

Original Article

## Effect of Group Psychotherapy for Promotion of Hope on Positive Emotion in Cancer Patients

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**Objectives:** The purpose of this study is to develop a program of group psychotherapy named “the promotion of hope program (PHP)” that will provide effective emotional support for cancer patients.

**Methods:** In order to develop a group counseling program for cancer patients, this study utilized reality therapy based on Oriental medicine theory which is the mind affect the body. We established four steps for making positive changes to individual behavior: creating soil for hope, watering hope, sprouting hope, and the blossoming flower of hope. To verify the effectiveness of the program, we conducted a comparative clinical trial. Patients were divided into two groups by unrestricted randomization: the intervention group (n=20) and the control group (n=17). The members of each group did not exceed seven patients. We divided the trial period into three sections. The intervention group received group psychotherapy twice a week for 4 weeks. The control group watched hope-related videos and talked about members for two hours each week for four weeks. We evaluated the scale of anxiety and depression, self-esteem, and hope, both before and after the examination.

**Results:** PHP decreased the level of anxiety and depression in the intervention group (1.21 vs. 0.75,  $p<0.01$ ). PHP also improved the level of both self esteem (2.80 vs. 3.34,  $p<0.01$ ) and hope (2.69 vs. 3.23,  $p<0.01$ ). In contrast, the control group showed no interval change at any point in time.

**Conclusion:** Following the above results, PHP can be seen as an effective program for helping cancer patients to increase positive emotions and behaviors while reducing negative thoughts.

**Key Words :** Cancer, Depression, Psychotherapy, Reality therapy, Oriental medicine

### Introduction

Recently, the role of psychotherapy in treating various diseases has been emphasized. No longer confined to the psychiatry department, psychotherapy is now being recognized as an essential component of the comprehensive care for cancer<sup>1-2</sup>.

Cancer patients often experience psychiatric problems such as anxiety and depression during the course of their illness. Not surprisingly, psychiatric disorders and periods of emotional distress are common among

cancer patients, lowering their quality of life. Moreover, doctors often fail to recognize emotional distress in their patients<sup>3-8</sup>. The need for emotional support for cancer patients cannot be overemphasized.

Current evidence indicates that various psychotherapies are helpful for treating emotional distress in cancer patients. However, there is not enough evidence to confirm the efficacy of psychotherapy<sup>9</sup>. Also, we need more systemic and effective counseling programs for controlling negative emotions in cancer patients.

Reality therapy, one approach to psychotherapy

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and counseling, was developed by Dr. William Glasser in 1965. Reality therapy, which is based on choice theory, approaches counseling and problem-solving by focusing on the patient's "here-and-now" to determine how to create a better future<sup>10)</sup>. Reality therapy is also a practical method of helping patients take better control of their lives. It assists people in identifying what they want, and helps them analyze their own behaviors<sup>11)</sup>.

Traditionally, the concept of health care in Oriental medicine emphasizes the relationship between the state of patient's mind and body. Oriental medicine emphasizes the effect of human emotion in the course of disease progression<sup>12)</sup>. For instance, Ii-Geug-Byun-Qi therapy (移精變氣療法) is one of these concepts focused on the harmony of mind and body. The practical methods of Ii-Geug-Byun-Qi are to refresh patient's emotional condition by counseling and to solve patient's problem by explaining of some questions<sup>13)</sup>.

We believed that reality therapy based on Oriental medicine theory such as Ii-Geug-Byun-Qi therapy would be very helpful for many cancer patients. Thus, in order to develop a program for group psychotherapy with reality therapy, we conducted two pilot clinical studies for cancer patients in 2007 and 2008<sup>14-15)</sup>. The two studies showed meaningful results. We have confidence that group counseling applying choice theory helps to provide positive emotional support for cancer patients.

The aim of this study is to develop and confirm the efficacy of a program of group psychotherapy named "the promotion of hope program" (PHP) which was developed to provide effective emotional support for cancer patients. During the study periods, we observed the scale of anxiety and depression, self esteem, and hope.

## Materials and Methods

### 1. Constitution of PHP

PHP is a group counseling program based on choice theory and reality therapy. PHP is designed to improve the lives of patients as well as to fulfill their real wants and needs. PHP comprises four steps and eight sessions during four weeks.

The first step is to understand the five basic needs of all humans and the concept of choice. Also in this step, patients come to understand that hope can be realizable by choice. The second step is to determine the patients' realistic wants in order to improve the quality of their world by satisfying their needs. In this step, patients can set up a goal of hope. The third step is to understand the human behavior system and total behavior. Patients can achieve the results by acting. In this step, we can check on the achievable goal and set up a meaningful human relationship. The fourth step is to understand the relationship between choice and behavior, as well as choice and responsibility. In this step, patients can directly choose their thoughts and acts. Patients can be confident about a positive future.

The constitutions of PHP are given in Table 1.

### 2. Patients

This study was approved by the Institutional Review Board at Konyang University Hospital (08-42). Formally trained counselor and Oriental medicine physicians took into counseling of the patient's psychological condition and personal history in their diagnosis of cancer. All patients entered the trial after written informed consent. From January until June 2009, cancer patients between the ages of 20 and 80 were included in the study. We also required that their Eastern Cooperative Oncology Group (ECOG) performance status be less than two. Patients with predictable survival of less than three months were excluded, as were patients with evidence of stage IV (TNM staging system) or

**Table 1.** Constitution of PHP

Step	Propulsive strategy	Sessions	Theoretical basis of reality therapy
1. Making soil of hope	Find a clue of hope	1	Concept of choice (hope)
		2	Five basic needs
2. Watering of hope	Having belief that life is meaningful Set up a goal of hope	3	Explore real want
		4	Quality world
3. Sprouting of hope	Realize results of acting Check achievable goal Set up a meaningful human relationship	5	Behavior system
		6	Total behavior
		7	Choice and behavior
4. Blossom flower of hope	Have confidence of a positive future	8	Choice and responsibility

severe bone marrow failure requiring medical treatment.

After informed consent, patients were divided into two groups by unrestricted randomization: the intervention group (n=20) and the control group (n=17). Neither group had more than seven patients. We divided the trial period into three sections. The intervention group received group psychotherapy twice for two hours in each week for four weeks. The control group watched hope-related videos and talked about members twice for two hours in each week for four weeks. The procedure of the study is given in Fig. 1.

### 3. Evaluation of anxiety and depression, self-esteem, and hope

All tests were done before and after four weeks of intervention. We also followed the examination of ten patients from the intervention group for six additional months after the end of the trial.

We evaluated the degree of anxiety and depression using the Hospital Anxiety and Depression Scale (HADS) developed by Zigmond in 1983<sup>16)</sup>. HADS consists of 14 self-administered items, each of which is scored on a four-point scale. A higher score implies a more anxious and depressive state. The value of the Cronbach- $\alpha$  coefficient was 0.8884 in this study. We evaluated the degree of self-esteem using the Self-Esteem Questionnaire (SEQ) developed by Rosenberg in 1965<sup>17)</sup>. The SEQ is composed of ten self-administered items, each of which is scored on a four-point scale. A higher score implies a higher degree of self-esteem.

The value of the Cronbach- $\alpha$  measure of reliability was 0.7842 in this study. We evaluated the degree of hope using the Hope Scale (HS) developed by Youn in 2004<sup>18)</sup>. HS is composed of 12 self-administered items, each of which is scored on a four-point scale. A higher score implies a more hopeful state. The value of the Cronbach- $\alpha$  coefficient was 0.9365 in this study.

### 4. Statistical methods

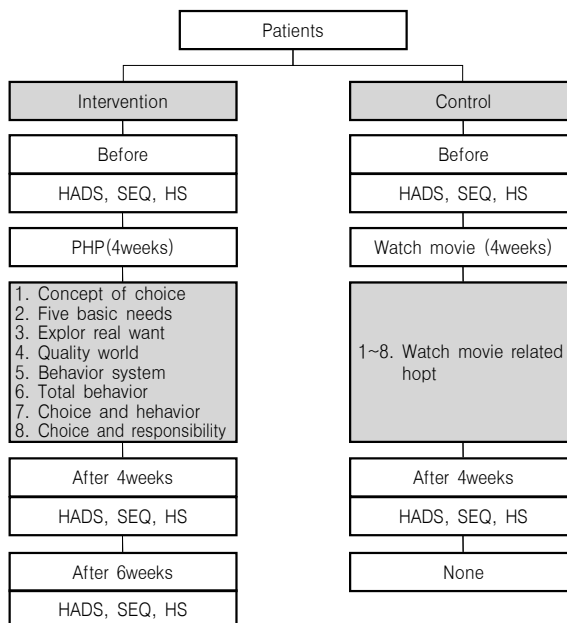
SPSS 11.5 was used in this study. The homogeneity between groups was performed by one-way ANOVA. The results of three factors (anxiety and depression, self-esteem, and hope) were analyzed both before and after the intervention by paired t-test. A *p* value of less than 0.05 was considered statistically significant.

## Results

Thirty seven patients met the inclusion criteria. The patients were 2 men and 35 women, with ages ranging between 30 and 76 years old. Detailed demographic and tumor characteristics are given in Table 2. There were no adverse events and drop-outs during the trial period.

### 1. Homogeneity between the groups

We examined the homogeneity between the groups both before and after the study. The two groups



**Fig. 1.** Procedure of Study

The intervention group received group psychotherapy twice a week for 4 weeks. To verify the effect of PHP, we evaluated degree of anxiety and depression using Hospital anxiety and depression scale (HADS), self-esteem using Self-esteem Questionnaire (SEQ), and hope using Hope scale (HS). All tests were done before and after intervention 4 weeks. We also followed examination 10 patients of intervention group at 6 months after end point. But, we could not examine the follow-up after the completion of the trial in the control group.

**Table 2.** General Characteristics of the Patients

Characteristics	Intervention group		Control group	
	n	%	n	%
Age (mean ± SD)	51.40 ± 9.81		49.59 ± 10.76	
Gender	Female 20 Male 0		Female 15 Male 2	
Educational level				
Less than college degree	16	80.0	12	70.6
Completed college degree	4	20.0	4	23.5
Post-college degree			1	5.9
Income level				
<\$19,999	10	50.0	10	58.8
\$20,000-\$39,999	6	30.0	3	17.6
>\$40,000	4	20.0	4	23.6
Cancer site				
Breast cancer	16	80.0	14	82.4
Brain tumor	1	5.0		
Colon cancer	2	10.0		
Liver cancer	1	5.0		
Rectal cancer			1	5.9
Pancreatic cancer			2	11.7
Stage at time of diagnosis				
I	9	45.0	9	52.9
II	7	35.0	1	5.9
III	4	20.0	6	35.3
IV			1	5.9
Tumor status				
Tumor burden	0	0.0	3	17.6
Remission status	20	100.0	14	82.4

showed no difference before the application of the program. However, the two groups showed meaningful difference after the application of PHP. The detailed results are given in Table 3.

## 2. Changes of hope, self-esteem, anxiety, and depression in the groups

After applying the PHP, the degree of anxiety and depression decreased compared with the basal line ( $M=1.21$  vs.  $M=0.75$ ,  $p<0.01$ ). The ten patients followed after the end of intervention maintained their decreased status for six months after PHP ended ( $M=1.11$  vs.  $M=0.74$ ,  $p<0.10$ ). In terms of self-esteem, the intervention group showed a meaningful increase compared with the basal line ( $M=2.80$  vs.  $M=3.34$ ,  $p<0.01$ ). Once again, our follow-up with the same ten patients showed that they maintained their improvement ( $M=2.80$  vs.  $M=3.33$ ,  $p<0.05$ ). In terms of hope, the intervention group also improved at both the post-test ( $M=2.69$  vs.  $M=3.23$ ,  $p<0.01$ ) and follow-up ( $M=2.64$ , vs.  $M=3.08$ ,  $p<0.10$ ). In contrast, the control group showed no interval change in anxiety and depression, self-esteem, or hope, at any point in time. The detailed results are given in Table 4.

## Discussion

Over the past few decades, the number of studies on the psychological problems of cancer patients has

been increasing<sup>19</sup>. Although debate over the efficacy of psychotherapy continues, many people have asserted its necessity<sup>20-21</sup>. Studies have been shown that well designed counseling can be effective in controlling distress, self-concept, fatigue, etc...<sup>22-23</sup>. Also, it is believed that patients who actively cope and maintain a fighting spirit may live longer than those who simply surrender to helplessness and hopelessness<sup>24</sup>. We think that changing individual coping style, reducing distress, and increasing personal problem-solving skills are important factors in the course of cancer care. We also believe that these psychological changes affect human body with cancer in the viewpoint of Li-Geug-Byun-Qi. In Oriental medicine, the internal organs and body respond to mental reaction according to traditional theory of the Five Elements (五行)<sup>12</sup>.

To help cancer patients will be become positive mentality; we applied reality therapy based on Oriental medicine theory which is the mind affect the body to the design of PHP. Reality therapy assists in discovering what patients really want and what they are currently doing. PHP helps patients to make a living by gratifying their needs and forging a positive design for their future life<sup>10-11</sup>.

In the present study, PHP can be divided into conceptual and substantial characteristics. The conceptual characteristics are as follows; 1) concept of choosing hope, 2) concept of successful identity, 3) concept of

**Table 3.** Comparison of Homogeneity between the Groups

Item	Group	Pre-test			Post-test			Follow-up
		Mean $\pm$ SD	t	p	Mean $\pm$ SD	t	p	Mean $\pm$ SD
Anxiety	I	1.21 $\pm$ 0.64	0.896	0.376	0.75 $\pm$ 0.33	-2.968	0.005	0.74 $\pm$ 0.31
Depression	C	1.05 $\pm$ 0.40			1.10 $\pm$ 0.40			No
Self-esteem	I	2.80 $\pm$ 0.41	-0.493	0.625	3.34 $\pm$ 0.34	3.405	0.002	3.33 $\pm$ 0.38
	C	2.87 $\pm$ 0.46			2.84 $\pm$ 0.54			No
Hope	I	2.70 $\pm$ 0.43	-0.191	0.850	3.23 $\pm$ 0.54	2.231	0.027	3.08 $\pm$ 0.58
	C	2.73 $\pm$ 0.52			2.78 $\pm$ 0.59			No

The homogeneity between groups was performed by one-way ANOVA. A *p* value of less than 0.05 was considered statistically significant. Data are expressed as means  $\pm$  SD. I: Intervention group, C: Control group

**Table 4.** Changes of Hope, Self esteem, Anxiety, and Depression in the Groups

Item	Group	Pretest	Posttest			Follow-up (Pre)	Follow-up (Post)		
		Mean ± SD	Mean ±SD	t	p	Mean ± SD	Mean ± SD	t	p
Anxiety and Depression	I	1.21 ±0.64	0.75 ±0.33	3.217	0.005	1.11±0.47	0.74 ±0.31	2.120	0.063
	C	1.05 ±0.40	1.10 ±0.40	-0.850	0.408	No			
Self-esteem	I	2.80 ±0.41	3.34 ±0.33	-4.536	0.000	2.80±0.36	3.33±0.38	-2.932	0.017
	C	2.87 ±0.46	2.84 ±0.54	0.599	0.557	No			
Hope	I	2.69 ±0.45	3.23 ±0.54	-4.497	0.000	2.64 ±0.48	3.08±0.58	-2.108	0.064
	C	2.73 ±0.52	2.78 ±0.59	-1.112	0.282	No			

The results of three factors (anxiety and depression, self-esteem, and hope) were analyzed both before and after the intervention by paired t-test. A *p* value of less than 0.05 was considered statistically significant. Data are expressed as means ± SD. I: Intervention group, C: Control group

behavioral change. The substantial characteristics are as follows; 1) practice and evaluation to change behavior, 2) reinforcement of hopeful message through audio-visual material, 3) internalization of hope realization through reciting of hope-related poem, 4) practice of game and stretching, 5) doing homework to experience successful identity, 6) doing exercise for roles applied to real life.

PHP comprises four steps; “creating soil for hope”, “watering hope”, “sprouting hope”, and “the blossoming flower of hope”. “The creating soil for hope” step helps patients to understand the importance of hope. Also in this step, patients come to understand that hope can be realizable by choice. The “watering of hope” step helps identify patients’ realistic wants in order to improve the quality of their world by satisfying their needs. The “sprouting of hope” step changes existing inefficient behavior into effective behavior in order to create hope. Patients can achieve results of change by acting. The “blossoming flower of hope” step helps patients to understand that they are the main agent of their own hope. In this step, patients can directly choose their thoughts and take responsibility for the results of their choices.

Through the application of PHP, we confirmed the following results. First, PHP decreased anxiety and depression to a degree that is statistically significant. Because patients’ personal characteristics (i.e. age, gender, educational level, income level, remission

status) can influence the study results, we examined the homogeneity between the groups before the study. The two groups showed no difference before the application of program. This homogeneity between the groups excludes the influence of personal characteristics, thereby confirming the positive effects of PHP. Second, PHP improved the degree of self-esteem and hope. The positive results were further confirmed by the follow-up which we conducted six months after treatment ended. The results imply that PHP has a long-term effect through the positive change of thought and behavior.

As the results above demonstrate, PHP can be an effective program for increasing the positive emotions and behaviors and reducing the negative thoughts of cancer patients. The weak point of our study is that the number of patients being reported is relatively small, such that no firm statistical conclusions can be drawn. Also, we could not examine the follow-up after the completion of the trial in the control group. Further investigation is required for more definitive conclusions.

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