

The Effects of Laughter-Therapy on Moods and Life Satisfaction in the Elderly Staying at Care Facilities in South Korea

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Purpose: The purpose of this study was to investigate the effects of laughter-therapy on negative mood and life satisfaction in older adults staying in care facilities. **Methods:** Twenty four individuals from facility G participated in the laughter-therapy group and another 24 from facility J in the usual care group. Eight sessions composed the laughter-therapy in this study and each session lasted 60 minutes. To examine the hypotheses, data analysis was conducted using descriptive statistics and ANCOVA with the SPSS program version 16.0. **Results:** Negative mood scores for the laughter-therapy group were lower than those of control group ($F=89.99, p<.001$). Life satisfaction scores for the laughter-therapy group were higher than those of control group ($F=100.68, p<.001$). **Conclusion:** The findings of this study suggest that laughter-therapy for older adults staying in care facilities results in an improvement in mood and life satisfaction.

Key Words: Laughter therapy, Mood, Satisfaction, Elderly

INTRODUCTION

The population of older adults in South Korea has been increasing. The percentage of the population of older adults in South Korea was 7.2% in 2000, and it is forecasted around three times larger (20.8%) in 2026 (Statistics Korea, 2008). Because of the growing population of older adults, the usage rate of care facilities has also increased, which has increased three-fold, from 0.2% in 2004 to 0.6% in 2008. Even though the usage rate of care facilities for older adults has increased in South Korea, many interventions in the facilities have usually been implemented by volunteers without specialized training (Koo, 2008). Residents at facilities suffer from unfamiliar environments and limited activities. These limited conditions diminish identity and reduce independence (Goh, Hwang, & Oh, 2009). Residents in care facilities are more likely to be depressed and 19-24 percent of the older adults staying at care facilities showed depressive symptoms (Cho et al., 1998).

Older adults experience different mood states in accordance with physiological, psychological, and social

aging processes (Shin & Chung, 1997). Mood state is a general emotional state that a person perceives subjectively (McNair & Droppleman, 1992). Mood state in older adults is significantly related to gender, education level, economic condition, health status, and social activities (Shin & Chung, 1997). Men have better mood than women, college graduates than others, and persons in good economic condition than the ones in poor economic condition. Mood state is also related to marital status, the number of children, pocket money, smoking, and financial support. Married persons have a better mood than non-married persons (Shin & Chung, 1997). Even though the number of older adults staying at care facilities has increased, studies on their mood levels were few.

Life satisfaction is defined as an emotional condition, a feeling of psychological comfort and subjective well-being based on an acknowledgement of one's life in value and success (Lee, 1997). It is also defined as a psychological and social condition satisfied by acknowledging the aging process and coping successfully with society (Moon, 2000). Life satisfaction in older adults is sig-

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nificantly related to certain factors such as educational level, a number of children, housing types, health status, economic status, and self-esteem in South Korea (Kwon & Cho, 2000). Especially, physical activities of older adults staying at care facilities are limited because of chronic disease and the decreased physical functions, which bring on anxiety, passiveness to daily activities, depressive mood, and low life satisfaction (Kim, Park, & Kim, 2008; Lee, 2007). Many studies related on life satisfaction were reported in South Korea, but most studies were focused on healthy older adults with families or community older adults. With considering the facts that the number of older adults in care facilities has increased and their life satisfaction has shown lower than others (Kim, Park, & Kim, 2008), trials to improve life satisfaction in older adults staying in care facilities are required.

Laughter is defined as “a physical behavior that occurs in response to something which is perceived as humorous, amusing, or surprising. This behavior engages most of the muscle groups and organ systems within the body. Laughter is a response to humor and one of the ways to communicate with others for interactions (Bennett & Lengacher, 2006). The expressions of laughter depend on two neuronal pathways (involuntary and voluntary systems). The involuntary system involves the amygdale, thalamic/hypo, subthalamic areas and the dorsal/tegmental brainstem and the voluntary system originates in the premotor/frontal opercular areas and leads through the motor cortex and pyramidal tract to the ventral brainstem (Wild, Rodden, Grodd, & Ruch, 2003). The systems are coordinated by a laughter-coordinating centre in the dorsal upper pons. While laughing, heart rate, blood pressure, and blood circulation increase and oxygen and nutrition transfers become active (Lebowitz, Suh, Diaz, & Emery, 2011). Laughter makes endorphins secreted so that it control pain, depression, anxiety, and mood but it also activates immune globulin and natural killer cell (Berk, Felton, Tan, Bittman, & Westengard, 2001).

Even though a few studies were conducted to improve mood and life satisfaction in older adults (Jung, 2009; Kim & Jun, 2009; Myeong, 2010), one important limitation of the previous studies is that all studies were conducted in visiting senior welfare centers or senior citizens centers and there was no study for residents staying in care facilities even though the levels of mood and life satisfaction in care facilities are lower than others in community (Kim, Park, & Kim, 2008; Lee, 2007). Thus, there is a need to investigate the effect of laughter-ther-

apy on mood and life satisfaction for residents at care facilities. By doing so, the findings of the current study would provide meaningful information to develop an ideal laughter-therapy for residents in order to increase their life satisfaction. The purpose of this study is to investigate the effects of laughter-therapy on mood and life satisfaction in older adults staying at care facilities. The hypotheses of this study were as follows:

Hypothesis 1: Mood state scores of older adults who participate in laughter-therapy at care facilities will be lower as compared to control group.

Hypothesis 2: Life satisfaction scores of older adults who participate in laughter-therapy at care facilities will be higher as compared to control group.

METHODS

A. Study design

This study was a quasi-experimental study with a non-equivalent control group pre-post test design to investigate the effect of laughter-therapy on mood and life satisfaction in older adults staying at care facilities.

B. Setting and Sample

A non-probability convenience sample was used. The two care facilities including a care facility G at G-city and a care facility J at CH-goong were recruited because they were located within one-hour drive of the primary investigator (PI)'s working office. The facility G was assigned to the experimental group and the facility J to the control group.

Sample size was determined by power calculation on the basis of Cohen's (Cohen, 1988) effect-size formulas using power 0.70 and effect size 0.5. Based on the finding of the calculation, 20 subjects were required for each group, but after considering the subject's drop rate, 5 subjects were added to each group. Ultimately, 25 subjects were assigned to each group. Individuals who met the following inclusion criteria were included in the 4-week study: 1) age 65 and older; 2) staying at care facilities; 3) communicable (being able to answer questionnaires and follow requests); and 4) had never participated in laughter-therapy before. Individuals who met the following criteria were excluded from the study: 1) having a hearing impairment; 3) having a cognitive impairment; and 3) not able to move to the main resting room for laughter-therapy (the place the laughter-therapy was supposed to be offered).

C. Measurements

a) Mood state

Mood state was measured by the Profile of Mood States-Brief (POMS-B) (McNair, Heuchert, & Shilony, 2003; Yeun & Shin-Park, 2006). The POMS-B was originally developed by McNair et al. (2003) and translated into Korean by Yeun and Shin-Park (2006) (Yeun & Shin-Park, 2006). The Korean Version of POMS-B was used for this study (Yeun & Shin-Park, 2006). The POMS-B consists of 30 questions and includes six areas: tension, depression, anger, vigor, fatigue, and confusion. Scores for each item ranged from 0 (none) to 4 points (very often) using the Likert scale. Higher total scores in the POMS-B mean worse mood states. Cronbach's alpha value of the original POMS-B was 0.70 to 0.74 (McNair et al., 2003). Cronbach's alpha value of the Korean version of POMS-B was 0.59 to 0.85 (Yeun & Shin-Park, 2006). Cronbach's alpha value of this study was 0.58 to 0.93.

b) Life satisfaction

The Older Adults' Life Satisfaction was used to measure the life satisfaction of older adults in this study (Yang, 2005). The Older Adults' Life Satisfaction includes three fields such as the experience field, emotional field, and comparative satisfaction field and it consists of 20 questions. The score of each item ranged from 1 to 3 points with a higher score in the Older Adults' Life Satisfaction meaning better life satisfaction. Cronbach's alpha value of the Older Adults' Life Satisfaction in this study was 0.88.

D. Procedures

Laughter-therapy was offered at facility G (experimental group) and usual care was offered at facility J (control group) to ensure no contamination. Facility G included almost 62 beds and 26 staff and facility J had 100 beds and 63 staff. The two facilities were located in a distance of one hour drive from the PI's working office. The PI contacted two facilities by phone and visited the facilities to present the purpose and process of the study to residents and the directors of nursing. When residents showed their interest in participation, the PI provided a more detailed explanation of the process of the study and its pros and cons. Finally, 25 subjects from each facility agreed to participate in this study, and formal consent forms were obtained from the residents and their family members. Initially, the process of the study was presented and reviewed to the

subjects and the subjects were allowed to drop out any time they want throughout the study for the ethical consideration. Finally, 24 subjects from each facility completed the data collection because one from each facility was discharged for personal reasons.

The purpose and process of this study were also explained to one nurse, one social worker, and six nursing assistants. They guided the residents to the main lobby for laughter therapy and helped residents to follow the PI's actions. They agreed to help with the procedure of this study throughout the data collection period. Laughter-therapy was offered from 2pm to 3pm for 60 minutes, two times a week for four weeks (a total of 8 sessions) at facility G. The therapy was offered at 2pm because there was no special intervention at that time in the facilities and the residents had scheduled free time. Usual care was offered at the facility J and it included taking a foot bath, a puzzle, singing songs, art therapy or throwing balls. One of them was offered to the clients on a certain day such as taking a foot bath on Monday or singing songs on Tuesday and so on, but the care was flexible depending on the facility's situation or client's schedule.

Initial levels of mood state and life satisfaction (pre-test) in the experimental group and control group were measured before laughter-therapy began. The levels were also measured right after the last session of the therapy (8th session) in the experimental group as well as in the control group at the same time (posttest). The PI offered the laughter-therapy and research assistants helped with data collection. The research assistants were trained by the PI regarding the contents of measurements.

a) Laughter-Therapy

Each session had an introduction (10 minutes), a main part (40 minutes), and a conclusion (10 minutes). The contents of the introduction and conclusion of each session were the same, but the main part of each session was different. The laughter-therapy in this study was offered for 60 minutes with 8 sessions. The detailed contents of each session are presented in Table 1. The introduction part of laughter-therapy sessions includes 'say hi each other' and 'a clapping game'. The main part of the therapy consists of 'laughing', 'appreciating and laughing', 'laughing in everyday life', and 'laughing using certain tools'. The concluding part of the therapy includes 'saying one's impressions or feelings' and 'finalizing physical exercises'.

The contents of the laughter therapy in this study

Table 1. Contents of Laughter Therapy

Step	Categories	Contents	Explanations
Introduction Session 1 to 8 (10 minutes)	Introduce myself and open therapy.	<ul style="list-style-type: none"> · Saying hi to each other · Offering humor · Maximizing laughing using a mask of bold head, a masque performer's nose, and extraordinary eyeglasses. · Clapping games · While laughing, laugh as long and deep as possible 	'Clapping games' is encouraged which is clapping with different parts of the hands such as the end of hand, the back of hand, and side of hand with music.
Main part Session 1 (40 minutes)	Preparation for laughing therapy	<ul style="list-style-type: none"> · Warming up for laughing · Introducing myself · Effect of laughing · Ways of laughing-laugh as long and deep as possible · Healthy clapping and laughing · A choo-choo game 	'A choo-choo game' is when the PI says "choo-choo" by raising her hands, the participants follow the action with saying "choo-choo" and when she says another "choo-choo" by lowering her hands back, the participants follow the action with saying "choo-choo."
Main part Session 2 (40 minutes)	Praising and laughing	<ul style="list-style-type: none"> · Review session 1 · Warming up for laughing · Good news · A game of rock, paper, and scissors and laughing · Sharing the effect of laughing · Face each other, applaud to the each other, and laughing together. · Laughing dance 	
Main part Session 3 (40 minutes)	Appreciating and laughing	<ul style="list-style-type: none"> · Review session 2 · Warming up for laughing · Good news · Lecture related to the meaning of thankfulness · Appreciating and laughing · Appreciating myself and laughing · Top to bottom game · Laughing dance 	<p>'Lecture related to the meaning of thankfulness' is praying with smiling face and closing eyes, shouting "thank you, thank you, and really thank you", and laughing loudly with clapping and saying "ha, ha, ha, ha."</p> <p>'Top to bottom game' is when the PI says "up" with raising her arms, the participants follow the action with saying "up" and when the PI says "down" with lowering her arms, they follow the action with saying "down." The PI repeats the action in the opposite direction from 'down' to 'up.'</p>
Main part Session 4 (40 minutes)	Laughing in life	<ul style="list-style-type: none"> · Review session 3 · Warming up for laughing · Good news · Laughing line, laughing zone, and laughing time · Laughing dance 	'Good news' is that the participants tell their own good news and laugh loudly saying "ha, ha, ha, ha" with smiling face and clapping.
Main part Session 5 (40 minutes)	Use tools	<ul style="list-style-type: none"> · Review session 4 · Warming up for laughing · Good news · Laughing using balloons · Laughing using hammers 	
Main part Session 6 (40 minutes)	Laughing	<ul style="list-style-type: none"> · Review session 5 · Warming up for laughing · Good news · Laughing dance · Singing contest 	
Main part Session 7 (40 minutes)	Laughing	<ul style="list-style-type: none"> · Review session 6 · Warming up for laughing · Good news · Diverse ways of laughing · Laughing dance 	
Introduction Session 8 (40 minutes)	Laughing	<ul style="list-style-type: none"> · Review session 7 · Warming up for laughing · Good news · Laughing dance · Ways of happy laughing · Laughing like an airplane · Laughing like a shellfish · Giving one's impression 	<p>'Ways of happy laughing' is reminding and telling a happy moment in his/her life and laughing loudly with clapping.</p> <p>'Laughing like an airplane' is when the PI stands up and opens her arms like an airplane. When she raises her right hand with a big motion, the participations laugh very loudly and when she does the same with a small motion, they laugh in a small way</p>
Finalizing Session 1 to 8 (10 minutes)	Finalizing	<ul style="list-style-type: none"> · Physical exercise for finalizing · Stating one's feeling · Saying good bye 	

were modified based on the Han Kwang Ill's laughter therapy (Hahn, 2006) for older adults to follow easily. For example, originally in the 'a choo-choo game', when a therapist leads saying 'choo' first, a client responds saying 'choo' and when the therapist leads saying 'choo-choo' the client also responds saying 'choo-choo.' For this study, however, choo-choo game was modified. The PI and the clients raised their hands at the same time saying 'choo-choo' and then lowered their hands back saying 'choo-choo' again so that the clients followed what the PI says and does slowly.

The laughter-therapy sessions were 60 minutes because shorter sessions were not effective in relieving stress in previous studies (Kim & Lee, 1999; Yun & Kim, 2009). The current laughter-therapy was offered two times a week, a total of four weeks, because more than four sessions of laughter-therapy have proven to be effective in previous studies (Shin, 2010). The laughter-therapy of this study was provided at a lounge room because that room was the most cozy and pleasant environment in the care facility.

E. Data Analysis

The data analysis was conducted using the SPSS-WIN version 16.0 program and the specific data analysis was as follows.

- Descriptive statistics were used to describe the participants' characteristics.
- χ^2 -test, t-test, and Fisher's exact test were used to

examine the homogeneity at pretest between the groups in the participants' characteristics.

- An analysis of covariance (ANCOVA) was conducted to compare mood and life satisfaction between the groups, controlling for covariates (education, mood, and life satisfaction).

RESULTS

A. Homogeneity of general characteristics and study variables at pretest

A total of 48 residents completed participation in this study (24 in the experimental group and 24 in the control group). In the experimental group, over half of the participants were women (58.3%), 87.5% of participants had no spouse and graduated from elementary school and/or higher educational institutes. Most participants in the experimental group had chronic disease (95.8%) and no religion (62.5%). In the control group, over half of the participants were women (78.3%) and all participants had no spouse (100.0%). Most participants in the control group had chronic disease (83.3%), no religion (62.5%) and no education (79.2%). There was no significant difference in general characteristics between both groups except education. The initially significant difference in education between two groups was controlled using ANCOVA to answer the hypotheses (Table 2).

Initial levels of mood state and life satisfaction were significantly different between the experimental group

Table 2. Homogeneity Test for General Characteristics between Experimental and Control Group (N=48)

Characteristics	Categories	Exp. (n=24)	Cont. (n=24)	χ^2 or t	p
		n (%) or M±SD	n (%) or M±SD		
Age (year)		78.83±7.76	79.88±9.20	-0.42	.673
Gender	Male	10 (41.7)	5 (21.7)	1.32	.212
	Female	14 (58.3)	18 (78.3)		
Religion	Yes	9 (37.5)	9 (37.5)	0.00	1.000
	No	15 (62.5)	15 (62.5)		
Education	No formal education	3 (12.5)	19 (79.2)	8.71	.003 [†]
	>Elementary school	21 (87.5)	5 (20.8)		
Having spouse	Yes	3 (12.5)	0 (0.0)	3.13	.234 [†]
	No	21 (87.5)	24 (100.0)		
Chronic disease	Yes	23 (95.8)	20 (83.3)	1.96	.348 [†]
	No	1 (4.2)	4 (16.7)		
Duration of stay in care facilities (months)	< 12	7 (29.1)	3 (12.5)	1.97	.286 [†]
	> 12	17 (70.9)	21 (87.5)		

Exp.=experimental group; Cont.=control group.

[†] Fisher's exact test.

and control group ($t=3.41, p=.001$; $t=4.10, p<.001$), the differences were statistically controlled using ANCOVA for data analysis. The initial mood state and life satisfaction levels in both groups are described in Table 3.

B. Effects of laughter-therapy on mood and life satisfaction

Two research hypotheses were tested in this study. A $p<.05$ was established for the acceptance of each hypothesis. Mean levels of mood and life satisfaction at the initial time (pretest) and the levels after the last session of laughter-therapy and usual care (posttest) are displayed in Table 4 and Table 5.

a) Hypothesis 1

The ANCOVA revealed that the mood scores of the older adults who participated in laughter-therapy at care facilities were significantly lower than those of control group ($F=89.99, p<.001$). Therefore, hypothesis 1 was supported. Under the mood, all sub-categories' scores including tension ($F=45.82, p<.001$), depression ($F=55.43, p<.001$), anger ($F=28.16, p<.001$), vigor ($F=57.69, p<.001$), fatigue ($F=44.36, p<.001$) and confusion ($F=14.24, p<.001$) in laughter therapy group were significantly lower than control group (Table 4).

b) Hypothesis 2

The ANCOVA revealed that the life satisfaction scores of the older adults who participated in laughter-therapy at care facilities were significantly higher than those of control group ($F=100.68, p<.001$). Therefore, hypothesis 2 was supported. Under the life satisfaction, all sub-categories' scores including emotional field ($F=23.03, p<.001$), experience field ($F=104.43, p<.001$) and comparative satisfaction field ($F=33.11, p<.001$) in laughter therapy group were significantly higher than control group (Table 5).

DISCUSSION

The findings of the study showed that the mood state and life satisfaction in older adults at care facilities were improved with laughter-therapy. The positive outcome of the laughter-therapy on mood was consistent with other studies even though the research settings were different (Chung, 2008; Myeong, 2010). Myeong (2010) provided 60 minutes of laughter-therapy with a total of four sessions one time a week for older adults in a senior welfare center. In Myeong (2010)'s study, participants showed significantly decreased mood levels when the therapy had been completed (Myeong, 2010). Chung (2008) provided laughter therapy to healthy older adults in the community. In Chung (2008)'s study, 60 minutes of laughter-therapy was provided with a total of five sessions for a week. The laughter-therapy included watching VTR, playing games, singing, trying different types of laughing and so on. The subjects in the laughter therapy group showed significantly improved life satisfaction levels as compared to the control group. Thus, the findings of this study were consistent with the findings of the previous studies in terms of the fact that the laughter- therapy improved mood and life satisfaction.

Laughter-therapy in this study included eight sessions throughout four weeks. The eight sessions were offered consistently, but mood state and life satisfaction were

Table 3. Homogeneity Test for Mood State and Life Satisfaction between Experimental and Control Group (N=48)

Variables	Exp. (n=24)	Cont. (n=24)	t	p
	M±SD	M±SD		
Mood	2.29±0.94	1.53±0.55	3.41	.001
Tension	2.28±1.21	1.43±0.78	2.90	.006
Depression	2.45±1.20	1.18±0.64	4.61	.000
Anger	1.96±1.16	1.03±0.64	3.42	.001
Vigor	2.98±1.04	3.29±0.95	-1.08	.288
Fatigue	2.35±1.36	1.15±0.78	3.75	.000
Confusion	1.71±0.79	1.08±0.45	-3.41	.001
Life satisfaction	1.61±0.40	2.02±0.29	4.10	<.001
Emotional field	1.83±0.62	2.28±0.60	2.55	.014
Experience field	1.60±0.47	1.88±0.40	2.17	.035
Comparative satisfaction field	1.39±0.38	1.92±0.31	5.19	<.001

Exp.=experimental group; Cont.=control group.

Table 4. Effect of Laughter Therapy on Mood State between Experimental and Control Group (N=48)

Variables	Groups (n=24)	Pretest	Posttest	F [†]	p
		M±SD	M±SD		
Mood	Exp.	2,29±0,94	1,34±0,56	89,99	< .001
	Cont.	1,53±0,55	1,54±0,55		
Tension	Exp.	2,28±1,21	1,22±0,73	45,82	< .001
	Cont.	1,43±0,78	1,45±0,77		
Depression	Exp.	2,45±1,20	1,20±0,69	55,43	< .001
	Cont.	1,18±0,64	1,14±0,65		
Anger	Exp.	1,96±1,16	0,98±0,61	28,16	< .001
	Cont.	1,03±0,64	1,11±0,60		
Vigor	Exp.	2,98±1,04	2,23±0,68	57,69	< .001
	Cont.	3,29±0,95	3,28±0,94		
Fatigue	Exp.	2,35±1,36	1,19±0,79	44,36	< .001
	Cont.	1,15±0,78	1,18±0,84		
Confusion	Exp.	1,71±0,79	1,23±0,52	14,24	< .001
	Cont.	1,08±0,45	1,08±0,43		

Exp. =experimental group; Cont. =control group.

[†] ANCOVA with pretest value as covariate.

Table 5. Effect of Laughter Therapy on Life Satisfaction between Experimental and Control Group (N=48)

Variables	Groups (n=24)	Pretest	Posttest	F [†]	p
		M±SD	M±SD		
Life satisfaction	Exp.	1,61±0,40	2,47±0,28	100,68	< .001
	Cont.	2,02±0,29	1,98±0,26		
Emotional field	Exp.	1,83±0,62	2,33±0,29	23,03	< .001
	Cont.	2,28±0,60	2,22±0,58		
Experience field	Exp.	1,60±0,47	2,65±0,40	104,43	< .001
	Cont.	1,88±0,40	1,85±0,33		
Comparative satisfaction field	Exp.	1,39±0,38	2,43±0,36	33,11	< .001
	Cont.	1,92±0,31	1,88±0,29		

Exp. =experimental group; Cont. =control group.

[†] ANCOVA with pretest value as covariate.

measured only one time right after the last session of the laughter-therapy completed because there were not much free time for the participants due to standard operations of care facilities such as frequent nursing care schedules or participants' personal schedules. If the standard operations of the care facilities allowed for the researchers to measure the effects of laughter- therapy on a weekly basis throughout the study, it could be more helpful to show the effects of laughter- therapy consistently.

Even though the laughter-therapy offered in this study was modified to fit into older adults, the therapy needs to be individualized to meet the residents' health

conditions such as cognition or activity levels. In this study, the cognitive level of each client was not checked by a certain measurement with regular basis, but he/she was communicable enough to answer the formal consent form and questionnaires. The laughter- therapy included relatively simple and easy activities such as a choo-choo game, a game of rock, paper, scissors, and laughing to meet older adults' functions.

Laughter-therapy was offered to the experimental group and usual care to the control group and also to have appropriate number of participants from two similar-sized care facilities. Even though the number of the beds and staff from each care facility were mentioned,

the subjects' characteristics of the facilities could not be exactly the same and the different characteristics may affect the resident's mood and life satisfaction levels indirectly. For example, the education levels between the two facilities were initially different. Because the education level is significantly related to a person's life satisfaction, it is important to select two facilities which are similar in education level even though it is controlled by statistics. Thus, there is a need to minimize the difference of demographic data in both care facilities when comparing the effect of nursing interventions in two different settings. In addition, for further studies, more concrete factors to affect mood and life satisfaction including subjects' demographic characteristics in each facility need to be investigated.

The Cronbach's alpha value of the original POMS-B to measure mood state was high (0.70 to 0.74) in McNair and colleagues (2003)'s study, but the value of the POMS-B Korean version was low (0.59 to 0.85) in Yeun and Shin-Park (2006) study. The POMS-B was used to measure mood state in this study because it has been commonly used in South Korea and already translated into Korean even though the Cronbach's alpha value of the Korean version was low. For further studies, the validity and reliability of the instrument to measure mood state which reflect Korean mood state needs to be investigated.

The findings of the study suggest the importance of offering laughter to the persons staying at care facilities to improve their mood and life satisfaction. Currently, in South Korea, the number of older adults admitted to care facilities has increased as the population of older adults has increased and the meaning of filial piety to children has changed. Older adults staying at care facilities show a higher level of mood and lower level of life satisfaction as compared to healthy community dwelling persons (Kim, Park, & Kim, 2008; Lee, 2007) and laughter-therapy would be considered a useful tool to improve their mood and life satisfaction because it is relatively easy and not invasive for older adults to follow.

CONCLUSION

This study investigated the effect of laughter-therapy on mood and life satisfaction in older adults staying at care facilities in South Korea. Eight sessions of one hour laughter-therapy significantly affected the mood state and life satisfaction in older adults, and the findings were consistent with those of older adults in other settings.

The findings of this study suggest that laughter-therapy is effective to improve mood and life satisfaction of older adults staying at care facilities.

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