

# Social support and breast cancer: A comparative study of breast cancer survivors, women with mental depression, women with hypertension and healthy female controls



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## ABSTRACT

**Objectives:** Among breast cancer (BC) survivors, inadequate social support (SS) is associated with a significant increase in cancer-related mortality and reduction in quality of life (QoL). The aim of the study was to explore perceived SS during BC trajectory by comparing BC survivors, women with depression, women with arterial hypertension, and healthy female controls to each other, and to compare perceived balance of receiving and providing SS.

**Material and methods:** The data of ongoing prospective postal survey was linked with national health registries. Respondents with BC (n = 64), depression (n = 471), arterial hypertension (n = 841) and healthy controls (n = 6274) formed the study population. SS was measured by a Sarason's 6-item shortened version of the Social Support Questionnaire (SSQ). The modified Antonucci's (1986) social support convoy model of the network of individuals was used to measure the dominating direction of SS. **Results:** The main provider of SS for all participants combined was the spouse or partner (94.3%), close relative (12.0%) and friends (5.4%). In all groups, particularly in the BC and arterial hypertension group, spouse or partner was seen as the most important supporter. The group suffering from depression reported significantly less SS in each domain of appraisal (p < 0.001). In total, 24.6% of all respondents reported receipt dominance of SS.

**Conclusion:** SS is a well-known determinant of wellbeing. Our study lends support to the spouse's or the partner's central role during the recovery phase of BC. Identification of factors improving the overall QoL of BC survivors is an important public health challenge.

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## 1. Introduction

Among females breast cancer (BC) is the most frequently diagnosed form of cancer [1]. Due to significant improvements in recent decades in screening protocols, diagnostic procedures, and treatment, BC mortality has decreased worldwide [2–4]. However, BC

and its treatment causes considerable harm to women in various life spheres including wellbeing [5]. Psychological and social problems among adult cancer survivors include the need for social support (SS), depression, anxiety, fear of recurrence, and impacts on family [6]. Hence, the disease is a serious threat to the patients' quality of life (QoL) [7,8].

Perceived SS can also include dimensions of social integration [9] and has been shown to be related to various areas of health behavior [10]. Among BC survivors, inadequate SS is associated with a substantial increase in cancer-related mortality [11]. Social isolation is a similar health risk factor as the more traditional ones like high blood pressure, obesity, and smoking [9]. Increased SS, on

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the other hand, shows positive effects on BC patients' physical, psychological and social functioning and on their QoL [12–15]. SS is identified to be associated with improved survival of BC patients [16]. Generally perceived emotional support and a large, diverse social network, have been shown to strongly protect against depression [17].

Family environment as a source of SS plays a central role in BC patients' coping strategies, and plays a significant role in increasing cancer patients' abilities to cope with the disease [18]. It is an important resource of cancer patients' efforts to stay healthy [19,20]. Adequate SS also improves sexual functioning and overall QoL [21,22].

There is still limited knowledge about the origin of SS among BC survivors, particularly in comparison with individuals suffering from other long-term illnesses, and healthy controls.

In this study we focused on the SS received from a spouse, partner or other close individuals. We hypothesized that particularly women with BC, in their recovery phase, experience the greatest SS from a spouse or a partner, and that this support is pronounced in the BC group as compared to individuals with other long-term illnesses and on the other hand to healthy controls. The aim of the study was to explore perceived SS during BC recovery phase by comparing four groups of women to each other, i.e., 1) BC survivors, 2) women with mental depression, 3) women with arterial hypertension, and 4) healthy female controls. Another aim was to compare perceived balance of receiving and providing SS in these four groups.

## 2. Material and methods

### 2.1. Participants

The Health and Social Support (HeSSup) study is an ongoing, nationwide prospective cohort study of a representative sample of the four age groups (20–24, 30–34, 40–44 and 50–54 years) in Finland. The study was initiated in 1998. Follow-up postal surveys have been carried out in 2003 and 2012. The total number of participants in 1998 was 25,895, and the number of female participants was 15,267.

All data presented in this study are drawn from the 2003 questionnaire survey, which was used to maximize the number of observations in the BC group and enable sufficient follow-up for BC-specific survival. This survey data was linked with the Finnish Cancer Registry data, Drug Purchase and Reimbursement Registry of the Social Insurance Institution and mortality data from Statistics Finland for the years 1999–2007. For BC survival the patients were followed up until the end of 2015. The respondents who had a

registered diagnosis of BC, and no arterial hypertension (had not purchased anti-hypertensive medication) or any other chronic disease formed the study group (N = 64). Also those women with BC (n = 9), who had reported depression and had anti-depressive medication, were included.

There were three comparison groups for the BC group: 1) respondents who reported having suffered from depression, and had purchased anti-depressive medication (N = 471); 2) respondents who reported having arterial hypertension, and had purchased anti-hypertensive medication (N = 841); and 3) all respondents of corresponding age who had not reported any chronic disease, any cancer, depression or hypertension (N = 6274). The total number of BC survivors after initial recovery was relatively low, as the age of participants was generally low. Respondents diagnosed with BC prior to 1998 were excluded from the study. All respondents were women. None in the comparison groups had any cancer disease. Study design is shown in Fig. 1.

### 2.2. Outcome variables

Perceived SS was measured by a Sarason's 6-item shortened version of the original Social Support Questionnaire (SSQ) [23]. Each item solicits a two-part answer: 1) the scores for number of sources of SS and 2) satisfaction with SS that is available. The response options were: spouse/partner, some other close relative, close friend, close co-worker, close neighbor, another close person, and no one. For each question, one or more response options/person could be chosen.

The balance of perceived SS, i.e. whether they currently received or provided more support themselves from or to the persons mentioned above was determined by the adapted and modified Antonucci's (1986) social support convoy model of the network of individuals moving with the person through time and with whom the person exchanges SS [24]. If the respondent reported more receipt than provision of SS this is from here on called receipt dominance and if she again reported more provision than receipt of SS this is called provision overload. Respondents were also asked to report the gender of the supporter.

The respondents' level of education was classified into four categories: no professional education; vocational course or school/apprentice contract; college; and university/other high level education.

### 2.3. Statistical analyses

The youngest age group (20–24 years) was omitted from the statistical analysis since there was only one respondent with BC.

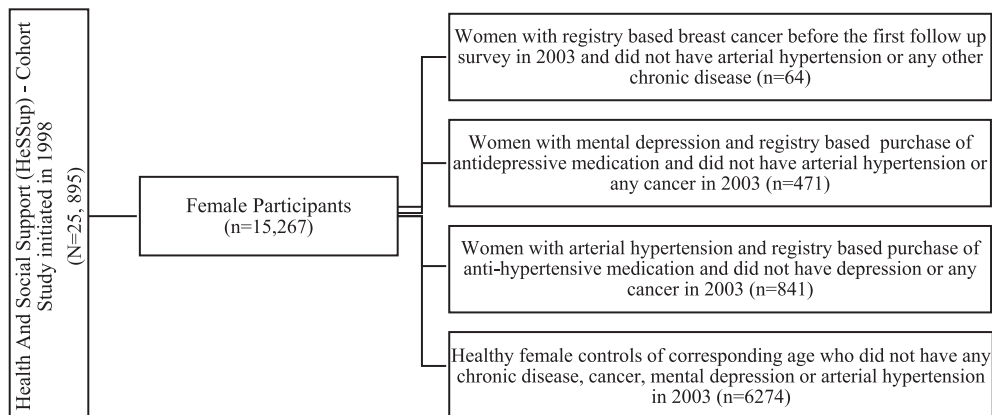


Fig. 1. Study Design.

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