



# Predictors of Self Assessed Support Needs in Women with Breast Cancer: A Classification Tree Model

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**Abstract**

**Introduction:** Evaluating predictors of the self-assessed support needs of women with breast cancer may guide care planning, counselling and education of the women. Therefore, this research was planned and studied. The researcher aimed to determine predictors of self-assessed support needs by classification tree in women with breast cancer.

**Methods:** The sample consisted of 282 women with breast cancer. Data were collected by treatment characteristics and the self-assessed support needs of women with breast cancer scale in 2014. The researcher visited the oncology clinic two days (Monday and Saturday) in every week and conducted interviews with the patients. The participants read the questionnaire and they marked their answers on the sheets. The questionnaire took approximately 20 minutes to complete and could be understood by people with minimal reading ability. All of the participants completed the questionnaire.

**Results:** The participants perceived the need for support needs in all categories; they expressed the highest support need in category of after care. Age of the women was important predictor for femininity and body image, and indirect effective on total support need in this study. Education level was an important predictor for information support need. Treatment characteristic was an important predictor for total support needs. Total demographic and disease/ treatment characteristics were predictor in 10% level for total support needs.

**Conclusions:** The results of this study should increase awareness among cancer care professionals about a range of psychosocial needs.

## INTRODUCTION

Breast cancer is the most commonly diagnosed cancer in women, and continues to be the leading cause of cancer death in women worldwide. Worldwide, it is estimated that more than one million women are diagnosed with breast cancer every year, and more than 410,000 will die from the disease, representing 14% of female cancer deaths. Breast cancer is a disease that is not restricted by culture, religious belief, social class, or economic status. It is estimated that there are more than 1,050,000 reported new cases of breast cancer on an annual basis [1]. Today, breast cancer is the malignancy with the highest incidence among women. In Western countries, one in 8-10 women will be diagnosed with breast cancer during her lifetime [2].

In Turkey, breast cancer is the most common diagnosed cancer of all cancers (46.6/100000) and the most common cause of mortality due to cancer for Turkish women population [3]. However, improvements in treatment and early diagnose of breast cancer may have

led to increase expected life years after diagnosis in other countries and Turkey [3-6]. The diagnosis, treatment and etc. cause considerable psychological, physical and social dysfunction for many women with breast cancer [7, 8].

Women expressed a preference for receiving emotional support from professional counsellors rather than volunteers at the hospitals during treatment in qualitative study of women with breast cancer in Australian. They also expressed a need for more non-hospital based support services that provided lifestyle support, including diet, education, exercise, information on complementary therapies and stress management [9]. A survey of 260 sisters and daughters of women with breast cancer found that two-thirds reported wanting more information. They perceived their general information needs to be more important than their support needs and they also felt that their informational needs were typically more met than their support needs

[10]. The patients reported needing help with psychological and sexual issues. They suffered from treatment-related symptoms. More treatment-related symptoms and depression were related to the patients' needs for supportive care [11].

Determining of self-assessed support needs of women with breast cancer enable direct assessment of patients' perceived needs and provide more understanding of needed resources. In addition, establishing of the self-assessed support needs allow the identification of the magnitude of need for help, thereby allow some prioritization of service needs so that resources can be allocated where the need is most urgent. Other than these advantages, also enables the identification of individuals and/or patient subgroups with higher level needs. Therefore, needs assessment potentially enables prevention and/or reduction of problems through appropriate early intervention [11-13]. Evaluating predictors of the self-assessed support needs of women with breast cancer may guide care planning, counselling and education of the women. So, this research was planned and studied.

This study was carried to determine predictors' evaluation of self-assessed support needs cluster in women with breast cancer. Predictors of the self-assessed support needs clusters of women with breast cancer may guide care planning, counselling and education of the women. A few researchers on the topic of breast cancer studied the self-assessed support needs of women with breast cancer. The aim of this study was to determine predictors of self-assessed support needs in women with breast cancer by classification tree.

## METHODS

### Participants

A descriptive design was used to the study. By performing a power analysis with an error of 0.05, a 0.95 confidence interval, an effect size of 0.4, and a population representation of 0.95, it was determined that the minimum sample size was 282 women with breast cancer. The women who previously underwent mastectomy and were at the stage-II of cancer and who applied to the Medical Oncology Department of Atatürk University between 10 January and 1 December 2014. Thus, this study was carried out at the outpatient and inpatient medical oncology clinics, where patients were examined by regular follow-up evaluation. The women were selected through convenience sampling method to form the study group. The eligibility criteria were: (1) had being registered with a primary diagnosis of breast cancer in the oncology clinic; (2) aged 18 years or upper, (3) had a surgical treatment in

the history, (4) had been able to read and understand in Turkish language and (5) did not have any kind of metastasis.

### Procedure and Data Collection

Data were collected using questionnaire including demographic, disease/treatment characteristics, and self-assessed support needs of women with breast cancer (SASNS). It was developed by Lindop and Cannon (2001) [14] on breast cancer patients to determine the current needs, and adapted by Erci (2007) [15] to Turkish women with breast cancer. The questionnaire consists of seven factors. These factors were diagnosis, treatment, support, femininity and body image, family and friends, information and after care. The questionnaire formed a 54-item. Each statement of need was measured on a five-point Likert scale of SASNS, ranging from no importance (scored 1) to extremely important (5). The maximum score of the scale was 270 and minimum score was 54. Evaluation of the scale score was made by totalling the sum points. The higher the score, the higher need for self-assessed support needs of women with cancer high. The SASNS was found to have an overall coefficient alpha of 0.93. Alpha of the seven factors ranged from 0.71 to 0.84 [15].

The researcher visited the oncology clinic two days (Monday and Saturday) in every week and conducted interviews with the patients. The researcher introduced the questionnaire to the participants and explained the material covered. Then, the participants read the questionnaire and they marked their answers on the sheets. The questionnaire took approximately 20 minutes to complete and could be understood by people with minimal reading ability. The questionnaire was given to the women in a separate quiet room of the oncology clinic. All of the participants completed the questionnaire.

### Ethical Considerations

Approved was gained from the ethical committee at Atatürk University (code: 2013/7-29), and informed consent was obtained from each participant for this study. The patients were informed about the purpose of the research. The participants were assured of their right to refuse to participate or to withdraw from the study at any stage. The anonymity and confidentiality of participants were guaranteed.

### Data Analysis

Frequency and mean were used to establish support needs of the women. Classification Tree was utilised to determine the predictors about the support needs of women with breast cancer.

RESULTS

Characteristics of the Participants

The majority of the participants were aged 20-45 years. 86.5 % of them were married and 44.0% had graduated from primary school. The mean duration of breast cancer since diagnosis was  $3.0 \pm 2.9$  years. The most of the patients had received chemotherapy. The minority of the women have diabetes mellitus, cardiovascular diseases and hysterectomy, and 24.8% of the women were smoking (Table 1).

The demographic and disease/treatment characteristics of the participants were shown in Table 1.

The mean scores of the items for the seven categories of support needs ranged from the lowest to the highest. Support needs expressed by the patients were clustered. The participants perceived the need for support needs in all categorical; they expressed the highest support need in category of after care (58.9% and 22.7%), family and friends (58.9% and 20.6%), treatment (62.4% and 2.1%), support (53.9% and 5.0%), information (48.1% and 7.1%), femininity and body image (42.5% and 5.0%), and diagnosis (39.8% and 3.5%) respectively (Table 2).

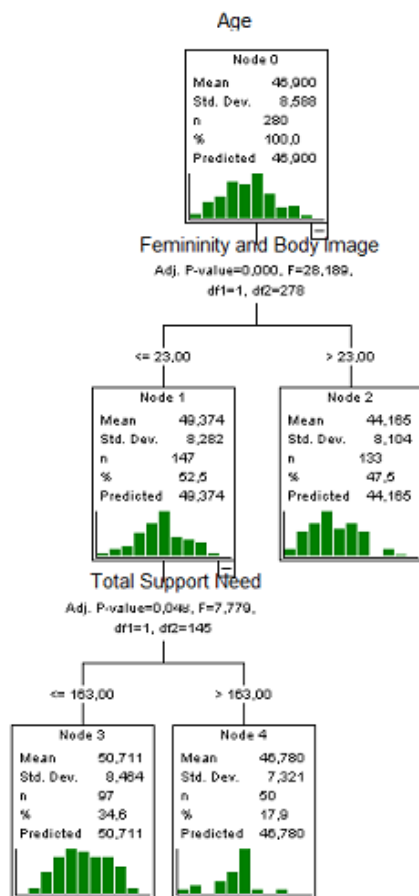


Figure 1. According to Age Femininity and Body Image of the Women, Total Support Need Cluster

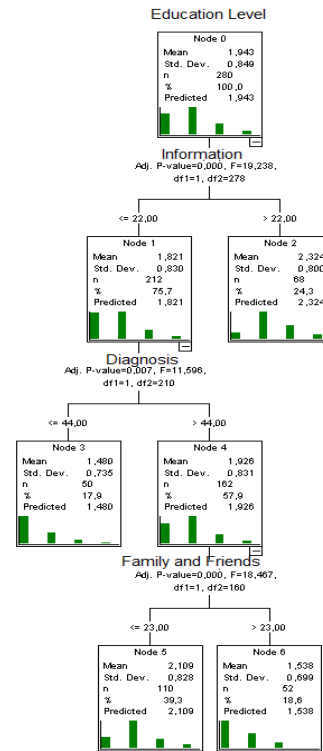


Figure 2. According to Education Level of the Women, Information Need, Diagnosis Need and Family and Friends Need Cluster

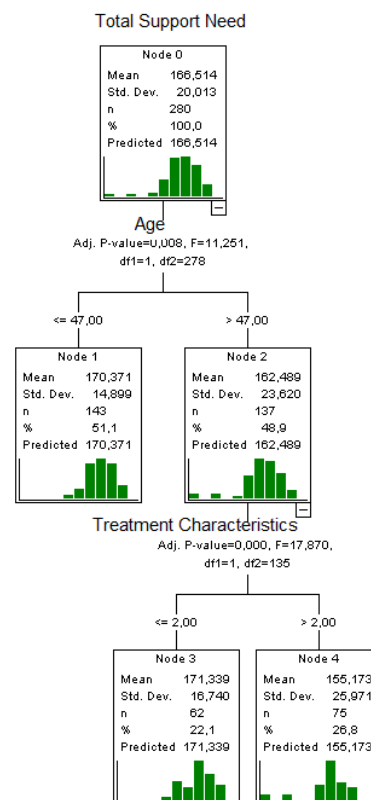


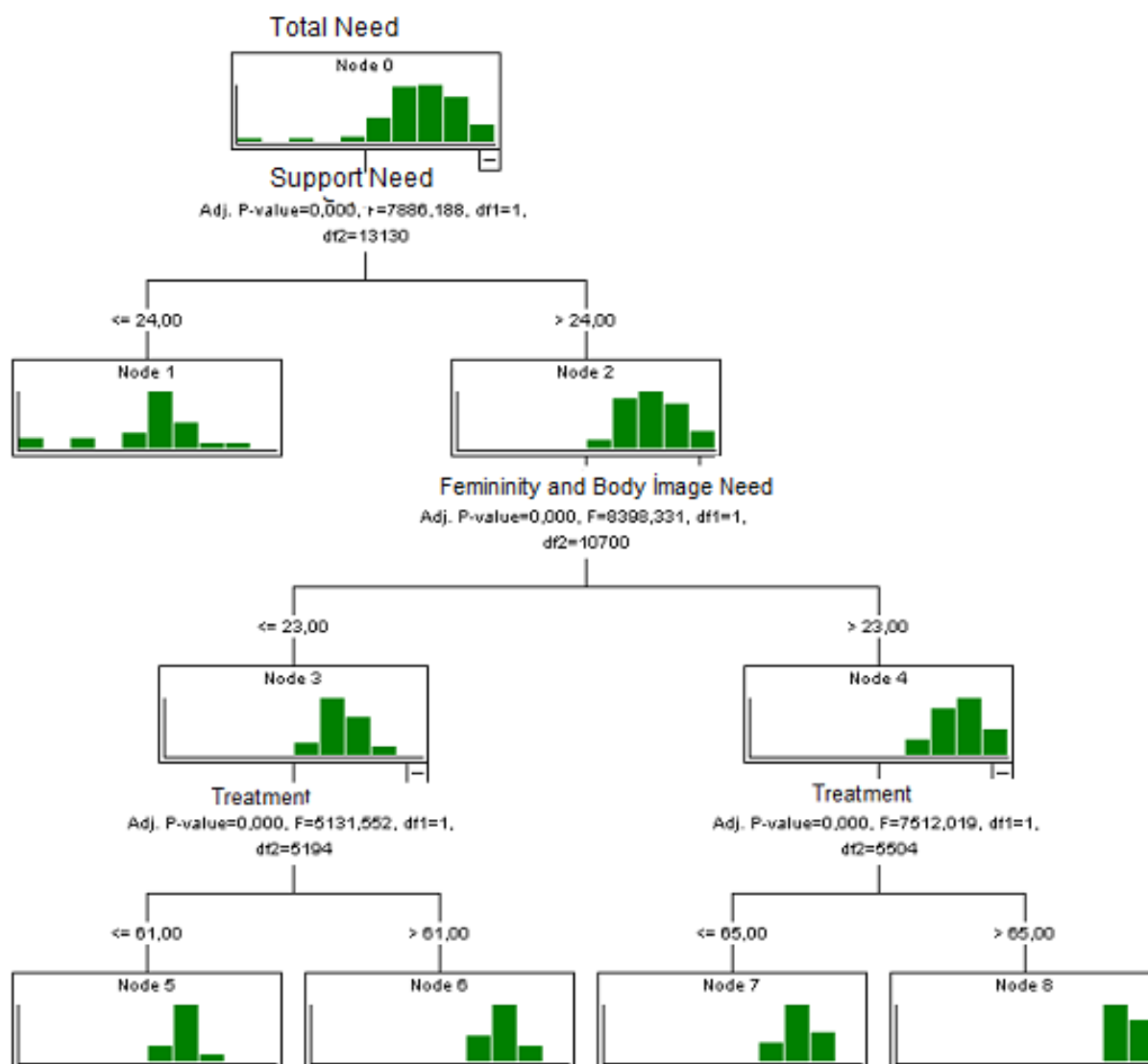
Figure 3. According to Age and Treatment Characteristics of the Women, Total Support Need Cluster

**Table 2.** Frequency of support needs of women with breast cancer and mean scores of support needs scale and its seven subscales

Classification Tree analysis shown that age of the women was important predictors on femininity and body image (F: 28.18, df: 278, p: .000). In addition, age of the women had indirect effective on total support need (F: 7.77, df: 145, p: .048). The women over 23 years of age required to more support about femininity and body image support need. The majority of these women needed much more total support (Figure 1).

Education level of the women was directly effectiveness on information support need and women with primary school and less education level ordered to more support

about information need (F: 19.23, df: 278, P: .000). Women with less education required to more support related diagnosis need (F: 11.69, df: 210, P: .007), and these women demanded to family and friends support need (F: 18.46, df: 160, P: .000) (Figure 2). Women received hormone therapy (F: 17.87, df: 135, P: .000) and women under 47 years of age ordered to more total support need (F: 11.25, df: 278, P: 008) (Figure 3). Other demographic and disease/treatment characteristics of the women with self-assessed support need and categories did not consist of clusters. Women with higher support need requested femininity and body image support need. High femininity and body image support need requested treatment support need (Figure 4).



**Figure 4.** According to Treatment Characteristics of the Women, Support Need, Family and Friends Need and Total Support Need Cluster

**Table 1.** The Demographic and Disease/Treatment Characteristics of the Women (n = 282)

Demographic and Disease/Treatment Characteristics		X ± SD	
Diagnosis duration (years)		3.0 ± 2.9	
<b>Age ranges (years)</b>		<b>N</b>	<b>%</b>
20-45		122	43.2
46-53		104	36.9
54+		56	19.9
<b>Education Level</b>		<b>N</b>	<b>%</b>
< Primary School		94	33.3
Primary School		124	44.0
High School		48	17.0
University		16	5.7
<b>Marital Status</b>		<b>N</b>	<b>%</b>
Married		244	86.5
Single		38	13.5
<b>Treatment Characteristics</b>		<b>N</b>	<b>%</b>
Hormone therapy		24	8.5
Radiotherapy and chemotherapy		110	39.0
Chemotherapy		132	46.8
Hormone - Radio and chemotherapy		16	5.7
<b>Surgery</b>		<b>N</b>	<b>%</b>
Only mastectomy		138	48.9
Vide local excision		144	51.1
<b>Menopause</b>		<b>N</b>	<b>%</b>
Yes		106	37.6
No		176	62.4
<b>Chronic Illness</b>		<b>N</b>	<b>%</b>
Diabetes Mellitus			
No		250	88.7
Yes		32	11.3
<b>Cardiovascular diseases</b>		<b>N</b>	<b>%</b>
No		252	89.4
Yes		30	10.6
<b>Simoking</b>		<b>N</b>	<b>%</b>
No		212	75.2
Yes		70	24.8
<b>Hysterectomy</b>		<b>N</b>	<b>%</b>
No		236	83.7
Yes		46	16.3
<b>Total</b>		<b>282</b>	<b>100.0</b>

**Table 2.** Frequently of Support Needs of Women with Breast Cancer and Mean Scores of Support Needs Scale and Its Seven Subscales

The Scale and Its Subscales	Max-Min	Total, Mean ±SD	Item, Mean ±SD	Important	Very Important
Diagnosis	25-65	49.9±7.7	3.8 ± 0.6	39.8%	3.5%
Treatment	28-75	61.5±7.6	4.1 ± 0.5	62.4%	2.1%
Support	11-35	27.9±4.6	4.0 ± 0.6	53.9%	5.0%
Femininity and Body Image	10-30	23.0±4.2	4.0 ± 0.7	42.5%	5.0%
Family and Friends	9-25	21.5±3.1	4.3 ± 0.6	58.9%	20.6%
Information	9-25	19.8±3.2	4.0 ± 0.6	48.1%	7.1%
After Care	5-15	12.6±2.1	4.2 ± 0.7	58.9%	22.7%
<b>Total</b>	<b>54-270</b>	<b>216.7±25.8</b>	<b>4.0 ± 0.4</b>	<b>51.8%</b>	<b>0.7%</b>

## DISCUSSION

The self-assessed support needs of the patients was higher both in terms of total and subcategories scores. In other words, the support requirements of the patients were high. Lindop and Cannon (2001) [14] found that having prompt information about treatment was the highest mean score 4.9 point [14]. The findings of the current study were not consistent with Lindop and Cannon's result. Reason of this could be cultural differences in populations. In the study, the participants perceived the need for support needs in all categories; they expressed the highest support need in category of after care. Support need clustered in after care, family

and friends, treatment. Likewise, Haynes-Maslow et al. determined that the participants demanded for support needs of Family and Friends [16]. In addition, in a previous study was identified that cancer patients needed health information, but had higher needs in the physical and daily living domain. In addition, psychosocial needs relating to health professionals, information and support networks were commonly expressed and strongly felt by cancer patients [13]. Needs relating to identity, emotional, spiritual and practical issues were less commonly expressed but were also strongly felt [4, 17]. In one recent study was stated that the most frequent needs expressed by the patients were concerning diagnosis (40%) and future conditions

(61%) [8]. Moreover, Alagraa, Abujaber, and Chandra, Doughty (2015) determined that the most common areas of support desired were religious and physician referred support at 20% each, while 13% indicated a desire for all four categories presented in the questionnaire. Recio-Saucedo, Gerty, Foster, and Eccles (2016) [5] found that a wide variety of on-going psychosocial and information needs were reported by breast cancer survivors including support needs, psychological needs, practical needs, physical needs and information needs. Our data were compatible with finding of given these studies.

Classification Tree analysis shown that age of the women was important predictors for femininity and body image, and age was indirect effective on total support need in this study. Additionally, it was determined that women over 23 years of age required more support need to femininity and body image, and the majority of these women requested any more total support need in this study.

Another finding indicated that young women preferred greater more detailed information regarding treatment side effects, sexuality, and body image. Information was required in a continuum throughout the treatment experience and not only at diagnosis when treatment decisions were made [5]. This study's result was similar to given study's finding.

Education level was directly effectiveness on information support need and women with primary school and less education level requested more information support need. Women with less education requested more diagnosis support need, and these women demanded family and friends support need. Women received hormone therapy and 47 less aged perceived more total support need. Thewes, Butow, Girgis and Pendlebury (2004) [18] found that younger women reported several needs directly related to being of younger age or pre-menopausal at the time of diagnosis.

Women with higher support need requested femininity and body image support need. High femininity and body image support need requested treatment support need. High femininity and body image support need requested treatment support need. One study showed, consistent with the research on Latina breast cancer survivors, Latinas talked more about how breast cancer affected their body image, intimacy and sexuality. The period after treatment ended is filled with many challenges for breast cancer survivors because it commences new meanings in their life, new emotional responses including loss, relief, uncertainty of their future, fear, determination to survive and recognition of

their need for convalescence. Breast cancer survivors report that although family, friends, and health care professional perceive their experience to be largely over they experience new challenges as a result of complex changes such as disruption of intimacy, changes in self-perceptions, and body appearance [19]. The results of the present study were some similar to the findings of the other researches.

#### **Limitation**

In this study had been several limitations that need to be considered when the findings are interpreted. Therefore, the results may be generalized to the sample group in this study. The sample in this study reflects only one area of Turkey. The findings therefore cannot be generalized to all patients with breast cancer in Turkey. Future studies should include larger samples from different regions in Turkey.

#### **CONCLUSION**

Women experienced a high level of support needs associated with after care of breast cancer. Age of the women was important predictor for femininity and body image, and indirect effective on total support need in this study. Education level was an important predictor for information support need. Treatment characteristic was an important predictor for total support needs.

#### **IMPLICATIONS FOR PRACTICE**

The information gained from this study should increase awareness among cancer care professionals about a range of psychosocial needs and may help them target particular breast cancer patients for particular support interventions. The long-term aim is to use the data from this research to produce a standardized profile of support needs. This would enable breast care nurses to focus their approach to women according to their predicted needs.

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#### **AUTHOR CONTRIBUTION**

BE was responsible for the study conception and design; the data analysis; the drafting of the manuscript; critical revisions to the paper for important intellectual content; data collection; statistical expertise; supervised the study.

#### **ETHICAL CONSIDERATION**

Approved was gained from the ethical committee at Atatürk University (code: 2013/7-29), and informed consent was obtained from each participant for this study.

**CONFLICTS OF INTEREST**

None of the authors has any conflicts of interest to declare.

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