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# Family-Based Group Interventions on Quality of Life and Sense of Coherence in Women with Breast Cancer

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## Abstract

**Introduction:** In recent years, the survival rate of breast cancer increases due to improvement in early detection and curative therapies and it highlights the importance of supportive care. The focus of supportive care is on well-being and bettering patient's Quality of life. Sense of coherence (SOC) is a factor enhancing the QOL. SOC represents patient's perception of life and ability to cope with major stressful life events. family-based and self-help group therapies are examples of supportive care. This study aimed to compare SOC, QOL, and their correlation in two groups of women with breast cancer, under family-based or self-help group therapy.

**Methods and Materials:** Participants were selected from patients, aged 18-65 years, with stage3 breast cancer or higher, referred to "ENTEKHAB" Cancer Center in Isfahan.80 patients were randomized into two interventional groups after obtaining informed consent. Data were collected using QOL BR23 (score range=23-92) and Antonov sky's SOC13 (score range=13-91). Validity and reliability of this questionnaire's Farsi version were confirmed and compared before and after intervention in both groups.

**Results:** The mean participant's age was 45.4±7.9 years. There was significant difference in the mean changes in QOL between family-based (6.3±5.5) and self-help (2.9±3.9) groups ($p < 0.05$). There was significant difference in the mean change in SOC between family-based (10.9±3.3) and self-help (4.1±3.1) group ($p < 0.05$)

**Discussion:** Results demonstrated that family-based intervention is more effective than self-help intervention in enhancing QOL and SOC of patients with breast cancer. QOL enhance is the result of these factors: family participation and Improvement of SOC.

**Keywords:** Breast cancer; Sense of coherence; Quality of life; Family-based intervention; Self-help intervention

## Introduction

Breast cancer is the leading cause of malignancy among women in the world and the major cause of cancer death in developing countries [1, 2]. It is a highly prevalent health issue in Iran [3], which has turned into the most common malignancy among Iranian women in recent years [4]. The onset of this malignancy among Iranian women is almost 10 years lower than the world average [3]. Almost 70% of the cases are diagnosed in advanced stages, which make its treatment more challenging for medical staff. This is while it has clinically long symptom duration before diagnosis. Therefore, early detection can improve survival rates. The application of newly developed diagnostic tools, routine national screening guidelines, and advanced medical and surgical methods has contributed to increased survival rates [6, 7]. Breast cancer is one of the leading causing of physical, mental, and social health impairment among women. Physical changes caused by this malignancy may adversely affect the patient's self-awareness, self- confidence, and sense of valuableness, and generally her QOL. Moreover, the patient's social status may also be affected by physical changes [8]. Many factors adversely affect the patient's mental health, including disease-related pain, concerns about the future of family members, fear of death, treatment complications, impaired personal, familial, and social functions, self-image impairments, and sexual dysfunction [9]. Chemotherapy can cause several complications and considerably affect QOL. As a result, QOL is a factor that should be specially considered, evaluated, and improved [10]. In other words, having a supportive attitude towards patients with breast cancer can help them in coping with the disease more effectively, preventing mood change in them, maintaining their parental position, and promoting their social and job functions [11]. QOL has a critical role in dealing with chronic diseases, especially malignancies. Cancer influences different aspects of QOL at variant levels, making it one of the most important concerns in Iran and the world [12]. The world health organization (WHO) defines QOF as "an individual's perception of his position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns" [13]. In addition to the disease itself, there are other factors involving in a patient's QOL. There are many different methods to improve adaptability and mental health to promote the QOL in patients with cancer. SOC is another major factor that affects the QOL, adaptation of coping strategies, and adaptability with the situation [14]. It is an inner experience that grows throughout adolescence until reaches stability which, in turn, improves physical and mental health [15]. In general, the patient's psychosocial status, such as SOC, must be considered in care provision [16]. As a result, in addition to medical aspects, recent treatments consider psychosomatic factors in dealing with chronic diseases, such as cancer. To this end, various psychotherapies,

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including individual and group therapies, are currently employed for patients with cancer [17]. The primary objective of most psychological interventions for patients with breast cancer is to improve their ability to deal with anxiety, pain, and post-treatment complications, and to enhance their QOL. The individual and family-based psychotherapies are very helpful in confronting the mental problems of the spouse or other family members, who suffer from cancer [18]. Group intervention, which involves a spouse or main caregiver, has become an interesting psychotherapy method for researchers and psychotherapists. In this technique, patients participate in group therapy alongside their spouse or main caregiver. This participation is critical because breast cancer diagnosis and treatment are extremely stressful procedures [17]. The important role a spouse plays in promoting the patient's QOL and the amount of stress the partner or caregiver undergoes highlight the need for family- or caregiver-based therapies. In this study, patients experienced a lower level of distress and couples reported the advantage of learning communication skills and anxiety management strategies. They also reported a lower level of stress, higher sexual function, and stronger relationships, confirming a high participation rate by this intervention method [17].

This study aimed to investigate the effects of the spouse- or caregiver-based group intervention on the SOC and QOL of the patients and compared them to those of self-help group therapies. The effect of SOC, as an intermediating factor, on the QOL was also investigated.

## Methods and Materials

This randomized clinical controlled trial study was conducted on patients with breast cancer, who were referred to the "ENTEKHAB" Center in Isfahan in the spring of 2018. The statistical population included women with breast cancer at stage III and IV, with a two-month interval after chemotherapy. The estimated sample size was 80. The participants were selected using non-random sampling and allocated to either the self-help or family-based intervention groups based on the random number table after obtaining their informed consent. Psychotherapy was implemented by specialists in the group- and family-based therapies in accordance with a predefined protocol.

### Intervention Protocol

Intervention patients participated in ten 90-minute family-based group intervention sessions with their spouse or main caregiver for ten weeks. The sessions, with a two-month interval from chemotherapy, were held by a psychotherapist. The QOL-BR23 questionnaire and Antonovsky's SOC scale were filled by the participants before and after the interventions. At the beginning of the study, all participants were provided with educational materials about breast cancer.

The sessions were started with relaxation and focused awareness by concentrating on breathing and a specific object, followed by a quick review of the previous session. Then, new lessons and instructions were provided and practiced in a group-based manner. The tasks of the participants were defined at the end of each session with an emphasis on relaxation throughout the day.

### Control Group Protocol

Similarly, the control group participated in ten 90-minute self-help intervention sessions for ten weeks. The intervention sessions were conducted with a two-month interval from chemotherapy by a psychotherapist. The QOL-BR23 questionnaire and Antonovsky's SOC scale were filled by the participants before and after the interventions. At the beginning of the study, all participants were provided with educational materials about breast cancer.

The self-help intervention group virtually discussed their experiences while one of them took the role of group manager to organize the conversation. They also shared their acquired skills and effective coping style throughout the disease.

### Instruments

**Quality of Life:** The EORTC-QOL-BR23 questionnaire is used to assess the QOL in patients with breast cancer. It is comprised of 23 questions on body image, sexual function, sexual enjoyment, future perspective, systemic therapy side effects, breast symptoms, arm symptoms, and upset by hair loss [8, 14]. The maximum and minimum scores of this questionnaire are, respectively, 23 and 92.

**Sense of Coherence:** Antonovsky, who developed this questionnaire, defined SOC as a personal orientation towards life and believed that the control on the stress could be evaluated via coherency test comprising three essential concepts:

1) Comprehensibility

2) Manageability

3) Meaningfulness

This questionnaire is comprised of thirteen 7-point Likert-based items. The participants score each item between 1 and 7. The maximum and minimum scores are, respectively, 13 and 91.

## Contents of Training Sessions

The central topics were the introduction of salutogenesis and its components, SOC, SOC growth, SOC correlation with self-esteem, locus of control, self-efficacy, general resistance resources, and health continuum, which were addressed through lectures, group discussion, and Q&A sessions. All patients received six-month follow-up and were re-evaluated one- and six-month post-intervention data analysis was done in SPSS22 using the paired t-test, independent t-test, and Chi-square. The ANCOVA test was used to adjust for confounding variables. The correlation between the intervention methods and SOC and QOL was investigated after modifying the effect of age using the general linear model (GLM).

## Results

This study assessed the QOL, SOC, and the correlation between them and compared the two intervention groups before and after the interventions. The mean age, educational attainment, job, and marital status of the participants are presented in Table 1. There was no significant between-group difference in the stage of the disease. The SOC and QOL scores of the two groups before, one month after, and six months after the interventions are presented in Table 2. There was not any significant-between group difference in the QOL and SOC scores; whereas, these scores were significantly higher in the family-based intervention than the self-help intervention after the interventions (Tables 1 and 2).

Concerning the SOC score, 34 participants (42.5%) had a slight increase (≤6), 31 participants (38.8%) had a moderate increase (7-12), and finally, 15 participants (18.8%) were scored higher than 13.

For the QOL score, 57 participants (71.3%) had a slight increase (≤7), 16 participants (20%) had a moderate increase (8-12), and 7 participants (80.8%) were scored higher than 13.

Moreover, a reduced QOL score was observed in 4 participants (10%) in the self-help intervention group and 2 participants (5%) in

**Table 1:** Demographic information of participants.

| | Family-based intervention group N=40 | Self-help intervention group N=40 | $P_v$ |
|---|---|---|---|
| **Age (mean & standard deviation)** | 43.1 ± 8.3 | 47.8 ± 6.9 | 0.007 |
| **Education** | 66% had a diploma and lower<br>34% had a university degree | 65% had a diploma or lower<br>35% had a university degree | 0.13 |
| **Job** | 52% were housewife<br>48% were employed | 50.2 % were housewives<br>49.8% were employed | 0.66 |

**Table 2:** Mean QOL and SOC scores in both groups before and after interventions.

| | | Family-based intervention group N=40 | Self-help intervention group N=40 | $P_v$ |
|---|---|---|---|---|
| Sense of Coherence | Before intervention | 50.3 ± 13.3 | 51.7 ± 9.6 | 0.59 |
| | One month after intervention | 61.7 ± 12.4 | 55.9 ± 8.9 | 0.02 |
| | Six months after intervention | 61.3 ± 12.3 | 55.8 ± 9 | 0.027 |
| Quality of Life | Before intervention | 60.4 ± 10.7 | 59.3 ± 5.8 | 0.6 |
| | One month after intervention | 66.7 ± 7.4 | 61.7 ± 6.9 | 0.002 |
| | Six months after intervention | 66.7 ± 6 | 62.5 ± 5.9 | 0.001 |

**Table 3:** Changes in mean QOL and SOC scores in the intervention group.

| | Frequency | | Changes in mean QOL score | Standard deviation | $P_v$ |
|---|---|---|---|---|---|
| Intervention | 40 | Self-help intervention | 2.9 | 3.9 | 0.002 |
| | 40 | Family-based intervention | 6.3 | 5.5 | |
| SOC score | 34 | Low | 2.3 | 3.8 | 0.002 |
| | 31 | Moderate | 6 | 5.3 | |
| | 15 | High | 6.8 | 5.2 | |

**Table 4:** Mean QOL and SOC scores in intervention subgroup.

| Group | Frequency | SOC variations | Mean | Standard Deviation | $P_v$ |
|---|---|---|---|---|---|
| Self-help | 31 | Low | 2.4 | 4 | < 0.05 |
| | 9 | Moderate | 4.8 | 3.2 | |
| | 0 | High | 0 | 0 | |
| Family-based intervention | 3 | Low | 2 | 0 | < 0.05 |
| | 22 | Moderate | 6.5 | 6 | |
| | 15 | High | 6.8 | 5.2 | |

the family-based intervention group while no change was observed in 1 participant (2.5%). Table 3 presents the QOL and SOC scores in each intervention group (Table 3).

Regarding the intermediating role of SOC in QOL improvement, some subgroups of SOC variations were created and the effect of intervention methods on the SOC and QOL scores was assessed. Table 4 presents the results. (Table 4).

## Discussion

This study compared the effect of the family-based intervention (spouse or caregiver) and self-help intervention on QOL and SOC of patients with breast cancer. It was assumed that SOC improvement, as a mediating factor, has a key role in QOL improvement.

The results demonstrated that the mean QOL score in the family-based intervention group (66 ± 6) was significantly higher than that in the self-help intervention group (62 ± 5.9) after the intervention ($p < 0.05$). The mean QOL score in the family-based intervention group (6.3±5.5) was twice that in the self-help intervention group (2.9±3.9) with the p-value < 0.05 (Table 1).

The results emphasized the key role of spouse and other caregivers in adopting a more effective coping style by the patient and improving his/her perception of the life-threatening conditions. They can considerably affect the QOL's components, through treatment complications (e.g. post-surgery scars), concerns about appearance, weight gain, fatigue, nausea, and other stressors like changes in family and marital roles and routine functions. On the other hand, patients themselves are responsible for bearing disease-related burdens and complications in the self-help interventions, resulting in the misperception of family members of the patient.

In general, either family-based or couple therapy, have been recently in the spotlight to improve the psycho-affective state of patients with such chronic diseases as cancer. A study in 2001 on the correlation of group and individual therapies with weight loss and showed the greater effectiveness of the group therapy even among those who initially preferred individual therapy [19]. Nowadays, couple therapy is increasingly commonplace. Another study (2004) investigated the effect of couple therapy intervention on genital and breast cancer and showed that the adoption of coping strategies, sexual function, adaptation with new situations, and level of stress improved as compared to the self-help therapy. As a result, couple therapy is superior to individual therapy [20]. Another similar study (2008) revealed the effectiveness of couple therapy in improving marital function and relationship between couples with a partner suffering from cancer [21]. The SOC, as a QOL promoting factor, improved in both family-based intervention and self-help intervention groups. This increase was significantly higher in the family-based intervention group (61.3±12.3) than the self-help intervention group (55.8±8.9) with $p < 0.05$. The QOL's score in the family-based intervention group (10.9±3.3) was twice that in the self-help intervention group (4.1±3.1) with p-value < 0.05.

The results illustrated the positive effect of participation in family-based and self-help interventions on the SOC. Although some studies reported a low range of SOC changes among adults, the present study revealed the considerable effect of interactions between family members and patients (family-based intervention) on disease perception and management.

Therefore, SOC can form one's attitude by affecting three factors, namely comprehensibility, manageability, and meaningfulness. In other words, SOC improvement can enhance QOL by creating better perception and control over the disease and giving meaning to life under challenging conditions [15].

In addition to the intervention, the SOC had a mediating role in QOL improvement. As a result, its scores were categorized as low, moderate, and high. Variations in the mean QOL score were obtained based on each intervention method and SOC interaction. Although this correlation was not significant because of the low sample size in the self-help group with a high SOC score and family-based group with a low SOC score, the highest QOL score (6.8±5.2) was observed in the family-based intervention group with high SOC score. None of the participants in the self-help group achieved a high SOC group; whereas, three participants in the family-based group obtained low SOC scores. This finding suggests that family-based intervention directly affect the QOL of patients suffering from cancer. On the other hand, concentrating these interventions on such mediating factors as SOC improvement and modifying some of its elements can have a synergic effect on QOL.

The effect of SOC changes on QOL has been reported by many studies. Rohani and Blanca Prieto reported the positive effect of the SOC on QOL of patients with breast cancer. They showed that higher SOC resulted in the adoption of more effective coping styles by the patients; whereas, a lower SOC demotivated them to cope with unpleasant events associated with the disease [22]. Siglen showed the effectiveness of the SOC on the QOL of patients with cancer by reducing their level of anxiety and depression [23]. Quintard assessed the predictors of sexual function in patients with breast cancer 3 months after the surgery. The aim was to determine the role of three SOC factors and found the positive effect of management on sexual function. He also reported that the improvement of the patients' perception of available resources could enhance their sexual functioning [24].

## Conclusion

Regarding the increasing rate of breast cancer in Iran, specifically at a young age, the promotion of QOL as a patient-based factor is a must in treatment programs. Therefore, interventions that involve the patient's family in the process of care provision can effectively improve the patient's QOL. In this regard, such treatment strategies can help patients in improving their QOL if they concentrate on SOC factors, namely comprehensibility, manageability, and meaningfulness.

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