Effectiveness of gratitude disposition promotion program on depression and quality of life of chronic schizophrenic patients

Miran Jung, Kuemsun Han
Department of Nursing, College of Nursing, Korea University, Seoul, South Korea

ABSTRACT

Context: Gratitude intervention is expectedly an effective intervention to reduce depression and improve the quality of life in schizophrenic patients, but there is a lack of literature on it.

Aims: We attempted to develop and test the effectiveness of the gratitude disposition promotion program for chronic schizophrenic patients in Korea.

Settings and Design: Nonequivalent control group pre- and post-test design was used in two mental health centers located at Gyeonggi-do in South Korea.

Materials and Methods: This paper was a quasi-experimental study and the participants who took part in the gratitude disposition promotion program were 17 of experimental group and 15 of control group. Gratitude disposition (the short gratitude, resentment, and appreciation test), depression (Beck Depression Inventory), and quality of life (developed by Kook) of chronic schizophrenic patients were measured before and after an intervention, as compared to the control.

Statistical Analysis: Chi-square test, Fisher’s exact test, and t-test were performed for prehomogeneity testing for variables related to the general characteristics. Testing for the effectiveness of gratitude disposition promotion program and hypothesis testing for its effect on depression and quality of life were by ANCOVA and t-test, as verified to significance level of P < 0.05.

Results: The participants who received the gratitude disposition promotion program showed significant improvements in gratitude disposition (F = 18.740, P < 0.0001) and in quality of life (F = 9.800, P = 0.004), but no significant difference in depression (F = 3.870, P = 0.059).

Conclusions: The gratitude disposition promotion program was an effective clinical intervention program for enhancing gratitude disposition and quality of life of chronic schizophrenic patients in community.

Key words: Chronic schizophrenic patients, depression, gratitude disposition, gratitude disposition promotion program, quality of life

INTRODUCTION

In schizophrenic patients, about 80% of them experience depression and 20%–50% of them attempt to commit suicide in acute psychotic state or in chronic depressive state.[1-3]

Furthermore, depression, among the many factors affecting the quality of life of schizophrenic patients, has a great influence on the subjective quality of life.[3-7]

Gratitude intervention is expectedly effective to reduce depression and improve the quality of life in schizophrenic patients, but there is a lack of literature on it.[8-11]
Hence, we attempted to develop and test the effectiveness of the gratitude disposition promotion program for chronic schizophrenic patients in community.

**MATERIALS AND METHODS**

**Study design and participants**
This study was a quasi-experimental study using nonequivalent control group pre- and post-test design for determining the effect of gratitude disposition promotion program on depression and quality of life of chronic schizophrenic patients in community. The study participants were a population of members of mental health centers located at Ansan-si and Pocheon-si, Gyeonggi-do.

Two mental health centers located at Gyeonggi-do with similar patient characteristics and content of the weekly rehabilitation services were selected to prevent the experimental diffusion by the mutual information exchange between the study participants and ensure homogeneity between groups. The inclusion criteria for participants were: (1) Those who were able to take part in the weekly rehabilitation program; (2) those who had <30 Beck Depression Inventory (BDI) score among the patients at least ≥2 years after diagnosis with schizophrenia; (3) those who can respond to the questionnaire; and (4) those who have not received any programs related to gratitude. To prevent the contamination of a third variable, all members of both groups were asked for consent not to participate in program or seminars related to gratitude, read about them, and search for explanatory reasons for them. Participants were excluded from the study if they had comorbidity with diseases such as alcoholism, posttraumatic stress disorder, obsessive-compulsive disorder, and autism spectrum disorder.

In this study, initial participants were twenty people in the experimental group and 17 people in the control group. Excluded participants included three members who did not take part in this intervention for >2 sessions for private reasons in the experimental group and two members who only responded to the pretest but did not respond to the posttest in the control group. Finally, the participants included in this study were 17 people for the experimental group and 15 people for the control group.

**Outcome measurements**

**Depression measurements**
Depression for chronic schizophrenic patients was measured using the BDI (Beck Depression Inventory), which was invented by Beck. This tool was developed to measure emotional, cognitive, synchronous, and physiological symptoms of depression. This tool comprises 21 self-report items and a 4-point scale from no symptom (0 point) to most severe level of symptoms (3 points). The reliability for BDI was Cronbach’s $\alpha =0.91$ in this study.

**Quality of life measurements**
Quality of life measurements tool for chronic schizophrenic patients was developed by Kook and Son to measure the quality of life in schizophrenic patients. This tool contains five factors including the economic, general, physical, occupational social, and emotional area and consists of 25 items and 5-point scale from “not at all” (1 point) to “strongly agree” (5 points). Especially, items belonging to the emotional area are reverse scored. The reliability for quality of life was Cronbach’s $\alpha =0.94$ in this study.

**Intervention (gratitude disposition promotion program)**

**Developing procedure of the program**
In this study, the development of gratitude disposition promotion program for chronic schizophrenic patients in community proceeded in the order of the preliminary program, a pilot study, and the development of the final program, from December 2008 to June 2009. Three college students from a church located at Incheon were intensively interviewed, using a questionnaire based on the prior studies about the definition, attributes, and function of gratitude, to develop the preliminary program. Elements that were able to indicate gratitude disposition were identified as a rich self-awareness for sense, minor gratitude, and gratitude for others, corroborating previous literature. The program was constructed utilizing emotional and cognitive attributes of gratitude by reviewing the literature and improved with advice from a single nursing professor. Many illustrations were included in the program booklet to induce the participants’ interest. In addition, we utilized audiovisual materials when providing explanation for gratitude. The process of program, the relevance of contents and intervention method, and the validity of the tool were evaluated in the preliminary program that was conducted on ten schizophrenic patients participating in weekly rehabilitation at the mental health center located in Gyeonggi-do. Based on these results, the pilot program was modified and the final version of gratitude disposition promotion program for chronic schizophrenic patients in community was developed.

**Construction and contents of the program**
This program focused on reducing depression and improving the quality of life by promoting the gratitude disposition of chronic schizophrenic patients in community. The contents aimed at promoting a rich self-awareness, minor gratitude,
and gratitude for others in chronic schizophrenic patients on the basis of the literature related to the gratitude disposition. Learning methods consisted of education, demonstration, discussion, watching movies, role-playing, feedback, and game. Learning media and materials also included videos, multi-media materials, a CD player, and colored papers. A gratitude diary note was handed out to participants and they were given an assignment to write a gratitude diary daily.

This program consisted of four stages, i.e., the introduction stage, recognition of gratitude stage, expression of gratitude stage, and empathy of gratitude stage. First, the introduction stage aimed to improve the perception of external stimuli and a sense of self-worth. Second, the recognition of gratitude stage promoted determining and understanding general gratitude, the trivial gratitude, and gratitude for others, and learning trivial gratitude and gratitude for others. Third, the expression of gratitude stage emphasized experiencing and expressing the trivial gratitude and gratitude for others. Fourth, the empathy of gratitude stage facilitated conveyance of their experience for gratitude and empathy of the experience of others by reading aloud a gratitude diary that all participants had written from the initial stage of the program [Table 1].

**Application of gratitude disposition promotion program**

This program comprised a total of eight sessions, of 45 min twice a week, for chronic schizophrenic patients in community. It was applied by modifying the preliminary investigation based on the research result that the appropriate treatment time for schizophrenic patients was twice a week, 60–90 min,[15,16] and provided the intervention in the order being planned, after making protocols of program procedures and contents. The practical assignment that matched the theme of each session was implemented at the end of all sessions. First session, the introduction stage, is a stage that chronic schizophrenic patients understand the purpose and contents of this program and recognize the need to promote gratitude disposition. Second session, the stage of gratitude recognition, is an intervention process for understanding components and characteristics of gratitude. Third session, the learning intervention for recognizing and expressing gratitude in daily situations, was made to share gratitude that they found through discussion after watching part of the movie “Yes Man.” Fourth session, the stage of learning to appreciate the minor things or circumstances of everyday life, is creating awareness of value and expression of gratitude for them. Fifth session, which is the stage of recognizing gratitude of others and giving expression to them, is the intervention of reciprocal gratitude with the help of play format. Sixth session is the stage of gratitude expression for the minor things in the surrounding environment. Seventh session is the stage of gratitude expression facilitating the experience of gratitude of others, with a written gratitude letter to people in control group or others. Eighth session, the intervention to announce their own experience of gratitude and allow feeling of empathy for other’s announcing contents, is the stage of gratitude empathy terminating the program by evaluating the change in their own. In addition, it required participants to talk about their feelings and thoughts and check their change through gratitude disposition program for 4 weeks in this session.

**Data collection**

Data collection of this study consisted of the selection of study participants, pretest, the experimental intervention, and posttest conducted from July 1, to October 30, 2009. Specific procedures and methods were as follows.

**Pretest**

In pretest, participants were required to fill up the self-report questionnaire for the general characteristics, gratitude disposition, depression, and quality of life, after a detailed explanation of this study was given; participants provided consent for participation before the experimental treatment. If a participant had difficulty in filling a questionnaire, help was provided by a research assistant.

**The experimental intervention**

The experimental treatment of this study was the newly developed gratitude disposition program for 4 weeks. The program was conducted in the weekly rehabilitation room of the mental health center to which the experimental group belonged and provided gratitude disposition promotion program for chronic schizophrenic patients in community as the experimental group twice a week (Tuesday and Friday) about 45 min for a total of eight sessions. In the introduction of the program, participants were made to describe the experience of the application of the real life related to the topic of all sessions; this centralized attention through a warm-up related to the topic of the session, and introduced the contents of education. We used methods such as education, discussion, demonstration, meditation, watching a movie, role-playing, and feedback in the deployment phase and conducted participants’ evaluation for the session, giving an assignment (writing a gratitude diary) and guiding for the next session in the termination phase.

**Posttest**

Posttest, immediately after the experimental treatment of 4 weeks, was carried out through the survey for gratitude disposition, depression, and quality of life in the same way as pretest to all participants, including the experimental group and control group. All participants in experimental group and control group were given a small gift as a token of gratitude for the study participation. Data was collected from 34 participants over a period of 4 weeks. However, data results of 32 participants were finally used in this study, except for the four participants who dropped out.
Table 1: Construction and contents of gratitude disposition promotion program

| Stage                          | Session topics                                      | Contents                                                                                                                                   | Method                      | Expected effect                             |
|-------------------------------|-----------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|---------------------------------------------|
| The introduction stage        | Improvement sensitivity to external stimuli and awareness of a sense of self-worth | Make be aware of rich sense of gratitude<br>Make be aware of a sense of self-worth<br>Make accept that one can be gratitude or take gratitude<br>Make be aware of the necessity of the gratitude disposition promotion program<br>Introduce the gratitude disposition promotion program | Education<br>Discussion<br>Photo/listening the music<br>Feedback | Knowledge acquisition<br>Improvement of awareness to external stimuli and positive perception<br>Promotion of self-worth<br>Recognition the necessity of the gratitude disposition promotion program |
| The recognition of gratitude stages | Understanding of the gratitude | Identify the existing self-awareness of the gratitude<br>Understand the components and characteristics of the gratitude<br>Predict changes which may occur by becoming familiar with gratitude | Education<br>Discussion<br>Demonstration | Knowledge acquisition<br>Recognition of the meaning and necessity of gratitude |
| The recognition and expression of gratitude situation | Seek the gratitude in the movie<br>Express gratitude through scenario<br>Check the expression of one’s own gratitude in the same situation | Watching the movie<br>Demonstration<br>Role-play discussion | Improving the recognition of gratitude situation<br>Learning the expression of gratitude |
| Selection and expressive method of gratitude in life | Understand about minor gratitude<br>Understand the selection of gratitude in life experience<br>Learn how to express gratitude to others with the play giving and taking help<br>Learn the specific skill for expression of gratitude, when recognizing gratitude by others | Education<br>Discussion<br>Demonstration<br>Game<br>Feedback | Promoting the understanding of minor gratitude<br>Promoting the selection of gratitude from a variety of situations in life<br>Promoting various expressive methods of gratitude for others<br>Promoting the understanding of gratitude for others<br>Learning the specific skill for expression of gratitude for others<br>Recognition of the importance of gratitude for others |
| Behavior and expressive method of gratitude for others | The expression of gratitude about surrounding | Reduce the negative perception about surrounding and have the positive perception<br>Express minor gratitude | Discussion<br>Demonstration<br>Feedback | Alleviation depression<br>Promoting the perception of gratitude about minor gratitude and the expression of mood<br>Improving the quality of life<br>Promoting the perception of gratitude for others and the expression of mood<br>Improving the quality of life |
| Experience the gratitude emotion for others | Write a gratitude letter to relay and convey gratitude to others with it<br>Raise the gratitude emotion by being delivered gratitude from others | Game<br>Discussion<br>Feedback | Learning the expression of gratitude for others<br>Promoting the perception of gratitude for others<br>Improving the quality of life |
| The empathy of gratitude stage | The experience and empathy of gratitude and evaluation for one’s own changes | Tell the experience of one’s own gratitude through announcing one’s own a gratitude diary<br>Recheck and empathize with gratitude for others<br>Give one’s thoughts on changes for 4 weeks and is finished with this program | Demonstration<br>Discussion<br>Feedback | Improving the empathy of gratitude for others |

for personal reasons or were unsuccessful in filling out a questionnaire.

**Statistical analysis**

Data analysis was performed by SPSS for Windows Version 12.0 and SAS Version 9.2 and verified to significance level \( P < 0.05 \). The general characteristics of the experimental and control groups were calculated as descriptive statistics, and Chi-square test, Fisher’s exact test, and \( t \)-test were performed for prehomogeneity testing for variables related to the general characteristics of the experimental and control groups. Hypothesis testing for the effectiveness of gratitude disposition promotion program on gratitude disposition of chronic schizophrenic patients was by ANCOVA and \( t \)-test, and hypothesis testing for its effect on depression and quality of life was by ANCOVA. The reliability testing of research tools was analyzed as Cronbach’ \( \alpha \).

**RESULTS**

**Participants’ characteristics**

Demographic characteristics of the participants were as follows [Table 2]. This study sample consisted of 32 participants, which were 17 in the experimental group and 15 in the control group.

Within the experimental group, participants were 38.76 years old averagely and had the following diagnoses based on the Diagnostic and Statistical Manual of Mental Disorders-Text Revision:\(^{[17]}\) schizophrenia, paranoid subtype (\( n = 5, 29.41\% \)); schizophrenia, residual subtype (\( n = 11, 64.71\% \)); and schizoaffective disorder (\( n = 1, 5.88\% \)). The mean age at onset and duration of illness in this group was 23.38 years and 13.81 years, respectively. There were 14 cases (82.3\%) of psychiatric inpatient treatment experience, and the average number of admission was 2.69 times.
Within the control group, participants were 43.27 years old averagely and had the following diagnoses: schizophrenia, paranoid subtype \((n = 3, 20\%); \) schizophrenia, residual subtype \((n = 10, 66.67\%); \) and schizoaffective disorder \((n = 2, 13.33\%); \)

The mean age at onset and duration of illness in this group was 26.07 years and 17.2 years, respectively. There were 13 cases \((86.7\%); \) of psychiatric inpatient treatment experience, and the average number of admission was 2.27 times.

Performing \(\chi^2\)-test, \(t\)-test, and Fisher’s exact test for homogeneity testing in accordance with demographic characteristics of the experimental and control groups showed that both groups were homogeneous.

**Hypothesis testing**

**Hypothesis 1**

“The chronic schizophrenic patients who received the gratitude disposition promotion program would have higher gratitude disposition score than the patients who didn’t received it” was supported by the significant difference between the experimental group and the control group \((F = 18.740, P < 0.000)\) [Table 3].

**Hypothesis 2**

“The chronic schizophrenic patients who received the gratitude disposition promotion program would have lower depression score than the patients who didn’t received it” was not supported as it showed statistically insignificant difference between the two groups \((F = 3.870, P = 0.059)\) [Table 4].

**Hypothesis 3**

“The chronic schizophrenic patients who received the gratitude disposition promotion program would have higher quality of life score than the patients who didn’t received it” was supported by the statistically significant difference between the experimental group and the control group \((F = 9.800, P = 0.004)\) [Table 5].

**DISCUSSION**

Gratitude disposition promotion program of this study appeared to be effective in promoting gratitude disposition...
and improving quality of life in the experimental group \((P < 0.05)\). This result was similar to the study result of Emmons and McCullough\cite{18} that college students were more optimistic about their life and had an increased sense of subjective well-being by recording five gratitude events once a week; the study result of Kim\cite{19} that high school students’ life satisfaction and positive affection increased by completion of a gratitude program; and the study result of Jo \textit{et al.}\cite{20} that improved gratitude disposition and increased life satisfaction in the general adults through writing a gratitude journal. This effectiveness is due to the features that gratitude disposition promotion program consisted of feeling and expressing emotional aspects after learning the cognitive aspects for gratitude at first and included the sessions that recognized and expressed a lot of gratitude for life occurrences, focusing on chronic schizophrenic patients in community who recognize gratitude more easily but had more difficulty in expressing the emotion than general people. It is determined that increasing the experience of gratitude and reminders of it again during the course of life is effective in improving the quality of patients’ life, as shown by Gordon \textit{et al.}\cite{21} that importance of learning and practice was related to the resource of gratitude in one’s life. In addition, it is thought that this program achieves higher quality of life, as compared with other existing intervention programs that have been studied for enhancement of quality of life in mentally ill patients. However, in this study, the depressive score of before and after the gratitude disposition promotion program did not differ significantly in the experimental group and the control group. This result differed from the report of Seligman \textit{et al.}\cite{22} that five interventions including writing the gratitude letter using internet reduced the depressive level. Furthermore, Kim and Yi\cite{23} determined that gratitude awareness reduced depressive score effectively in college students by writing gratitude event and gratitude letter.

Table 4: The result of ANCOVA analysis for depression of the experimental and control groups

| Source          | SS      | df | MS     | F      | P     |
|-----------------|---------|----|--------|--------|-------|
| Modified model  | 1218.949| 2  | 609.475| 9.191  | 0.001 |
| Prescore        | 796.800 | 1  | 796.800| 12.016 | 0.002 |
| Group           | 256.642 | 1  | 256.624| 3.870  | 0.059 |
| Error           | 1923.051| 29 | 66.312 |        |       |
| Total           | 3142.000| 31 |        |        |       |

SS – Sum of square; MS – Mean square

Table 5: The result of ANCOVA analysis for quality of life of the experimental and control groups

| Source          | SS      | df | MS     | F      | P     |
|-----------------|---------|----|--------|--------|-------|
| Modified model  | 6812.145| 2  | 3406.072| 20.181 | 0.000 |
| Prescore        | 2357.630| 1  | 2357.630| 13.969 | 0.001 |
| Group           | 1654.006| 1  | 1654.006| 9.800  | 0.004 |
| Error           | 4894.574| 29 | 168.778|        |       |
| Total           | 11,706.719| 31 |        |        |       |

SS – Sum of square; MS – Mean square

The awareness level of depression is due to the difference in response to the patient’s level of depression. Furthermore, all the individual’s life events that could affect the patients were uncontrollable though patients had BDI score of pretest of <30 and belonged to severe depressed state that made it difficult to participate in the program while ruling out the variables that could affect the result of this study; in addition, covariance analysis was performed considering that the difference of depressed level between patients could influence the effectiveness of program. No significant difference was observed in this study, but we could not conclude that the effectiveness was negative since there was a certain reduction of depression score before and after the program in the experimental group. Therefore, sessions for emotional expression in program need to be increased because the depressive patients require the outlet for emotion.

Although this study was conducted in chronic schizophrenic patients in community, it may be limited to a sufficient understanding of the process of chronic illness and its symptoms in each participant. Therefore, we propose in-depth interviews about the patient’s disease process in the future studies. We presume that interviews with the participants can enhance their better understanding and may be the basis of individual intervention by identifying information such as their illness, relapse, cognitive level, medication use (current and history), side effects and types of medication, and the type of treatment being performed. In addition, it is necessary to confirm the chronic characteristics and level of cognitive function of the participants by examining them by applying a tool such as Positive and Negative Syndrome Scale\cite{22,23} (which can confirm the positive and negative symptoms of chronic schizophrenic patients), and Wisconsin Card Sorting Test\cite{24} (which is a typical method to measure the execution function). In addition, it is important to look at whether this program has effectiveness on the chronic characteristics and level of cognitive function through comparison of the pre- and post-tests.

In particular, research participants were free of any other psychological interventions such as cognitive behavioral therapy, dialectical behavioral therapy, one-session treatment, neurofeedback, and repetitive transcranial magnetic stimulation, except intervention related to the contents of gratitude in this study. However, these interventions have considered the possible impacts on the outcome. Therefore, in the future studies, it may be meaningful to view what kind of intervention the patient performed during the study intervention and to view how it affected the result of the study.

CONCLUSIONS

In this study, we newly developed a gratitude disposition promotion program for promoting gratitude disposition,
reducing depression, and improving quality of life of chronic schizophrenic patients in community and verified its effect. The study results indicated that gratitude disposition promotion program was a useful intervention to raise the gratitude disposition and quality of life of chronic schizophrenic patients in community. This program could contribute to the expansion of schizophrenia research area and reaffirms that a practical application is easy and the utilization is high, from the practical point of view.

Financial support and sponsorship
Nil.

Conflicts of interest
There are no conflicts of interest.

REFERENCES

1. Häfner H, Maurer K, Trendler G, an der Heiden W, Schmidt M, Könnecke R. Schizophrenia and depression: Challenging the paradigm of two separate diseases – A controlled study of schizophrenia, depression and healthy controls. Schizophr Res 2005;77:11-24.

2. Siris SG. Depression in schizophrenia: Perspective in the era of “atypical” antipsychotic agents. Am J Psychiatry 2000;157:1379-89.

3. Abedi Shargh N, Rostami B, Kosari B, Toosi Z, Majelan GA. Study of relationship between depression and quality of life in patients with chronic schizophrenia. Glob J Health Sci 2015;8:224-9.

4. Davidson M, Reichenberg A, Rabinowitz J, Weiser M, Kaplan Z, Mark M. Behavioral and intellectual markers for schizophrenia in apparently healthy male adolescents. Am J Psychiatry 1999;156:1328-35.

5. Priebe S, McCabe R, Junghan U, Kallert T, Ruggeri M, Slade M, et al. Association between symptoms and quality of life in patients with schizophrenia: A pooled analysis of changes over time. Schizophr Res 2011;133:17-21.

6. Yoo HJ, Yoon DJ, Shin YW, Bahn G, Kim JW. Quality of life and insight in patients with schizophrenia. J Korean Neuropsychiatr Assoc 1999;38:340-8.

7. Norman RM, Mallia AK, McLean T, Voruganti LP, Cortese L, McIntosh E, et al. The relationship of symptoms and level of functioning in schizophrenia to general wellbeing and the Quality of Life Scale. Acta Psychiatr Scand 2000;102:303-9.

8. Seligman ME, Rashid T, Parks AC. Positive psychotherapy. Am Psychol 2006;61:774-88.

9. Kim PN, Yi IH. Influence of gratitude perception on self-focused attention and depression: Gratitude disposition and gratitude treatment. Korean J Psychol Health 2009;14:363-82.

10. Watkins PC, Woodward K, Stone T, Kolts RL. Gratitude and happiness: Development of a measure of gratitude and relationships with subjective well-being. Soc Behav Pers Int J 2003;31:431-52.

11. Wing JF, Schutte NS, Byrne B. The effect of positive writing on emotional intelligence and life satisfaction. J Clin Psychol 2006;62:1291-302.

12. Thomas M, Watkins P. Measuring the Grateful Trait: Development of Revised GRAT. Paper Presented at the Annual Convention of the Western Psychological Association. Vancouver BC; 2003.

13. Beck AT. Cognitive Therapy and Emotional Disorders. New York: International University Press; 1976.

14. Kook SH, Son CN. The development of happy-QoL scale for assessing the quality of life in patients with schizophrenic disorder. Korean J Clin Psychol 2002;21:665-91.

15. Lee KJ, Son BH. The effectiveness of enneagram program for self-concept, role function, and quality of life of chronic mental illness. Nurs Sci 2006;18:9-21.

16. Seo JM, Ahn S, Byun EK, Kim CK. Social skills training as nursing intervention to improve the social skills and self-esteem of inpatients with chronic schizophrenia. Arch Psychiatr Nurs 2007;21:317-26.

17. American Psychiatric Association. Diagnostic and Statistical Manual of Mental Disorder. 4th ed. Washington, DC: American Psychiatric Press; 2000.

18. Emmons RA, McCullough ME. Counting blessings versus burdens: An experimental investigation of gratitude and subjective well-being in daily life. J Pers Soc Psychol 2003;84:377-89.

19. Kim DH. The Effects of Appreciation Program on the Subjective Well-Being of High School Students. [Master’s Thesis]. Changwon: Changwon National University; 2008.

20. Jo JH, Kim KM, Kim DW, Kim JH. The effect of keeping an appreciation journal on subjective well-being, self-esteem, self-efficacy, gratitude disposition, and physical and mental health. Discourse 201 2008;11:75-101.

21. Gordon AK, Musher-Eizenman DR, Holub SC, Dalrymple J. What are children thankful for? An archival analysis of gratitude before and after the attacks of September 11. J Appl Dev Psychol 2004;25:541-53.

22. Seligman ME, Steen TA, Park N, Peterson C. Positive psychology progress: Empirical validation of interventions. Am Psychol 2005;60:410-21.

23. Kay SR, Fiszbein A, Opler LA. The positive and negative syndrome scale (PANSS) for schizophrenia. Schizophr Bull 1987;13:261-76.

24. Solanki RK, Singh P, Midha A, Chugh K. Schizophrenia: Impact on quality of life. Indian J Psychiatry 2008;50:181-6.

25. Heaton RK, Chelune GJ, Talleyrn JI, Kay GG, Curtis G. Wisconsin Card Sorting Manual: Revised and Expanded. Odessa, FL: Psychological Assessment Resources, Inc.; 1993.