

## Effects of a Health Promotion Program Including Laughter on the Interpersonal Relationships, Self-esteem, Depression and Health Risk Behaviors of Patients with Mental Disorders

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### Abstract

*This study examined a health promotion program consisting of laughter, health education, and dancing for a total of 24 weeks, from August to December of 2014. The subjects were 16 patients with mental disorders registered and cared for at a mental health promotion center. This study determined the influence of the health promotion program on the patients' interpersonal relationships, self-esteem, depression, and health risk behaviors. Following the completion of the program, the patients' scores on interpersonal relationships and self-esteem development improved. In addition, a decrease was observed in their depression levels and health risk behaviors. Therefore, the health promotion program facilitated an improvement in the patients' interpersonal relationships, self-esteem development, and depression levels. In turn, a decrease in the patients' health risk behaviors prevented the development of lifestyle diseases.*

**Keywords:** Health promotion, Interpersonal relationship, Self-esteem, Depression, Behavior

### 1. Introduction

Congratulations! According to an epidemiological survey conducted in 2011 on mental disorders, 27.6% of individuals within a normal population develop more than one mental disorder in their lives. Men were found to be more likely to develop a mental disorder. In addition, the number of patients with chronic mental disorders, with the exception of those with other mental illnesses caused by alcohol and nicotine consumption, has been on a constant rise, from 59,223 in 2005 to 95,821 in 2011 [1]. An observation of lifelong prevalence rates would indicate that males are more likely to develop mental disorders than are females because of their alcohol use patterns, whereas females are more likely to develop anxiety disorders.

In South Korea, the government learnt that 1,173 won of the budget for socio-economic expenses was being spent on mental illnesses every year, with constituents even more surprised to learn that the total budget for mental disorders rose from 14,913 won in 2001 to 21,156 trillion won in 2005; the increase in the costs had almost doubled [2]. Patients with chronic mental disorders suffered from chronic symptoms of their disorders for two years or more and, eventually, experienced a decline in psychological, physical, and social functions. In the end, this would decrease the affected patients' self-regulation capabilities [3]. Since more than 80% of patients with chronic mental disorders are currently residing in local communities [1], to enable continuous monitoring of the health of such

individuals, there is a need for a special rehabilitation program targeting these patients, enabling stable care provision to them within their local communities.

In order to protect patients with mental disorders, the Republic of Korea established a mental health act on December 31, 1996, again, in the hope of encouraging the people with mental disorders who had been left alone at home or isolated in their local communities to join the outside world. First, the country opened five mental health centers in the capital area and, in 1999, the number increased to 30.

In 2010, the mental health act was revised and, since then, the government of South Korea has built and continues to operate several mental health promotion centers. As of December 2013, 200 in-service mental health promotion centers are in operation countrywide [4]. There were daytime rehabilitation programs for patients with chronic mental disorders and diverse integration programs for the prevention of recurrence and facilitation of their return to society, as well as adaptation [5].

However, the prevalence rate of physical disorders among patients with chronic mental disorders is reported to be quite high, at 83.2% [1]; the patients' physical health risk factors are reportedly related to health risk behaviors such as smoking, drinking, insufficient exercise, and drug abuse [6]. The health risk behaviors of individuals with chronic disorders not only predispose them to physical diseases, but also aggravate the mental disorders and increase their medical expenses and premature death rates among such individuals. Therefore, this study argues for a new health promotion program aimed at reducing the health risk behaviors of patients with chronic disorders. However, at present, mental health promotion centers mostly focus on programs aimed at preventing the recurrence of the patients' symptoms or their adaptation to local communities. Therefore, the centers do not seem to have adequate programs aimed at improving the health of patients with mental disorders.

In light of this, this study aims to develop a program aimed at improving the health of patients with mental disorders, which also affects the patients' interpersonal relationships, self-esteem, depression, and health risk behaviors.

## **2. Method**

### **2.1 Subjects**

Of the 151 patients with mental disorders in the N-gun community, 16, who were registered at the mental health promotion center, which forms part of the community health center, were selected for participation in the research, as they had shown a willingness to participate, after being provided with information on the study's purposes and details. The sample comprised these patients; they also had chronic mental disorders and had been trying to overcome their symptoms for more than two years since their initial diagnosis. In this study, it was ensured that the targeted participants could communicate adequately and answer the survey questions. In addition, the targets were required to be reasonable enough to join the health promotion program and follow the researcher's instructions.

### **2.2 Tools**

#### **• Interpersonal Relationship**

To measure interpersonal relationships, a measuring tool modified by Moon was used in this study [7].

The tool consisted of a total of 25 questions on the following seven sub-categories: satisfaction, communication, trust, friendliness, sensitivity, openness, and understanding. Four of the questions were related to satisfaction (Q1, 2, 3, and 4) and four others were related to communication (Q9, 14, 18, and 19). Trust was determined through three questions (Q15, 23, and 24), and three more questions on friendliness were specifically developed for this study (Q5, 11, and 16). Two of the questions were related to sensitivity (Q6 and 10); moreover, five (Q12, 17, 20, 21, and 22) and four (Q7, 8, 13, and 25) questions relating to openness and understanding, respectively, were developed for this study. Each of the questions was measured on a five-point scale and the scores ranged from 25 (lowest) to 125 (highest).

The higher the score, the better the subjects' interpersonal relationships. A Cronbach's alpha of .88, indicating the reliability of the tool, was observed in Chun's research [8]; a Cronbach's alpha value of .95 was found in this study.

#### • **Self-esteem**

Jon modified the self-esteem scale invented by Rosenberg [9].

Used to determine how one thinks of or treats oneself, the scale consisted of 10 questions, with five of the questions on positive self-esteem and the other five on negative self-esteem. The questions were measured on a four-point Likert scale. The scores were adjusted accordingly for the negative questions. The higher the score, the higher the self-esteem. At the time of development, Cronbach's alpha, indicating the reliability of the tool, was found to be .85; however, in this study, the value did not exceed .80.

#### • **Depression**

To measure depression, the Korean version of the CES-D, comprising a total of 20 questions, was used. The Korean version of the CES-D was based on the CES-D that was first developed by Radloff and subsequently revised by Chon, Choi, and Yang [10]. The tool comprised seven questions on depressing emotions and four on positive emotions. Two of the questions were on interpersonal relationships, and seven were on physical symptoms. Each of the questions was measured on a four-point Likert scale.

Scores on negative questions were adjusted accordingly. The higher the score, the more severe the depression. In this study, exploratory and confirmatory factor analyses were carried out and, as a result, the four questions on the positive emotion factor (Q4, 8, 12, and 16) and two questions on the interpersonal relationship factor (Q15 and 19) were removed. To sum up, the study used 14 questions relating to two factors; seven of these questions were related to depressing emotions (Q3, 6, 9, 10, 14, 17, and 18) and seven were related to physical symptoms (Q1, 2, 5, 7, 11, 13, and 20). When the tool was first designed, its reliability, as indicated by the Cronbach's alpha value, was found to be .91; in this study, a Cronbach's alpha of .89 was obtained.

#### • **Health Risk Behavior**

To measure health risk behaviors, an anti-health behavior scale for adults, developed by Lee [11], was used without modification. To measure the eight categories of health risk behaviors (i.e., drinking, smoking, eating habits, exercise, medical check-up, drug abuse, traffic safety, and safe intercourse) and the extent to which one takes care to engage in behaviors contributing towards one's health over the previous year, the questionnaire comprised two questions on each of the categories. The questionnaire comprised a total of 16 questions on a four-point

scale. The scores ranged from 0 to 48; the higher the score, the higher the extent of the health risk behaviors. A Cronbach's alpha of .75 was obtained, indicating reliability in this study.

## 2.3 Health Promotion Program

### • Description of the Health Promotion Program

The program for individuals with mental disorders consisted of the interpersonal relationship dimension (two sessions), the self-esteem dimension (two sessions), depression dimension (two sessions) and health behaviors dimension (16 sessions). It also consisted of laughter, health education, and dancing. First, laughter was included, following a nurse's referral to data and other materials on health education, which provided substantial information on laughter. Second, with regard to health education, the research subjects received guidance on understanding not only the necessity of health behaviors such as individual hygiene, drinking, smoking, exercise, sex, and sleeping, but also how to improve such behaviors. Last, the subjects were also invited to perform a physical activity, which comprised dancing to the rhythm of music [table 1].

### • How to Operate the Program

The health promotion program targeting individuals with mental disorders was conducted for six months, from August to December of 2014. The patients were asked to attend a total of 24 program sessions once a week, for 90 minutes (40 minutes for laughing, 30 minutes for education, and 20 minutes for dancing). A nurse certified as an expert laughter instructor took full responsibility for the operation of the program.

In order to encourage the patients to laugh at home, personally designed laughing calendars forming part of the program were distributed to the research targets, who were told to put stickers on the calendars every day when they laughed at home. The calendars were returned at the end of the program.

**Table 1. Health Promotion Program for Patients with Mental Disorders**

Week	Category	Types of Laughter	Content of Health Education	Dance (Titles of songs)
1	Pre-test	Overview of the program	Pre-measurement	
2-3	Improvements in interpersonal relationships	<ul style="list-style-type: none"> <li>• Hand-rubbing laughter</li> <li>• Car-with-floral decorations laughter</li> </ul>	<ul style="list-style-type: none"> <li>• Open your heart</li> <li>• Communication</li> </ul>	<ul style="list-style-type: none"> <li>• I cannot live without you</li> <li>• My good partner</li> </ul>
4-5	Improvements in self-esteem	<ul style="list-style-type: none"> <li>• Mirror laughter</li> <li>• Balloon laughter</li> </ul>	<ul style="list-style-type: none"> <li>• I love me</li> <li>• I can do it</li> </ul>	<ul style="list-style-type: none"> <li>• The country of every morning</li> <li>• Good job, good job</li> </ul>
6-7	A decrease in depression	<ul style="list-style-type: none"> <li>• Ninano laughter</li> <li>• Ah-ei-yee-oh-woo laughter</li> </ul>	<ul style="list-style-type: none"> <li>• How to cope with stress</li> <li>• Depression</li> </ul>	<ul style="list-style-type: none"> <li>• Bingo</li> <li>• Beep-beep</li> </ul>

8-23	Improvements in the health behavior	<ul style="list-style-type: none"> <li>• Well-being clapping laughter</li> <li>• Hand-washing laughter</li> <li>• Teeth-brushing laughter</li> <li>• Shampooing laughter</li> <li>• Hands-feet laughter</li> <li>• Salivary glands laughter</li> <li>• Picnic laughter</li> <li>• Laugh-with-eyes laughter</li> <li>• Hahoe mask laughter</li> <li>• Massaging laughter</li> <li>• Nongak laughter</li> <li>• Kimchi laughter</li> <li>• Ever-young laughter</li> <li>• Lion laughter</li> </ul>	<ul style="list-style-type: none"> <li>• Hand-washing</li> <li>• Teeth-brushing</li> <li>• Hair-washing</li> <li>• Nails- and toenails-clipping</li> <li>• Water-drinking</li> <li>• Sleeping</li> <li>• Sex life</li> <li>• Skin care</li> <li>• Nutrients</li> <li>• Smoking cessation</li> <li>• Exercise</li> <li>• Obesity</li> <li>• Drugs</li> <li>• Cerebrovascular disorders</li> </ul>	<ul style="list-style-type: none"> <li>• Romance in Hawaii</li> <li>• Spring in my hometown</li> <li>• Look at me, Kwisoon</li> <li>• Hwag Jin Yi</li> <li>• Love chain</li> <li>• Gee, it's hot</li> <li>• Nuilliri mambo</li> <li>• Mamma Maria</li> <li>• Starlight and moonlight</li> <li>• Clap your hands</li> <li>• Love battery</li> <li>• Eobuba</li> <li>• One-way ticket</li> <li>• Twist EM</li> </ul>
24	Post-test	Presentation	Post-measurement	

## 2.4 Data Collection

The data were collected through measurements carried out in the first and the last weeks of the program at the mental health promotion center. A mental care nurse and a social worker read out the survey to the research targets during one-on-one interviews; the targets' answers were dictated.

## 2.5 Data Analysis

The SPSS Win 21 program was used for analysis. The general characteristics were measured through frequencies, percentages, averages, and standard deviations. To determine differences in the interpersonal relationships and self-esteem levels, indicating the effects of the laughter-based mental rehabilitation program, a Wilcoxon signed-rank test was conducted.

## 3. Results

### 3.1 Characteristics of Subjects

A total of 16 individuals participated in the health promotion program targeting patients with mental disorders. The targets' age ranged from 23 to 63 years, with a mean of 41.50 years. With regard to the research subjects' gender, seven were male (43.8%) and nine were female (56.3%). With regard to marital status, 11 (68.8%) of the research subjects were living with families and eight (50.0%) were single; the latter attribute was applicable to the majority of the research targets. Most of the patients (i.e., 10, making up 62.5%) were being taken care of by parents and four (25.0%) were being looked after by their spouses. Two (12.5%) of the subjects did not have anyone to help them with in their daily lives.

The study examined factors related to diseases. Twelve (75.0%) of the research subjects with mental disorders had been diagnosed with schizophrenia; of the four (25.0%) subjects with mood disorders, two (12.5%) had bipolar disorder while the

other two (12.5%) had depression. Seven (43.7%) of the research targets were taking drugs prescribed by their psychiatrists.

### 3.2 Effects of the Health Promotion Program

The study measured the effects of the health promotion program, focusing on interpersonal relationships, self-esteem, depression, and health risk behaviors. Prior to the health promotion program, a score of 71.63 was obtained for interpersonal relationships; after the program, this score increased to 98.91 ( $z = -2.94, p = .003$ ). A significant increase was also observed in self-esteem levels, with the score increasing from 25.08 to 34.62 ( $z = -3.18, p = .001$ ). Prior to the program, the research targets obtained a score of 49.33 for depression; after the program, they obtained a score of 29.35 ( $z = -2.982, p = .003$ ). The results showed a significant reduction in health risk behaviors, from a score of 18.92 to 5.85 ( $z = -3.06, p = .002$ ) [table 2].

**Table 2. Effects of the Health Promotion Program Targeting Patients with Mental Disorders**

Variables	Pre	Post	z	p
	Mean ± SD	Mean ± SD		
Interpersonal relationships	71.63 ± 18.84	98.91 ± 12.18	-2.938	.003
Self-esteem	25.08 ± 6.70	34.62 ± 3.48	-3.182	.001
Depression	49.33 ± 11.75	29.25 ± 7.15	-2.982	.003
Health risk behaviors	18.92 ± 3.84	5.85 ± 3.67	-3.063	.002

## 4. Discussion

This study involved the development and implementation of a 24-week health promotion program aimed at preventing the recurrence of the psychological symptoms and lifestyle-related disorders of patients with mental disorders. Subsequently, the effects of the program were analyzed, focusing on the patients' interpersonal relationships, self-esteem, depression, and health risk behaviors.

Prior to the investigation, recurrent hospitalization, recurrence of symptoms, and medication's ability to decrease the interpersonal relationship skills and self-esteem of patients with chronic mental disorders had been noted. There was also sufficient understanding of the manner in which such states among patients who had been diagnosed with chronic mental disorders could result in lack of sensitivity and motivation among those affected. That being so, at the beginning of the health promotion program, two sessions aimed at the improvement of interpersonal relationships, two aimed at self-esteem improvement, and two aimed at a decrease in depression were conducted. Following these, 16 sessions on health promotion education commenced. During the health education, focus was on factors that contribute towards the development of other types of diseases among patients with mental disorders. Basic knowledge regarding personal hygiene, sleep, health behavior, and cerebrovascular diseases, as well as on how to improve these factors, was imparted to the participants. With regard to dancing, in order to ensure that the

research targets engaged in the physical activity before they could know it, exercises that would go well with the lyrics of popular songs were created, and the research targets danced.

When compared to the period prior to the program's implementation, the research subjects' interpersonal relationships showed significant improvement. Since no existing studies have implemented either identical or similar programs, the current study compared its results with those of other, advanced studies in which music therapy or humor interventions were applied. In one of these advanced studies, each subject with schizophrenia underwent 15 sessions of group music therapy for 50 minutes; the subjects showed a marginal rise in interpersonal relationships; however, this result was not significant. This is the key difference between this study and advanced studies [12]. However, another advanced study in which a video-based humor intervention was applied confirmed an increase in the interpersonal relationship skills of the control group; this result is similar to that of the current study. In the current study and the one using a video-based humor intervention, similar results were obtained because the assumption is that, in the context of both studies, interpersonal relationships were used to help the research subjects accept others and empathize with them [13]. Moreover, as a means of enhancing the subjects' interpersonal relationships, the current study encouraged the subjects to laugh, and the laughter provided a chance for them to communicate a message to others, which resulted in all of them bursting out laughing. In this context, the research subjects finally opened themselves up to others who are different from themselves, like flowers blooming. In addition, the subjects were given an opportunity to introduce themselves to others and listen to what they had to say, as the laughter continued, shaping how the subjects interacted with others. With regard to dancing, the study inspired the research subjects to express any feelings through specific dances that would go well with music. The research yielded positive results. The research subjects had an opportunity to dance with others; as a result, even more significant increases were observed in the scores on interpersonal relationships, as compared to the scores obtained in other advanced studies.

The participants in this research showed an improvement in self-esteem after the implementation of the health promotion program. This result was very similar to that of another study [14] that had reported an increase in self-esteem, after the implementation of a general self-esteem promotion program three times a week, targeting inpatients of a mental hospital. Each program session in that study lasted 60 minutes; the program comprised 10 sessions, in total. The result of the current study was also similar to that of another research [15] that cited improvement in self-esteem after the implementation of a music program and a singing program, with sessions held twice a week. Each of the 10 sessions in that program lasted 60 minutes. Previous research aimed to improve self-esteem through audio-visual materials, games, and singing. However, in the current study, the research subjects participated in games in which they could use even more complex materials such as mirrors and balloons, which are presumed to have helped the subjects with their self-esteem. In general, the study led the research subjects to both recognize their own value and regain their self-confidence. In the study, the subjects were also asked to sing songs, in order to strengthen their self-esteem and, while singing, they had an opportunity to express their feelings through physical activities. These resulted in the success of the program in this study, in enhancing the subjects' self-esteem.

This study confirmed that the health promotion program decreases depression among patients with mental disorders. The findings of this study are similar to those of another study [16] that had reported a decrease in depression, after participating patients with mental disorders performed *taekkyeon* once a week for 30 minutes.

The patients in that study participated in a total of 16 sessions of *taekkyeon*. Since, in the current study, in which patients were required to dance, no comparable advanced studies on the topic were found, the findings were compared to those of advanced research in which *taekkyeon*, which constitutes aerobic exercise, was performed. This study aimed to mediate a decrease in depression and, while being educated on both depression and how to cope with stress in this study, the research targets were encouraged to enjoy the accompanying physical activities, namely, laughing and dancing, and therefore, they could efficiently and effectively deal with their depression.

After the health promotion program, a decrease was noted in the scores on health risk behaviors. During the health promotion mediation, the research targets were educated on health education topics such as drinking, smoking, exercise, obesity, sex, and medication; it is assumed that this led to a decrease in health risk behaviors. This finding is supported by the results of a different study [6, 17] that had reported a relationship between the health risk behaviors of patients with mental disorders in certain local communities and drinking, smoking, insufficient exercise, drug abuse, and thoughtless sex. Specifically, the current study lowered the scores on health risk behaviors through the imparting of knowledge to the research targets on these variables and how to deal with them; the variables presumably correlated with the health risk behaviors of the patients with mental disorders in local communities.

The attempts in this study to implement diverse mediations targeting patients with mental disorders were obviously helpful. However, it is assumed that the encouragement given to the research targets to cooperate within the group setting, in groups facilitating mutual understanding and self-help, contributed considerably towards the positive developments in the targets' interpersonal relationships. Through such relationships, the research targets regained their self-esteem and were given an opportunity to relieve their depression. In addition, the study succeeded in reducing the targets' health risk behaviors, through the raising of awareness on the importance of health behaviors such as personal hygiene, drinking, smoking, exercise, sex, and sleep, including ways of promoting these behaviors. This education rendered the patients knowledgeable on how to take care of their own health.

In light of the discussion above, it is argued that the application of the self-developed health promotion program in this study among patients within local communities, with chronic mental disorders, not only improves their interpersonal relationships and self-esteem, but also reduces depression and health risk behaviors. This, it is argued, could eventually prevent the recurrence of the psychological symptoms and physical diseases of patients with mental disorders.

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