Behavioral Changes in Breast Cancer Patient Relatives in Turkey

Introduction

Breast cancer is an important healthcare issue for women and is one of the most commonly encountered cancers in the United States. It is also the second leading cause of cancer-related deaths with a 15% mortality rate, and it makes up 26% of all cancers (Harold et al., 2008). One out of every nine females has a risk of getting breast cancer at some point in their lives (Goss et al., 1998). Genetic causes are responsible for approximately 5-10% of all breast cancer and more than half of these are thought to be caused by mutations in the genes BRCA-1 and BRCA-2 (Calzone et al., 2005). In addition, it is thought that breast cancer has multifactorial origins, including advanced age, family history, increased exposure to female hormones, diet, benign breast diseases, and environmental factors. These carry a different potential in each individual and have a different risk load [Harold JB, et al., 2008]. It is reported that familial breast cancer occurs earlier than sporadic breast cancer; thus, screening tests should be administered starting from between the ages of 25 to 30 (Kuhl et al., 2010). Individuals with first-degree relatives diagnosed with breast cancer have a 5.5% risk of having breast cancer while this risk increases to 13.3% if there are two first-degree relatives with the disease (Collaborative Group on Hormonal Factors in Breast Cancer, 2001).

Breast cancer is a phenomenon that results from both familial and environmental factors, and, as a result, it can potentially affect all members of a family. However, it is not yet clear whether there is a change in the attitudes and behaviors of family members toward cancer after one individual in the family has been diagnosed with breast cancer (Goss et al., 1998; Collaborative Group on Hormonal Factors in Breast Cancer, 2001; Calzone et al., 2005; Harold et al., 2008; Kuhl et al., 2010).

Relatives who quit smoking, change their diet, exercise habits, and lifestyles, start using vitamin supplements or alternative medicines, visit a doctor due to suspicion of cancer, or undergo cancer screening are possible behavioral changes that can be encountered. These changes can vary according to the awareness level of the individual and can lead to early cancer diagnosis. Perception of the patient and the disease is important for the relatives living with those stricken with breast cancer, and studies have shown that there is no distinct level in this perception. It differs from person to person (Kagawa-Singer et al., 2003). Some studies have shown that the most important health problem seen in the relatives of the cancer patients was psychological stress (Couper et al., 2006), followed by general body symptoms and deterioration in

Abstract

Background: Changes in the attitudes and behavior of relatives of breast cancer patients concerning cancer prevention and screening after diagnosis in a loved one were evaluated. Materials and Methods: Forty-three questions were used to collect data from the relatives of the breast cancer patients who had been living with their relatives for at least one year. Results: The study group was composed of 171 female relatives (median age: 43, range: 17-82 yr). After the patients were diagnosed with breast cancer, changes in the attitudes and behavior of their relatives toward the prevention and screening of cancer were evident in 78 (45.6%) of the study participants (e.g. eating habits, quit or reduced smoking, exercise habits). In addition, it was noted that some characteristics of the relatives had different effects on different attitudes and behavior. Conclusions: Awareness on breast cancer among the relatives of breast cancer patients is useful for the management of health and social problems that can be seen in these individuals. At the same time, this information could help countries determine whether their actual level of healthcare for early cancer diagnosis, prevention, and screening are adequate.

Keywords: Breast cancer - awareness - patient relatives - behavioral changes
brain functions (Wagner et al., 2006).

Promoting public awareness on breast cancer is an important public issue. Thus, determination of behavioral and attitudinal changes in the relatives of breast cancer patients would be an interesting and effective way of enabling public awareness on the disease. On the other hand, it is also important for managing possible cancer-related health issues and for early diagnosis of this disease. Moreover, it can be used as a subjective indicator for countries to examine their progress in evaluating relatives of cancer patients regarding cancer prevention and screening as well as for the implementation of related programs.

Therefore, we examined the changes in the attitudes and behaviors of the relatives of breast cancer patients and kept the psychological problems of the relatives out of the equation.

Materials and Methods

The relatives of the breast cancer patients who were treated in the Department of Medical Oncology, Dokuz Eylül University between July 2010 and January 2011 were asked forty-three questions, and the data was then collected. Relatives of the patients were asked questions about general characteristics and the changes in the attitudes and behaviors toward cancer prevention and screening after the patients diagnosed breast cancer. Questions were directed to the first-degree relatives of the patients (mothers, sisters, and daughters) and to those who shared a home with the patient at least one year.

The statistical analysis of the data obtained was carried out using the Statistical Package for Social Sciences for Windows (SPSS) Version 15.0 software, and the chi-square test was used for comparing the independent groups. A value of p<0.05 was accepted as statistically significant.

Results

General characteristics of the relatives of the patients: A total of 171 first-degree relatives of 156 breast cancer patients being treated were enrolled in the study group. Of these, 141 patients had one relative in the study while 15 patients had two relatives who participated. Twenty-three patients (13.5%) had stage I cancer while 28 (16.4%) had

| Characteristic                              | Median (range) | n (%)   |
|--------------------------------------------|----------------|---------|
| Place of residence of the relatives (with the patient and the time interval) |                |         |
| The same city (years)                      | 21 (17-68)     | 73 (42.7) |
| A different city (years)                   | 18 (1-69)      | 98 (57.3) |
| Relationship to the patient                |                |         |
| Mother                                     | 48 (28.1)      |         |
| Daughter                                   | 59 (34.5)      |         |
| Sister                                     | 64 (37.4)      |         |
| Moment relative found out about breast cancer diagnosis | 148 (85.5) |         |
| Following diagnosis (no. of days)          | 90 (30-600)    | 23 (13.5) |
| Other relative with a diagnosis of breast cancer |        |         |
| Mother with breast cancer                  | 12 (7.0)       |         |
| Daughter with breast cancer                | 11 (6.4)       |         |
| Sister with breast cancer                  | 6 (3.5)        |         |
| Maternal aunt with breast cancer           | 5 (2.9)        |         |
| Mother and daughter with breast cancer     | 4 (2.3)        |         |
| Mother and sister with breast cancer        | 3 (1.7)        |         |
| Paternal aunt with breast cancer           | 3 (1.7)        |         |
| Maternal grandmother with breast cancer    | 3 (1.7)        |         |
| Paternal grandmother with breast cancer    | 2 (1.2)        |         |
| Maternal grandmother and mother with breast cancer | 2 (1.2) |         |
| Educational levels of the relatives        |                |         |
| Illiterate                                 | 6 (3.5)        |         |
| Literate                                   | 2 (1.2)        |         |
| Elementary school                          | 53 (31.0)      |         |
| Junior high                                | 12 (7.0)       |         |
| High school                                | 44 (25.7)      |         |
| Two year college (Pre-college)             | 23 (13.5)      |         |
| College                                    | 31 (18.1)      |         |
| Professions of the relatives               |                |         |
| Stay-at-home mom                           | 65 (38.0)      |         |
| Teacher                                    | 18 (10.5)      |         |
| Unemployed                                 | 14 (8.2)       |         |
| Tradesmen                                  | 12 (7.0)       |         |
| Student                                    | 10 (5.8)       |         |
| Retired                                    | 9 (5.3)        |         |
| Banker                                     | 9 (5.3)        |         |
| Secretary                                  | 8 (4.7)        |         |
| Lawyer                                     | 8 (4.7)        |         |
| Other                                      | 18 (10.5)      |         |
| Economic status of the relatives           |                |         |
| Good                                       | 61 (35.7)      |         |
| Intermediate                               | 105 (61.4)     |         |
| Poor                                       | 105 (61.4)     |         |
| Very poor                                  | 5 (2.9)        |         |
| Professional and educational levels        |                |         |
| Relative with history of benign breast disease | 27 (15.8)  |         |
| Non-tumoral disease                        | 19 (11.1)      |         |
| Benign breast tumor                        | 8 (4.6)        |         |
| Breast self-examination                    | 116 (67.8)     |         |
| Those who know how to do it                | 94 (55.0)      |         |
| Those who have done it                     | 74 (43.2)      |         |
| Those who do it regularly--once a month    |                |         |
| Previous breast ultrasonography            |                |         |
| For routine controls                       | 47 (27.4)      |         |
| For clinical suspicion                     | 24 (14.1)      |         |
| Previous mammography                       | 45 (26.3)      |         |
| For routine controls                       | 18 (10.5)      |         |
| Relaties who have undergone regular testing |            |         |
| Mammography+Hemogram+Biochemical assay     | 14 (8.2)       |         |
| Breast ultrasonography+Hemogram+Biochemical assay | 10 (5.8)  |         |
| Hemogram+Biochemical assay                 | 6 (3.5)        |         |
| Hemogram+Biochemical+Hormonal assay        | 5 (2.9)        |         |
| Mammography+Breast ultrasonography         | 2 (1.2)        |         |
| Daily physical activity level              |                |         |
| Very active                                | 60 (35.1)      |         |
| Active                                     | 95 (55.6)      |         |
| Not so active                              | 16 (9.4)       |         |
| Regular exercise                           | 40 (23.4)      |         |
| Period of regular exercise (years)         | 12 (1-60)      |         |
| Weekly exercise (days)                     | 3 (2-7)        |         |
| Daily exercise (hours)                     | 1 (1-6)        |         |
| Using alternative medicines for cancer prevention | 5 (2.9) |         |
| Using vitamin supplements for cancer prevention | 7 (4.0) |         |
| Dietary habits                             | 127 (74.2)     |         |
| Rich in meat                               | 14 (8.2)       |         |
| Rich in grains                             | 5 (2.9)        |         |
| Rich in vegetables and meat                | 9 (5.3)        |         |
| Rich in vegetables and grain               | 6 (4.9)        |         |
| Rich in vegetable, grain, and meat         | 5 (2.9)        |         |
| Rich in vegetable, grain, and fat          | 5 (2.9)        |         |
| Cigarette smoking                          |                |         |
| Smokers                                    | 117 (68.4)     |         |
| Cigarettes per day                         | 20 (2-25)      |         |
| No. of years smoking                       | 15 (3-30)      |         |
| Ex-smokers                                 | 25 (14.6)      |         |
| Cigarettes per day                         | 10 (5-20)      |         |
| No. of years since quitting smoking        | 2 (1-26)       |         |
| Age started smoking                        | 19 (14-53)     |         |
| Non-smokers                                | 29 (17.0)      |         |
when they found out about their family member's disease after a period of time.

Changes in the attitudes and behaviors of the relatives is vital due to the sheer numbers of relatives affected and because this research on 171 relatives of breast cancer patients regarding cancer prevention and screening programs.

All data can be found in Table 3.

**Discussion**

Breast cancer is one of the most common and lethal cancers; therefore, changes in the attitudes and behaviors of relatives of breast cancer patients regarding cancer prevention and screening are important issues. Awareness of these changes is vital due to the sheer numbers of relatives affected and because this research on 171 relatives of breast cancer patients is beneficial as an evaluative tool for countries when examining their cancer prevention and screening programs.

After the patients were diagnosed with breast cancer, we found that an important part of their relatives had...
attitudinal and behavioral changes toward cancer prevention and screening. These changes were changing eating habits, changing smoking status, changing exercise habits, going to a specialist due to suspicion of cancer, changing the lifestyle, underwent cancer screening tests, beginning to use vitamins or using alternative medicines for cancer prevention. Moreover, it was observed that different factors such as whether the relative was the mother, daughter, or sister of the patient, whether they had graduated from high school or college, whether the patients had stage IV cancer, whether they were a stay-at-home mom, whether they had been living with the patient for a prolonged period of time, and whether they had another relative with breast cancer greatly affected the changes in attitudes and behaviors.

Cancer patients being followed up and treated at home need help in many areas (Given et al., 2001). The relatives who take part in the management of their treatment carry huge burdens and may face various social and emotional problems (Sjovall et al., 2009; Svinin et al., 2010). For example, it has been shown that all family members of the cancer patient, including spouses, children, and parents, are under psychological stress and even the lifestyles of the caretakers were deeply affected. This often results in frequent interfamilial conflicts between the patients and their families (Baider et al., 2008; Rhee et al., 2008; Sjovall et al., 2010).

In one of the studies that examined behavioral changes in relatives of cancer patients, it was shown that after finding out about the cancer diagnosis, there was a serious increase in the relative’s healthcare expenses, especially for money spent on psychological needs (Sjovall et al., 2009). It has also been shown that the degree to which the attitudinal and behavioral changes take place depends on the stage of cancer (Butler et al., 2005; Braun et al., 2007).

A review of the literature shows that studies conducted on the relatives of cancer patients primarily have dealt only with their psychological problems (Given et al., 2001; Couper et al., 2006; Wagner et al., 2006; Baider et al., 2008; Rhee et al., 2008; Sjovall et al., 2009; Svinin et al., 2010; Rodríguez et al., 2011; Svetina et al., 2012). No study exists for any kind of cancer that examines the changes in attitudes and behaviors of the relatives of cancer victims. From our study, we know firsthand that these changes occur to varying degrees, and finding out how some personal characteristics can affect the changes in attitudes and behaviors is an important area for further research.

Another important issue is providing adequate support for the relatives that are caring for the cancer patient, a challenging task under the best of circumstances. It has been shown that proper care facilitates fighting the disease for both the patient and the relative in question (Salminen et al., 2004; Sjovall et al., 2009), and this is true for breast cancer as well (Schmid-Buchli et al., 2008). Not only is supporting the relatives vital, but also training them on how to communicate with the patient better helps decrease the psychological stress felt by both the relatives and the patient (Shields et al., 2004). In order to encourage the breast cancer patient and their relatives, the authors think that it is important to get to know the relatives as much as possible and be aware of the behavioral changes that will take place to some degree.

In our study, our aim was to focus on the changes in the attitudes and behaviors toward cancer prevention and screening by the relatives of breast cancer patients rather than on their possible psychological problems and to show beneficial ways to deal with these problems. The authors think that early diagnosis of the health problems that these individuals are likely to have and the subsequent interventions are important for both individual and societal health. This kind of approach can nudge governments to give more attention to practices involving cancer prevention and screening, which is an indefinite but important indicator of the efficiency of a country’s overall healthcare system.

In conclusion, it can be deduced that after finding out about a family member who has breast cancer, most relatives show changes in their attitudes and behaviors toward cancer prevention and screening. Physicians have to be aware of these changes and, if needed, the relatives should be guided by the related medical units. Moreover, by keeping in mind that these attitudinal and behavioral changes in the relatives vary widely, healthcare professionals should try to provide individually-planned guidance as much as possible.

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