

## Factors Associated with the Effects of a Structured Psychiatric Intervention on Breast Cancer Patients

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The authors developed a structured group intervention for Japanese breast cancer patients. This program is a series of five 90-minute sessions including psycho-education, problem-solving, psychological support, relaxation training, and guided imagery. The aim of this study was to investigate discriminating factors between the improving and non-improving group.

From November 1996 through November 1998, 110 patients participated in this study. Out of 110 patients, 9 failed to complete the five sessions. Nine did not return the questionnaire 6 months later, due to death of 3 individuals and re-location of 6. The remaining 92 patients were analyzed. The subjects were administered the Profile of Mood States (POMS) at entry and 6 months after the completion.

According to the overall change in Total Mood Disturbances scores of the POMS, 69 subjects were categorized into the improving group and 23 into the non-improving group. This study defined several factors which discriminated between the improving and the non-improving group. These factors can be summarized as: (1) 'good relationship with doctors', (2) 'family support/understanding', (3) 'more intervention benefit', and (4) 'no comorbid adjustment disorders' at entry.

Further modification is suggested such as an educational approach for family members to increase their understanding/support and also additional support for patients with adjustment disorders is suggested.

**Key words :** Group intervention, Breast cancer, Adjustment disorder

### INTRODUCTION

Psycho-oncology is a clinical and research field dealing with the psychosocial aspect of cancer. One of the topics of psycho-oncology is psychiatric comorbidity among cancer patients, and several studies [1-3] have demonstrated that 30-40% of cancer patients have psychiatric disorders such as major depression and adjustment disorders. Therefore, emotional support is necessary for cancer patients.

Spiegel *et al.* undertook group psychotherapy for breast cancer patients with remote metastasis for the duration of one year. Their study revealed that breast cancer patients receiving group psychotherapy lived twice as long as controls [4]. In studies by Fawzy *et al.*, malignant melanoma patients

received structured group intervention that consisted of six weekly sessions. Their work demonstrated that such patients show an improvement in emotional discomfort [5], an augmentation of immune function [6], and decrease in recurrence/mortality [7].

One of the authors (T. H.) developed a modified version of structured group intervention for breast cancer patients based upon Fawzy's style of intervention. In a preliminary study [8], structured intervention performed on both an individual and a group basis were effective for improving psychological discomfort among Japanese patients with breast cancer. The patients who received individual intervention were also interested in group sessions, in order to share knowledge of breast cancer. However, patients assigned to group intervention were

hesitant to talk to each other in the earlier sessions.

Consideration of these subjects' impressions led the authors to develop a modified version of structured intervention for cancer patients, which consisted of five weekly sessions. In previous studies [9, 10] a comparison of pre- and post-intervention data demonstrates that this structured intervention is effective for improving psychological discomfort among breast cancer patients. The study outlined here involved a greater number of subjects who were followed up for an extended period of 6 months. Associations between various factors and their effectiveness were investigated.

### SUBJECTS AND METHODS

All patients who were interested in such an intervention after explanation by a surgeon-in-charge were referred to a psychiatrist (T. H.) for a thorough explanation. The patients who gave written consent received a semi-structured interview for psychiatric evaluation according to DSM-IV (Diagnostic and statistical manual of mental disorders, 4th edition) [11], and were informed of a time schedule. The number of patients assigned to each group depended upon the operation schedule, however, the number ranged from 4 to 8. Once a group was formed, the intervention program was performed without changing members except for drop-out. This program is a series of five 90-minute sessions including psycho-education, problem-solving, psychological support, relaxation training and guided imagery [9, 10, 12, 13].

At entry of this study, breast cancer patients underwent the Profile of Mood States (POMS). The POMS is a 65-item inventory to produce scores in several sub-scales of emotional states such as Depression, Lack-of-Vigor, Aggression-Hostility, Fatigue, Tension-Anxiety and Confusion [14]. The inventory was translated into Japanese and its reliability and validity has been confirmed among Japanese subjects [15].

Six months later, subjects were mailed and asked to fill in both the POMS and the questionnaire that was designed for this study. A part of this questionnaire is shown in Table 1.

The POMS, as mentioned above, can produce scores in several sub-scales, all of which

scores are summed up to Total Mood Disturbances (TMD). In this study, TMD scores were compared between pre-intervention and 6 months later, and subjects whose TMD scores decreased are defined as the 'improving group' and the others the 'non-improving group'. Several factors related to the subjects and the data obtained from the questionnaire 6 months later were compared between the two groups.

Statistical analysis was performed by the Mann-Whitney U-test and  $\chi^2$ -test using the Statview 4.5 package. A *p*-value of less than 0.05 was considered as statistically significant.

### RESULTS

From November 1996 through November 1998, 110 patients participated in this study. Out of 110 patients, 9 failed to complete the five sessions and nine did not return the questionnaire 6 months later due to death or re-location. Therefore, the remaining 92 patients were analyzed.

According to the overall change in TMD scores, there was a highly significant difference between the pre-intervention period and 6 months later (Mean scores  $\pm$  S.D. are  $75.7 \pm 26.6$  versus  $60.8 \pm 23.7$ ,  $p < 0.0001$ , *t*-test). Out of 92 subjects, 69 were categorized as improving, i.e. their TMD scores were decreased 6 months later compared with pre-intervention, whilst 23 subjects were non-improving. Subjects in each group are shown in Table 2.

There was no significant difference between these two groups in age, nodal metastasis ( $\chi^2(1) = 0.24$ ,  $p = 0.63$ ), nor operative procedure ( $\chi^2(2) = 0.14$ ,  $p = 0.93$ ). However, there was a significant difference between the two groups in the presence of adjustment disorders ( $\chi^2(1) = 3.90$ ,  $p = 0.48$ ), which means that there were more patients who suffered from adjustment disorders at entry in the non-improving group. Concerning key persons involvement, a  $2 \times 2$   $\chi^2$ -test was performed ( $2 \times 2 =$  improving/non-improving  $\times$  husband + daughter + son/others). There were significantly more patients who thought of their family members (a husband, daughters and sons) as key persons in the improving group ( $\chi^2(1) = 9.10$ ,  $p = 0.002$ ).

The questionnaire mailed 6 months later originally consisted of 10 items with cate-

**Table 1** A part of a Questionnaire mailed six months later**Yes-No Questions**

- 1, Are you regularly visiting your doctor? (Yes, No)
- 2, Are you regularly taking a prescribed medicine? (Yes, No)
- 3, Are you sometimes depressed when thinking about your disease? (Yes, No)
- 4, Do you have a regular contact with patients you met during this intervention? (Yes, No)
- 5, Are you concerned with the information about breast cancer? (Yes, No)
- 6, Are you utilizing social resources? (Yes, No)
- 7, Can you take a public bath (hot springs, etc.) with others? (Yes, No)
- 8, Is there anything you cannot do after your operation? (Yes, No)

**VAS (Visual Analogue Scale) Questions**

- 9, How much did you change attitude toward cancer after this program? (VAS)
- 10, How often did you practice relaxation/imagery at home? (VAS)
- 11, How often do you think of your disease? (VAS)
- 12, How much do you have an adverse reaction of a medicine? (VAS)
- 13, How much do you have a support from your family? (VAS)
- 14, How much do your family understand your disease? (VAS)
- 15, How much are you dissatisfied with your operation wound? (VAS)
- 16, How much do you recover from physical limitations by the operation? (VAS)
- 17, How much are you satisfied with your current treatment? (VAS)
- 18, How much are you satisfied with your doctor? (VAS)
- 19, How much were you satisfied with this program? (VAS)

gorical answers and 11 items with a Visual Analogue Scale (VAS). In this study, the answers of 8 categorical (Yes-No) questions and the 11 VAS questions were compared between the improving group and non-improving group by the  $\chi^2$ -test and the Mann-Whitney U-test, respectively.

Table 3 shows a comparison between the improving group and the non-improving group for the results of 8 Yes-No questions which were conducted 6 months later. There were significantly ( $p = 0.01$ ) more patients who visited their doctors regularly in the improving group compared with the non-improving group. Although not significant, there were also more patients who took medicine regularly ( $p = 0.08$ ) and who were utilizing social resources ( $p = 0.09$ ) in the improving group compared with the non-improving group.

Table 4 shows a comparison of the results of 11 VAS questions. In the improving group, there was a highly significant increase in the number of patients who received support from their families ( $p = 0.003$ ), who practiced relaxation/imagery at home after the program ( $p = 0.013$ ), who were satisfied with their doctors ( $p = 0.041$ )

and whose families understood the patients' disease ( $p = 0.016$ ). Although not significant, there were also more patients who were satisfied with the intervention program ( $p = 0.070$ ) and who changed their attitudes toward cancer after this program ( $p = 0.079$ ) in the improving group compared with the non-improving group.

**DISCUSSION**

Although our previous studies [9, 10] demonstrated the overall effectiveness of this structured intervention program for breast cancer patients, some patients revealed decreasing TMD scores and others not. The aim of this study was to clarify the factors which discriminate between the improving group and the non-improving group.

Factors such as age, operative procedure and presence of lymph node metastasis did not discriminate between the two groups. This indicates that lumpectomy and reconstruction surgery which have been developed in order to improve the patients' QOL (quality of life) were not necessarily effective. Also, lymph node metastasis did not always damage the patients' emotions. These unexpected findings will contribute to the consid-

**Table 2** Subjects

	improving group	No-improving group
Number	69	23
Age	50.7 ± 6.9	50.3 ± 9.9
Marital status		
married	64	18
single	1	1
separated	3	0
divorced	0	2
widowed	1	2
Operation		
only mastectomy	36	11
Lumpectomy	17	6
Mastectomy + Reconstruction	16	6
Nodal metastasis		
+	31	9
-	38	14
Key person		
Husband	49	12
Daughter	9	1
Son	5	2
Friend	3	5
Mother	2	0
Brother	0	1
Sister	1	0
None	0	2
Adjustment disorder at pre-intervention		
+	13	9
-	56	14

**Table 3** Result of Yes-No Questions ( $\chi^2$ -analysis)

	improving group	No-improving group	<i>p</i>
regularly visiting your doctor?	Yes = 69, No = 0	Yes = 21, No = 2	0.01
regularly taking a prescribed medicine?	Yes = 62, No = 2	Yes = 20, No = 3	0.08
depressed when thinking about your disease?	Yes = 40, No = 24	Yes = 16, No = 7	0.54
have a regular contact with patients?	Yes = 54, No = 15	Yes = 17, No = 6	0.67
concerned with the information?	Yes = 64, No = 4	Yes = 23, No = 0	0.23
utilizing social resources?	Yes = 1, No = 67	Yes = 2, No = 21	0.09
take a public bath with others?	Yes = 32, No = 37	Yes = 10, No = 13	0.81
anything you cannot do after your operation?	Yes = 5, No = 35	Yes = 2, No = 18	0.72

**Table 4** Results of VAS Questions (Student's t-analysis)

	improving	No-improving	<i>p</i>
change attitude toward cancer after this program?	69.7 ± 24.3	59.2 ± 25.5	0.079
practice relaxation/imagery at home?	50.2 ± 28.6	32.6 ± 29.3	0.013
think of your disease?	57.9 ± 25.8	50.0 ± 27.7	0.354
have an adverse reaction of a medicine?	28.1 ± 27.6	25.7 ± 24.1	0.703
have a support from your family?	75.3 ± 21.9	58.3 ± 27.2	0.003
do your family understand your disease?	69.5 ± 28.7	53.5 ± 21.7	0.016
dissatisfied with your operation wound?	41.6 ± 30.2	37.8 ± 28.8	0.601
recover from physical limitations by the operation?	82.8 ± 18.4	79.1 ± 19.8	0.425
satisfied with your current treatment?	75.7 ± 20.5	70.4 ± 21.6	0.299
satisfied with your doctor?	40.9 ± 26.6	27.6 ± 26.4	0.041
satisfied with this program?	86.7 ± 15.8	79.3 ± 18.9	0.070

eration of the QOL of breast cancer patients.

According to the previous study, adjustment disorders at entry were improved just after the 5-session intervention program [9, 12]. However, the previous study revealed that the TMD scores of breast cancer patients with adjustment disorders at entry decreased just after the intervention, but became higher up to the pre-intervention scores [12]. This study confirmed that the emotional effect failed to persist for 6 months. Although it is uncertain whether they developed the other psychiatric disorders such as major depression, it is more likely that their adjustment disorders did not improve completely. The adjustment disorder means mild to moderate level of psychiatric disorders which do not meet the criteria of major depression. Such patients cannot be supported by only 5 sessions, therefore further intervention such as additional meetings should be performed for such patients [12, 13].

This study demonstrated that the patients who regularly visited a doctor and took medicine regularly were more likely to have a persisting effect of 5-session intervention. Various studies suggest that noncompliance to treatment regimens is high among cancer patients [16, 17]. Also, the improving group included significantly more patients who were satisfied with their doctors. Derogatis *et*

*al.* reported that long-term survivors seemed to have more negative attitudes toward their treating physicians [18]. Although this seems to be inconsistent with our findings, they suggested in their report that emotional expression was related to better outcome. In general, the establishment of good relationships with primary doctors indicates better prognosis [16]. Roberts CS. *et al.* found that patient perception of physician caring during the diagnostic interview significantly predicted the patient's distress 6 months later [19]. Therefore, these factors are important and can be considered together as 'good relationship with doctors', which is obviously a discriminating factor.

Also, the highly significant finding that more patients thought of their family members (husband, sons and daughters living together) as key persons in the improving group was consistent with other studies demonstrating the importance of family members [16]. This study also revealed that the intervention's effect apparently persisted for patients who received support and understanding from their family. This finding is apparently consistent with earlier studies [16, 20, 21]. This is called 'family support/understanding' factor.

Moreover, this study demonstrated that patients who were satisfied with the intervention, changed their attitudes toward can-

cer, utilized social resources and frequently practiced relaxation/imagery at home were more likely to benefit from a persistent effect of 5-session intervention. It is widely known that breast cancer patients who learn to use more direct and confrontational coping strategies are less distressed than those who use avoidance and denial [16, 22]. Also, social resources and social support lead to better adjustment and longer survival [23]. These strategies and knowledge were provided in the psycho-education/problem-solving part of this structured intervention [10]. These patients learned so much from this intervention program that they changed coping styles, i.e. they received 'more intervention benefit'.

In conclusion, this study demonstrates that several factors discriminate between the improving and non-improving groups. These factors can be summarized as: (1) 'good relationship with doctors', (2) 'family support/understanding', (3) 'more intervention benefit', and (4) 'comorbid adjustment disorders' at entry. Further modification of this program is expected so that it may have greater beneficial effects, such as an educational approach for family members to increase their understanding/support and also additional support for patients with adjustment disorders.

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