearson and Spearman correlation coefficients.

ETHICAL CONSIDERATIONS

Arrangements were made with Cancer Research Center and written consents were obtained from participants. Participants were assured of confidentiality. Results were made available to participants and officials.

RESULTS

A total of 150 women with maximum one year since diagnosis of breast cancer took part in this study. The mean age of patients was 51.9 ± 1.04 (27-78). The majority of participants were married. Most participants were financially dependent. Participants' demographic parameters were summarized in [Table/Fig-1].

The majority of participants had no family history of breast cancer (82%). Most of them had breast cancer in their left side (50.7%) and 2.7% had the cancer in both sides. The highest metastasis was bone-related (5.3%) and the lowest was brain-related (0.7%). Most of participants did not use neurology medication (82.7%). Half of the participants used withdrawal contraceptive methods (50%). Most of participants had no weight change (58%) but 14.7% had weight loss following diagnosis of breast cancer. Result shown that most participants were undergoing chemotherapy (62%) and 32.7% were in follow-up process. Participant's breast cancer status and cure state parameters were summarized in [Table/Fig-2]. In the self-care dimension, most of participants were at relatively desirable level. Distribution of self-care parameters were summarized in [Table/Fig-3].

Results shown that in physical activity and exercise, most of patients were in undesirable level. [Table/Fig-4] shows distribution of physical activity and exercise parameters.

Age	Mean± SD (Rang) 51.9 ± 1.04 (27-78)	Absolute Frequency	Relative Frequency
Marital status	Single	7	4.7%
	Married	127	84.6%
	Widowed	15	10%
	Divorced	1	0.7%
Education	Illiterate	40	26.7%
	High school dropout	52	34.7%
	High school diploma	40	26.7%
	Higher diploma and degree	18	11/9%
	Masters and above	0	0
Occupation	Housewife	118	78.7%
	Manual worker	2	1.3%
	Employee	23	15.3%
	Other	7	4.7%
Place of residence	Singular	1	0.7%
	Dorm	1	0.7%
	With family (husband and children)	137	91.3%
	With family (father)	9	6%
	With husband's family	2	1.3%
Economic status	Dependent income	31	20.7%
	Independent income	119	79.3%

[Table/Fig-1]: Absolute and relative frequency distribution of participants' demographic parameters

Cure status	No / (%)
Chemotherapy	93(62%)
Radiation Therapy	4(2.6%)
Hormone therapy	4(2.6%)
Follow up	49(32.7%)
Breast cancer status	
Under treatment	145(96.7%)
Be treatment	5(3.3%)

[Table/Fig-2]: Participants breast cancer and cure state parameters

Self-care	Yes	No	Total
Annual Pap-smear	53 35.3%	97 64.7%	150 100%
Mammography beyond 40 years of age	46 30.7%	104 69.3%	150 100%
Personal hygiene	148 98.7%	2 1.3%	150 100%
Daily brushing teeth	121 80.7%	29 19.3%	150 100%
Using prescribed medication	146 97.3%	4 2.7%	150 100%
Complying with Doctor's recommendations	148 98.7%	2 1.3%	150 100%
Annual health check-up	49 32.6%	101 67.4%	150 100%

[Table/Fig-3]: Distribution of self-care parameters of participants

In the dimension of diet, most of participants were at desirable level. Most participants used liquid oil; fish 1-2 per month, fried their meals and had the average three meals of breakfast, lunch and dinner. Red meat was used 1-2 times per week by most participants (64%). Mean water intake in most participants (33.7%) was 5-6 glasses. Most of participants had 4-5 cups of tea per day (56%), and most of did not use ready-made meals or fast foods. Normal and abnormal consumption of participants' dietary parameters were summarized in [Table/Fig-5].

In managing stress dimension, most of participants were at desirable. [Table/Fig-6] shows stress management parameters of participants. Overall results of participant's lifestyle parameters were summarized in [Table/Fig-7].

Physical activity and exercise	Yes	No	Total
Exercise (2.5 hours per week)	47 31.4%	103 68.6%	150 100%
Walking (2 hours per week)	43 28.6%	107 71.4%	150 100%

[Table/Fig-4]: Distribution of participants' physical and exercise parameters

Consumption of food	Normal consumption	Abnormal consumption
Bread and cereals	48%	52%
Rice	39.3%	60.7%
Milk and dairy products	42%	58%
Meat and variety of nuts and pulses	60%	40%
Fruits and vegetables	64%	36%

[Table/Fig-5]: Normal and abnormal consumption of participants' dietary parameters.

Stress management parameters	Often No / %
Adequate sleep	89 (59.3%)
Time management	101(67.3%)
Social activity	75(50%)
Emotional and intimate family relationships	128(85.3%)
Good sexual relationship	115(76.7%)
Close friends	70(46.7%)
Appropriate fun activities	58(38.7%)
Positive attitude toward life	97(64.7%)
Using meditation techniques	63(42%)
Resorting to religious activities and participation in practices	144(96%)

[Table/Fig-6]: Stress management parameters of participants

Lifestyle parameters	Desirable	Relatively desirable	Undesirable	Total
Self-care	48(32%)	76(50.7%)	26(17.3%)	150(100%)
Physical activity and exercise	39(26%)	77(51.3%)	34(22.7%)	150(100%)
Diet	111(74%)	38(25.3%)	2(1.3%)	150(100%)
Stress management	139(92.7%)	11(7.3%)	0(0%)	150(100%)

[Table/Fig-7]: Absolute and relative frequency distribution of participants' lifestyle parameters

DISCUSSION

This study aimed to assess the effect of four variables (self-care, physical activity, diet, and stress management) as components of healthy lifestyle on risk of breast cancer. Study results shown that physical activity level was the lowest among 4 components of healthy lifestyle. In relation to relative frequency of physical activity parameters, results shown that the lowest level related to walking, followed by exercise, even though physical activity reduces risk of breast cancer through affecting obesity and weight gain, insulin resistance and chronic inflammation [10]. In his study, Friedenreich reports that moderate to intense physical activity is associated with reduced risk of breast cancer [14]. In a similar study Carmichael et al., reported that out of 373 breast cancer patients, 24% exercised more than 30 minutes in 5 day-week according to recommendations [15]. So, primary prevention programs should be implemented with a comprehensive approach and effective strategies are required to enhance lifestyle.

Results shown desirable level of self-care in 32% of participants, and the lowest frequency relates to mammography after the age of 40 years, followed by annual check-up, and Pap-smear. In other cases relating to self-care such as personal hygiene, following doctor's recommendations, using prescribed medications, brushing teeth daily, the majority of participants

were at a desirable level. In this study, only 30.7% of participants performed mammography as a self-care parameter, while studies have emphasized benefits of mammography as breast cancer screening, and Canadian Medical Association reported (2011) that greater reduction in mortality rates of women aged 50-75 years has been achieved through mammography screening [16]. Moreover, according to a study by Kalager et al., in Norway, performing screening with mammography in women aged 50-69 years is associated with reduced mortality rate, and mammography screening alone reduced mortality rate by about a third [17]. So, primary prevention programs should be implemented with a comprehensive approach and effective strategies are required to enhance lifestyle.

In relation to diet as a dimension of lifestyle, this study shown that most of participants were at desirable level. In a study in America, a relationship was found between high carbohydrate diet and increased pre and postmenopausal risk of breast cancer [18]. Case-control studies also found a relationship between Western dietary pattern and risk of breast cancer [19,20]. Western dietary pattern shows a different profile in Western societies, and includes high meat consumption, dairy and fatty products, high carbohydrate foods (sweet drinks, fries, processed meats, and patisseries), alcohol, and varied amounts of fruits and vegetables [7]. In the present study, the majority of participants used frying method for cooking, and most used liquid oils and consumption of fish was relatively low Razmara et al., in a study in Iran reported a relationship between consumption of different varieties of fish, tinned fish, and shrimps and reduced incidence of breast cancer [21]. Also, in this study, consumption of chicken in most participants was 2-3 times per week, and red meat in most participants 1-2 times per week. Various studies have reported that complying with Mediterranean diet reduces risk of breast cancer, especially in postmenopausal women [22]. This diet contains high amounts of vegetables, fruits and nuts, and unsaturated fat, and minimum consumption of processed foods, dairy products, and meats, and high consumption of fish, and no alcohol [23]. In the present study, participants did not follow any particular dietary pattern, but generally, the majority had desirable level of diet, and only a few participants had undesirable diets.

In relation to stress management dimension most participants had high and desirable level of stress management. FarukTas shown that variety of stresses such as death, financial problems, lack of livelihood, involvement in conflicts and disease were higher in women, and 41% of breast cancer patients lived in stressful conditions prior to contracting breast cancer [24]. According to results obtained, it could be inferred that in a country such as Iran, with Islamic culture, resorting to religious practices, prayer, religious beliefs and resorting to Shia Imams, can be highly helpful in coping with stress.

CONCLUSION

The results indicated undesirable levels in two lifestyle dimensions (self-care and physical activity and exercise) in the majority of participants, since a year before contracting breast cancer. Given that healthy lifestyle has been known to reduce risk of breast cancer, primary prevention programs should be implemented with a comprehensive approach, and effective strategies are required to enhance lifestyle. Further studies are also needed for planning effective interventions to improve lifestyles.

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