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Chapter III

Toward Psychological Intervention for Cancer Patients: Emotional Suppression, Psychological Distress, and Coping with Cancer

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Abstract

Most patients facing cancer experience strong negative emotion including depression, anxiety, and sadness. They have worries including fear of death, fear of cancer, recurrence of cancer, and side-effects of treatment. Moreover, they worry about their family, their job, and their quality of life. In particular, patients who demonstrate the Type C behavior pattern including emotional suppression, and those who show higher anxious preoccupation, fatalistic and helplessness/hopelessness attitudes to cancer tend to manifest higher psychological distress. On the other hand, those who show a fighting spirit to cancer tend to experience lower psychological distress. Therefore, coping patterns under extreme stress are key factors predicting psychological distress and QOL. Our research has suggested that certain coping patterns including emotional suppression is associated with psychological distress before and after disclosure of cancer. Therefore, we proposed that patients need effective psychological intervention immediately after disclosure of the cancer diagnosis. In addition, it is important for patients to continue these interventions during the progress of treatment. The critical aspects of these psychological interventions include encouraging the expression of emotion, inducing fighting spirit, accepting negative emotions, learning how to communicate their emotion appropriately, to encourage better coping with cancer and to decrease psychological

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distress. In this paper we introduce our method and initial trial study of psychological intervention.

Introduction

Most cancer patients experience acute and chronic psychological distress including anxiety, tension, and depression. Some patients report psychological distress since they were tested for cancer or took the initial medical examination. Undergoing testing for cancer is itself a stressful experience for the patients because it determines whether a suspicious area is benign or malignant (Benedict, et al., 1994). Patients given the diagnosis of cancer are greatly shocked and upset. Cancer patients must consider their treatment options in this shocked condition as well as think about their job, family, and future. Even if their treatment has been chosen and initiated, patients worry about fear of cancer, recurrence of cancer, side-effects of treatment, and so on. And survivors also continue to face the uncertainties that survivorship brings: recurrence, other cancers, late effects of treatment, and the potential of a shortened life expectancy (Deimling et al., 2006).

All cancer patients are faced with this highly stressful situation. However, individual patients differ in the extent to which they report feeling psychological distress. Some research investigating these differences has examined the role of psychosocial aspects such as personality traits, coping styles, social support (Chen et al., 1996, Eysenck, 1994; Iwamitsu and Buck, 2005). In this section, we examine the relationship between psychological distress and coping to cancer, and introduce our studies. Also, we introduce some psychological interventions for cancer patients intended to reduce their psychological distress.

Psychological Distress and Coping with Cancer

Development of Studies on Coping with Cancer

Many researchers have been interested in understanding the process of coping with cancer. Descriptive studies have suggested that unconscious defenses such as denial and maladaptive coping patterns are associated with psychological distress (Meyerowitz et al., 1983). Weisman and Worden (1976) systematically studied relationships between patterns of coping and psychological distress. They found that denial, as well as passivity and acceptance were associated with greater vulnerability in cancer patients. On the other hands, Watson et al., (1984) showed that cancer patients' denial was related to less psychological distress. Results of these studies did not agree completely because there were differences in methods of assessment and in conceptualizing the concept of coping.

The Mental Adjustment to Cancer (MAC) Scale was developed as a standard and reliable measure of coping with cancer (Greer and Watson, 1987; Watson et al., 1988). Using semi-structured interview techniques, Greer et al. (1979) found that the psychological responses to cancer could be categorized into four coping styles: denial, fighting sprit, stoic acceptance, and helplessness/hopelessness. Pettingale (1984) and Pettingale et al., (1985) suggested that

these coping categories to cancer relate to the probability of recurrence and prognosis of the disease.

Measuring Coping with Cancer

The developed MAC scale designed for large-scale clinical research consists of 5 scales: fighting spirit, anxious preoccupation, fatalism, helplessness/hopelessness, and avoidance (Greer et al., 1989). Fighting spirit reflects the following: (1) patients fully accept the diagnosis, (2) they use the word 'cancer', (3) they are determined to fight the illness, (4) they try to obtain as much information as possible about it, (5) they adopt an optimistic attitude, (6) they may see the illness as challenge. Anxious preoccupation reflects the following: (1) they react to the diagnosis with marked persistent anxiety and accompanying depression, (2) they actively seek information about cancer but tend to interpret this pessimistically, (3) they worry that aches and pains indicate the spread or recurrence of cancer, (4) they may seek 'cures' from various sources including so-called alternative treatments. Fatalism reflects the following: (1) they accept the diagnosis, (2) they do not seek further information, (3) they adopt a fatalistic attitude. Helplessness/Hopelessness reflects the following: (1) they are engulfed by knowledge of the diagnosis, (2) they find it difficult to think of anything else, (3) their daily life are considerably disrupted by fears concerning cancer and possibly, death, (4) they adopt a wholly pessimistic attitude. Avoidance reflects the following: (1) they refuse to accept the diagnosis of cancer and avoid using the word 'cancer', (2) they admit the diagnosis but deny or minimize the seriousness and any anxiety about it. The MAC scale measures attitudes to cancer and is a self-rating questionnaire consisting of 40 items scored from 1 "not at all" to 4 "very much so".

Relationships between MAC scale and Hospital Anxiety and Depression Scale (HADS) (Watson et al., 1988) have been investigated. The results suggest that the high anxious preoccupation coping pattern was associated with increased depression and anxiety, while fatalism and helplessness/hopelessness coping patterns were associated with increased depression.

Since the MAC scale was developed, many researchers have used it to study relationships between psychological distress and coping with cancer. Watson et al., (1991) found that adopting a fighting spirit was associated with decreased anxiety and depression, whereas helplessness/hopelessness, anxious preoccupation, and fatalism were associated with increased anxiety and depression. Other researchers have also suggested that fighting spirit is important in successfully coping with cancer. In a study of psychological adjustment to advanced breast cancer, fighting spirit was found to be associated with better adjustment (Classen et al., 1996).

Similarly, Akechi et al (1998) studied predictive factors for psychological distress in ambulatory lung cancer patients. Eighty seven lung cancer patients completed scales including the profile of Mood States and MAC scale. Their results showed that Helplessness/Hopelessness as a coping style was predictive of psychological distress. Also, coping with cancer has been related to the psychiatric morbidity among postoperative breast cancer patients. One hundred forty eight breast cancer patients were asked to complete

HADS, MAC scale, current concerns and social support. The psychosocial determinants of psychiatric morbidity were poor coping responses such as low fighting spirit, high anxious preoccupation, high fatalism and high helplessness/hopelessness (Akechi et al., 2001).

Psychological Intervention to Get the Better Coping with Cancer in Adjuvant Psychological Therapy

In these studies, it has been suggested that cancer patients require psychological interventions to achieve better coping styles to cancer and thereby improve their quality of life (QOL). Consequently, adjuvant psychological therapy (APT) was developed as a cognitive behavior treatment designed specifically to improve the QOL of cancer patients (Moorey and Greer, 1989; Greer et al., 1991). APT was based on the cognitive therapy presented by Beck (1976) which alleviated emotional disorders by identifying and correcting the maladaptive thinking. APT was focused on two crucial factors: (1) the personal meaning of cancer, i.e. how the patient perceives cancer and its implications; and (2) the patient's coping ability, i.e. what the patients thinks and does to reduce the threat posed by cancer. This therapy was directed primarily at current problems and taught the patients new coping skills.

Studies in cancer patients have revealed that psychological distress was decreased and coping with cancer improved through receiving APT. Forty four outpatients with various cancers who received APT improved on measures of anxiety, depression, fighting spirit, anxious preoccupation and helplessness/hopelessness comparing to pre-therapy (Greer et al., 1991). Similarly, a prospective randomized controlled study including 174 cancer patients found that APT produced significant improvement in the psychological distress (Greer et al., 1992), Moreover, Moorey et al., (1994) suggested that the psychological efficacy of treatment persisted up to 10 months after the end of intervention.

Suppression of Negative Emotion

Suppression of negative emotion as a coping style has also has been implicated in studies of cancer patients' psychological distress. Several studies reported that suppression of negative emotion might contribute some degree of risk in cancer prognosis (Gross, 1989). Morris et al., (1981) found that women with breast cancer were more likely on semi-structure clinical interviews to report having suppressed anger and anxiety compared with patients with benign breast disease. They developed the Courtauld Emotional Control Scale (CECS) to evaluate the extent of the suppression or control of anger, depression, anxiety and total negative emotion in daily life (Watson and Greer, 1983).

Watson et al. (1991) studied breast cancer patients' emotional distress by using this CECS, and demonstrated: 1) patients who suppress negative emotion had a fatalistic attitude toward their cancer, 2) patients who suppressed anger tended to feel helpless, 3) patients who suppressed anxiety felt higher helplesness. They proposed that these suppressive patients also

should improve by receiving APT by inducing fighting spirit, encouraging expression of emotions, and supporting effective behavioural and cognitive coping techniques.

Iwamitsu et al., (2003) constructed a Japanese version of the CECS and studied relationships between the suppression of negative emotion (anxiety) and psychological distress. Their results indicated that the psychological status of breast cancer patients with anxiety expression was not altered before and after the diagnosis, while emotional distress in breast cancer patients with anxiety suppression was significantly increased after being given the diagnosis. Suppression patients indeed tended to feel more psychological distress than emotional expression patients at the first visit to hospital, after being given the diagnosis, and after discharge, but not after the surgery (Iwamitsu et al., 2005[a]). In particular, suppression patients felt more anxious, depressed and angry than expression patients. That is, cancer patients who suppress the negative emotion of anxiety experienced more psychological distress and took on a passive attitude to the cancer. As these result, they felt psychological distress higher than before. We proposed that they needed to cut this vicious circle and it was important for them to change these suppressive coping patterns (Iwamitsu and Buck, 2005). Moreover, Iwamitsu et al (2005[b]) revealed that the breast cancer patients who suppressed emotion and had chronically high levels of anxiety felt higher levels of psychological distress.

Type C Behavior Pattern

In coping with cancer, Type C behavior pattern proposed by Temoshok (1987) is an essential coping style under stress that is conceptually similar to the style of suppressing negative emotion. Temoshok defined the Type C behavior pattern as involving a "chronically blocked expression of needs and feelings" and there may also be a belief that it is "useless to express one's needs". This coping pattern is characterized as being "cooperative and appeasing, unassertive, patient, unexpressive of negative emotions (particularly anger) and compliant with external authorities" (Temoshok, 1987, p.547-551). The persons who have these behavior patterns seem to be good persons and this pattern seem outwardly to be effective in many respects, because such persons do not like to compete and prefer to settle problems peacefully. However, this coping style fails to cope with high levels of stress, and patients easily develop feelings of hopelessness and helplessness (Eysenck,1994). Renneker (1981) characterized them as being "pathologically nice." Therefore, Type C behavior pattern include (1) a tendency to suppress emotions like anxiety and anger, and a bland surface, and (2) to find it difficult to cope with stress, to develop feelings of hopelessness and helplessness, and finally depression.

Temoshok and Dreher (1992) also proposed promoting skills to modify Type C behavior pattern such as the following: 1) patients should recognize their needs and they should assert their needs, 2) they should consider their negative emotion as their good or rich humanity and should not label their negative emotion on their weakness.

Our Studies: The Relationships among Emotional Suppression, Trait Anxiety, Psychological Distress, and Coping with Cancer

We studied relationships among psychological distress and coping with cancer including emotional suppression and trait anxiety. That is, we examined whether coping with cancer including emotional suppression and trait anxiety were risk factors for psychological distress before and after disclosure, after discharge. In our studies that we have reported, after patients were assigned to either a high or a low emotional suppression group, and to either to a high or a low anxiety group, their psychological distress was compared (Iwamitsu et al., 2005[a]; Iwamitsu et al., 2005[b]). It was insufficient to examine risk factors for psychological distress during the progress of medical treatment including the surgery. Therefore, we reanalyzed these data to identify risk factors on psychological distress during the progress of medical treatment by calculating the correlations between "psychological distress during the progress of medical treatment" and "emotional suppression and trait anxiety". Moreover, we examined the relationship between "psychological distress, emotional suppression, and trait anxiety during the progress of medical treatment" and "coping patterns after discharge" to identify the predicting factors of coping patterns after discharge.

Methods

Participants

The study procedure was explained, and written informed consent was obtained from 22 female patients at their first visit to the outpatient clinic of the department of surgery, Shiga University of Medical Science Hospital from November, 1999 to January, 2002 (age: mean=54.5, range: 40-72). They attended the clinic so that biopsy and histological studies could be performed.

Measures

Profile of Mood States (POMS, Japanese Version : 1990, Yokoyama et al.,) The self-rated POMS includes 65 items rated on a scale from 0, "not at all" to 4, "very much so" that make up six subscales: tension-anxiety, depression-dejection, anger-hostility, vigor-activity, fatigue-inertia, and confusion-bewilderment. As a global measure of affective state, a total mood disturbance (TMD) score was calculated by summing the scores on the six subscales, with vigor-activity negatively weighted.

Manifest Anxiety Scale (MAS, Japanese Version : 1957, Ohmura and Sawa)

The MAS measured the extent of chronic anxiety reactions. This self-rating questionnaire consists of 65-items.

Courtauld Emotional Control Scale (CECS, Japanese Version : 2003, Iwamitsu et al.,)

The Japanese version of this scale is a self-rating questionnaire consisting of 17 items (six items in anger suppression, five items in depression suppression, and six items in anxiety suppression) scored from 1, "not at all", to 4, "very much so" (see "suppression of negative emotion"). The original version of CECS included 21 items.

Mental Adjustment to Cancer Scale (MAC scale, Japanese version *: 1997,* Akechi et al.,)

The MAC scale was explained previously (see "measuring coping with cancer").

Procedures

The 22 patients were asked to complete the POMS, CECS, and MAS instruments at their first visit to the outpatient clinic. At the second visit, they were informed of the results of the diagnosis after biopsy and histological investigation. Then, they were asked to fill out POMS immediately after being given the diagnosis, POMS and MAC scale after discharged.

Data Analysis

We calculated each score of POMS, CECS, MAS, and MAC scale. We calculated the Pearson correlation coefficients between "POMS scores at first visit, after diagnosis, and after discharge" and "each score of CECS, MAS at first visit". Next, we calculated the correlation coefficients between "the POMS, CECS, MAS scores at first visit, after diagnosis, and after discharge" and "scores of MAC scale after discharge"

Results

Psychological Distress, Emotional Suppression and Trait Anxiety

To examine the relationship between "POMS scores at first visit, after diagnosis, and after discharge" and scores of CECS and MAS at first visit, correlation coefficients were calculated. Table 1 – Table 3 show the relationships between POMS at each session and CECS and MAS at the first visit to hospital. Results indicated that the MAS was significantly correlated with many sub-scale scores on the POMS at each session (r>.428, p<.05). The total score of the CECS was positively correlated with tension-anxiety and Total Mood Disturbances on POMS, and was negatively correlated with vigor at first visit to hospital (r>±.449, p<.05). Anger suppression was also significantly correlated with tension-anxiety, depression, Total Mood Disturbances of POMS at first visit; and anxiety suppression was significantly correlated with vigor and Total Mood Disturbances of POMS at first visit (r>±.395, p<.05). Similarly, the total CECS score was significantly correlated with tension-anxiety, depression, vigor, fatigue, confusion, and Total Mood Disturbances on POMS after disclosure (r>±.454, p<.05). Each suppression scale was also correlated with depression and confusion after disclosure significantly (r>.345, p<.05). Anxiety suppression was

significantly correlated with tension-anxiety, depression, vigor, and Total Mood Disturbances of POMS after discharge (r>±.409, p<.05).

Table 1. Peason correlation coefficients for MAS, CECS and POMS at first visit

	POMS (Before Disclosure)						
	Tension-Anxiety	Depression	Anger-Hostility	Vigor	Fatigue	Confusion	TMD
Manifest Anxiety Scale	0.301	0.512 **	0.772 **	-0.301	0.765 **	0.560 **	0.661 **
Courtauld Emotional Control Scale							
Anger	0.620 **	0.403 *	0.291	-0.136	0.133	0.237	0.395 *
Depression	0.287	0.135	0.080	-0.420 *	-0.192	0.163	0.185
Anxiety	0.294	0.321	0.296	-0.556 **	0.277	0.324	0.426 *
Total	0.523 **	0.380	0.298	-0.502 *	0.108	0.324	0.449 *

*p <0.05, **p <0.01.

Table 2. Peason correlation coefficients for MAS, CECS at first visit and POMS after disclosure

	POMS (After Disclosure)						
	Tension-Anxiety	Depression	Anger-Hostility	Vigor	Fatigue	Confusion	TMD
Manifest Anxiety Scale	0.351	0.325	0.434 *	-0.301 *	0.535 *	0.428 *	0.466 *
Courtauld Emotional Control Scale							
Anger	0.530 **	0.404 *	0.230	-0.255	0.375	0.511 **	0.460 *
Depression	0.364	0.404 *	0.262	-0.418 *	0.267	0.345 *	0.415 *
Anxiety	0.366	0.431 *	0.358	-0.355	0.530 **	0.575 **	0.512 **
Total	0.552 **	0.547 **	0.379	-0.454 *	0.526 **	0.637 **	0.614 **

Table 3. Peason correlation coefficients for MAS, CECS at first visit and POMS after discharge

	POMS (After Discharge)						
	Tension-Anxiety	Depression	Anger-Hostility	Vigor	Fatigue	Confusion	TMD
Manifest Anxiety Scale	0.508 **	0.466 *	0.613 **	-0.513 **	0.373	0.603 **	0.602 **
Courtauld Emotional Control Scale							
Anger	0.244	-0.018	0.097	0.268	-0.408 *	-0.066	-0.081
Depression	-0.043	-0.115	0.020	-0.080	-0.176	0.008	-0.081
Anxiety	0.426 *	0.409 *	0.353	-0.504 *	0.259	0.539	0.478 *
Total	0.288	0.140	0.218	-0.097	-0.119	0.234	0.162

*p <0.05, **p <0.01.

Identifying the Predicting Factors of Coping Patterns after Discharge

To examine relationships between "CECS and MAS at first visit, the POMS at each session," and "MAC scale after discharge", correlation coefficients were calculated. The anger-hostility score of POMS at first visit was correlated with the Helplessness/Hopelessness score (r=.398, p>.05). The Confusion score of POMS at first visit was correlated with the Helplessness/Hopelessness score (r=.423, p>.05) (see table 4). On table 5, the POMS vigor score after disclosure was correlated with fatalism and avoidance (r>.414, p>.05). The MAC scale Avoidance score was correlated with confusion and Total Mood Disturbances of POMS after disclosure negatively (r> - .424, p>.05). On table 6, the fighting spirit score of the MAC scale was positively correlated with the POMS vigor score after discharge (r=.546, p>.01), and negatively correlated with POMS fatigue, confusion, and Total Mood Disturbances scores after discharge (r> - .433, p>.05). The MAC scale Helplessness/Hopelessness score was negatively correlated with the POMS vigor score after discharge (r= - .428, p>.01), and positively correlated with POMS depression, fatigue, confusion, and total mood disturbance scores after discharge (r>.449, p>.05). Scores of CECS and MAS at first visit were not correlated with the MAC scale.

Table 4. Peason correlation coefficients for POMS at first visit and MAC scale after discharge

	Mental Adjustment toCancer Scale				
	Fighting Spirit	Helplessness/ Hopelessness	Anxious Preoccupation	Fatalism	Avoidance
POMS (First Visit)					
Tension-Anxiety	0.016	-0.090	0.352	0.189	-0.217
Depression-Dejection	-0.181	0.149	0.381	0.125	-0.234
Anger-Hostility	-0.297	0.398 *	0.276	-0.122	-0.284
Vigor	0.282	0.024	0.062	0.045	0.184
Fatigue	-0.312	0.324	0.086	-0.077	-0.280
Confusion	-0.078	0.180	0.423 *	0.089	-0.157
TMD	-0.244	0.194	0.299	0.033	-0.287

Table 5. Peason correlation coefficients for POMS after disclosure and MAC scale after discharge

	Mental Adjustment toCancer Scale				
	Fighting Spirit	Helplessness/ Hopelessness	Anxious Preoccupation	Fatalism	Avoidance
POMS (After Surgery)					
Tension-Anxiety	0.133	-0.363	-0.218	-0.348	-0.384
Depression-Dejection	0.111	-0.065	-0.019	-0.263	-0.363
Anger-Hostility	0.010	-0.081	0.007	-0.287	-0.372
Vigor	0.323	-0.042	0.189	0.414 *	0.417 *
Fatigue	-0.128	-0.035	-0.057	-0.322	-0.367
Confusion	-0.031	0.173	-0.035	-0.120	-0.424 *
TMD	-0.044	-0.086	-0.113	-0.356	-0.449 *

Table 6. Peason correlation coefficients for POMS and MAC scale after discharge

	Mental Adjustment toCancer Scale				
	Fighting Spirit	Helplessness/ Hopelessness	Anxious Preoccupation	Fatalism	Avoidance
POMS (After Discharge)					
Tension-Anxiety	-0.170	0.403	0.145	0.107	-0.203
Depression-Dejection	-0.385	0.541 **	0.236	0.173	-0.171
Anger-Hostility	-0.307	0.349	0.290	-0.085	-0.318
Vigor	0.546 **	-0.428 *	0.111	0.174	0.288
Fatigue	-0.551**	0.465 *	-0.049	-0.235	-0.212
Confusion	-0.433*	0.449 *	0.011	-0.046	-0.173
TMD	-0.469*	0.524 **	0.132	-0.037	-0.270

*p <0.05, **p <0.01.

Discussions

Our study's aim was to identify the risk factors on psychological distress and predicting factors coping patterns after discharge. Our results revealed that (1) trait anxiety and emotional suppression were risk factors for psychological distress. Especially, anxiety suppression was risk factor for psychological distress after discharge. Our results supported the emotional suppression study on Watson et al (1991) and our past studies (Iwamitsu et al., 2003; Iwamitsu et al., 2005[a]). A high level of trait anxiety as a personality characteristic is also a key factor in psychological distress as well as Iwamitsu, et al., (2005[b]) have reported.

Next, our results founded that psychological distress before and after disclosure were the predicting factors on coping patterns after discharge. That is, if patients have higher psychological distress during the progress of medical treatment, their coping patterns might cause maladjustment after discharge. Therefore cancer patients who have higher psychological distress should receive psychological intervention to support adaptive coping patterns.

Although emotional suppression and trait anxiety did not predict coping patterns after discharge, Watson et al., (1991) reported that cancer patients with emotional suppression tend to adopt an attitude of fatalism and helplessness in relation to cancer. Temoshok (1987) also suggested that emotional suppression may be linked to helplessness or hopelessness in cancer patients. There were our two limitations which may explain why our results did not support their findings: (1) we measured the CECS only at first visit to hospital, and did not measure it after disclosure and discharge. (2) The number participant patients was small. Therefore, we continue the study to examine these points in the future.

In summary, cancer patients—especially those who suppress negative emotion, show a high level of trait anxiety, and high psychological distress—need psychological interventions encouraging them to express negative emotion, decrease anxiety, and improve coping. Iwamitsu et al., (2005[b]) proposed that disclosure of the diagnosis is a point of overwhelming stress and a critical time to intervene with treatment. We suggested that cancer patients should receive the psychological intervention immediately after the disclosure of the

diagnosis. And it is also essential for them to receive genuine social and emotional support, and feedback to deal adequately with the negative and unfamiliar feelings associated with their serious illness (Reardon and Buck, 1989).

Our Trial Study of Psychological Intervention for Cancer Patients with Suppressed Emotion

We have suggested that to maintain their psychological adjustment in the face of the disease, cancer patients who suppress emotion and experience chronic high anxiety need psychological intervention including encouraging the expression of negative emotion immediately after the disclosure of the diagnosis of breast cancer (Iwamitsu and Buck, 2005). Therefore, we attempted to do the psychological intervention for breast cancer patients who suppress negative emotion on the basis of the cognitive and behavior therapy, APT, and skills to modify the Type C behavior pattern. We introduce the methods of psychological intervention and these results.

Methods

Participants and Procedures

Six early-stage breast cancer patients (age: mean=56.8, range: 42-66) received psychological interventions after disclosure, during hospitalization, after surgery, and after discharge. Their written informed consent was obtained after explaining the study procedure. They were measured the CECS instruments at their first visit to the outpatient clinic of the department of surgery, Shiga University of Medical Science Hospital from October, 2001 to February, 2003. Their score of the CECS was higher than the median value of CECS reported in Iwamitsu et al., (2005[a]). Then, they were asked to fill out the POMS immediately after being given the diagnosis, after disclosure, and after discharge.

Measures

The measures were the CECS and POMS scales used in the study previously described.

Psychological Intervention

Figure 1 shows the time schedule of psychological intervention. We asked patients to complete the POMS, CECS and so on at their first visit. Then, we met with patients who had high CECS scores immediately after disclosure, during hospitalization, after surgery, and after discharge. Each session of psychological intervention lasted 30-40 minutes. Our attitudes were consistently supportive of patients. The main skills encouraged in the

psychological intervention involved cognitive and behavior therapy, APT, and skills to modify Type C.

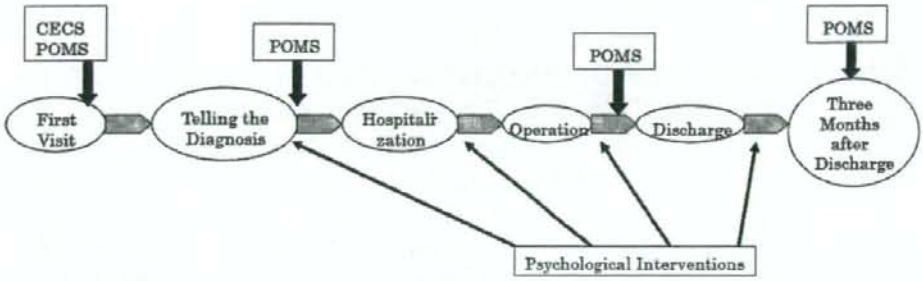

Figure 1. Procedures of psychological intervention.

After disclosure, we asked them to talk about the course of illness until they were told the diagnosis, and their current thinking and moods including fear, anxiety, etc, when thinking of their disease. As interventions we advised them with messages such as the following: (1) even though they might feel anger, anxiety, and sadness, their psychological response was the normal response of cancer patients who were given the diagnosis, (2) these emotions did not reflect their mental weakness and mental vulnerabilities (3) they should not consider anger, anxiety, and sadness as "negative" emotions, but as normal and expected. That is, we attempted to give them confidence that they should accept their emotions and express them freely.

Before surgery, we asked them to talk about their emotions and thinking before entering the hospital. As we did after disclosure, we again guaranteed that they could talk about their emotions freely, and we told them that they should not suppress their emotions. We confirmed the degree of the patients' understanding of this treatment.

After surgery, patients were asked to talk about their current thinking and emotions of disease. Sometimes we tried to modify their distorted thinking about the disease, for instance, that their life was at the end due to cancer, or that the cause of the cancer was punishment for them. And, we talked concretely about their living after discharge, especially their concerns and problems, and who they had been before having cancer. We encouraged them to modify suppressive patterns of coping.

After discharge, patients were asked to talk about their thinking and emotion of cancer since discharge. We encouraged them to tell other people of their needs, their dissatisfactions, their frustrations, and their negative emotions. They were asked to think about their coping with stress, and tell about their changed coping patterns before and after having cancer. Also, they were asked to think about the differences in their thinking and emotions before and after having cancer. Finally, we advised them that they should live more comfortably and relax.

Data Analyses

We used 12 participants who suppressed negative emotion in our past study (Iwamitsu et al., 2005[a]) as control group. Then, to comparing the intervention group to this control group, we conducted two-way analysis of variance (two-way ANOVA) [group (intervention group vs control group) × session (at first visit, after diagnosis, after surgery, after discharge)].

Results and Discussions

Figure 2 shows changes in the Total Mood Disturbance scores of the POMS in the intervention and control groups. We compared the Total Mood Disturbances of POMS on the 4 sessions between the intervention group and control group. The Total Mood Disturbances score in the intervention group was lower than that in the control group ($F(1,16)=3.37$, $p>.10$). We found that patients with emotional suppression decreased their psychological distress by receiving the intervention, although the size of the intervention group was small. The main points on our intervention were to help the patients to identify their emotion and thinking and to teach them how to communicate to others appropriately. They should not suppress their needs and dissatisfaction. Then, they had to learn appropriate coping patterns. Also, they should change the belief that suppressing negative emotion is the best way to cope with cancer (Iwamitsu et al., 2005b). As Reardon and Buck (1989) pointed out, patients who suppress negative emotion may need emotional education to learn how to communicate their negative and positive emotion accurately under extreme stress. Therefore, we did not advise patients to express negative emotions extremely, or to the exclusion of more positive emotion. In particular, we did not force them to express negative emotions. Forcing them to express their negative emotion inappropriately might actually increase their psychological distress.

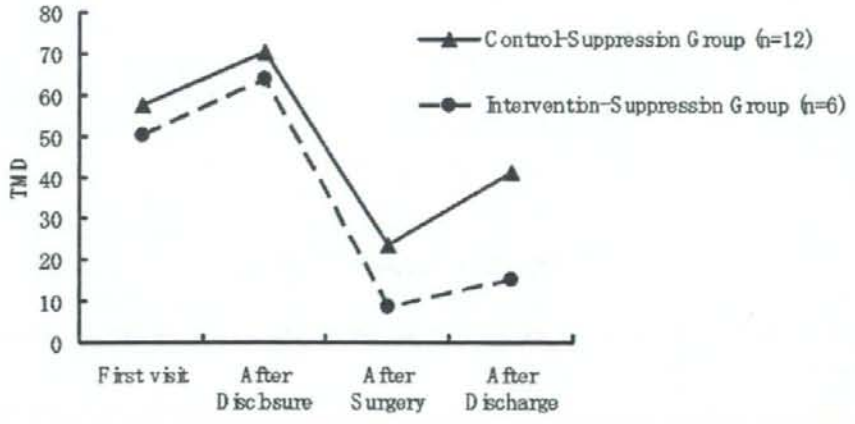

Figure 2. Changes in the Total Mood Disturbance scores of POMS in intervention group and control group.

On the other points of our intervention, we tried to accept their negative emotion, thinking, and coping patterns they have used. Our attitude was consistently supportive for patients and we told them that they did not need to deny their usual coping patterns including emotional suppression. They should accept their lives, their coping patterns, and their thinking before they had cancer. It is important for them to acquire better and appropriate coping patterns under stressful situations with having cancer from now, to have a good time and to relax in their daily lives.

Summary

We studied psychological distress and coping to cancer including the role of emotional suppression. Most patients faced to cancer feel negative emotion such as depression, anxiety, and sadness. They have worries including fear of death, fear of cancer, recurrence of cancer, and side-effects of treatment. Moreover, they generally worry about their family, job, and QOL. Particularly, patients showing the Type C behavior pattern including emotional suppression, and those who have higher anxious preoccupation, fatalism, and a helpless/hopeless attitude to cancer, report higher psychological distress. On the other hands, those who have a fighting spirit attitude to cancer report lower psychological distress. Therefore, coping patterns under stress are key factors predicting psychological distress and QOL. Recently, Bardwell et al., (2006) revealed that depressive symptoms in women treated for early-stage breast cancer are strongly linked with many subjective psychological variables; that is, coping with cancer or attitude to cancer including ambivalence over expressing negative emotion, poorer social functioning, and less optimism. Therefore, patients who have inappropriate coping patterns and distorted thinking to cancer need to receive psychological intervention immediately after giving the disclosure of the cancer diagnosis. Moreover, it is essential that they continue these interventions during the progress of treatment. We report that cancer patients who receive psychological interventions including expressing emotion, accepting their negative emotion, learning how to communicate their emotion appropriately, and getting the better coping with cancer decreased their psychological distress. Finally, these interventions based upon cognitive and behavior therapy might be effective for early-stage cancer patients as this study suggests. In the future, we hope that these intervention studies for various cancer patients will be further developed, refined, and tested on larger patient populations.

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