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Original Article

The Effects of a Storytelling Intervention Program for Nursing Home Residents in Korea

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SUMMARY

Background: Most older people living in Korean nursing homes (NH) have high physical dependency and experience disconnection from social relationships, which can cause psychological problems such as depression. In an effort to solve these problems, we performed a storytelling intervention.
Methods: A quasi-experimental pre-post test, follow-up, and control group design was used to investigate the effect of a storytelling program on nursing home residents. Participants from four nursing homes were assigned to the experimental group (n = 21) and control group (n = 21). The final sample included 21 participants who participated in the storytelling grogram for six weeks and 21 control participants.
Results: Social support (F = 4.714, p = 0.012), interaction between nurses and NH residents (F = 5.972, p = 0.019), and a person-centered climate (F = 3.801, p = 0.026) showed a significant difference following the storytelling program intervention. Further, social support, the interaction between nurses and NH residents, and emotional expressions were significantly increased in the intervention group as opposed to the control group at four weeks post intervention.
Conclusions: Storytelling programs should be used as effective interventions for nursing home residents.

1. Introduction

Korean people over 65 years old comprise 14.9% of the country's population, a figure expected to increase up to 46.5% by 2067, causing Korea to become one of the world's most super-aged societies.[1] With the growth of the elderly population, the number of nursing homes (NH) has increased from 1,332 in 2008 to 3,390 in 2018, with 1,773,118 NH residents.[2] High-quality care focused on the improvement of the quality of life of NH residents, rather than the size or number of NHs, will be considered increasingly more important.[3]

Because they live with dementia, stroke, and other geriatric diseases,[4] NH residents are highly dependent on regular daily life activities. When they enter NHs, residents often become disconnected from their family or friends and experience psychological difficulties such as loneliness and depression; residents must form new relationships with other residents or employees in the NH.[5] In the facility-centered setting, the daily life of the NH resident is organized and operated in an environment similar to the medical ward; mealtimes and shower times are scheduled to the staff's convenience, and the facility setting is similar to a hospital.[6] A storytelling intervention based on residents' preferences and the interaction of residents in a NH, however, can contribute to transforming a facility-centered care culture into a person-centered care culture.

Older people living in NHs in Korea are known to have higher emotional, social, and spiritual care needs than physical ones.[7] In order to meet these needs, person-centered care (PCC), which is provided by approaching residents individually, is needed, rather than the existing methods that focus on physical care. It has been reported that PCC can solve psychological and social problems common in older people, such as loneliness and depression, by promoting communication between the elderly and medical staff.[8] Halberg and Norberg[9] pointed out that the most difficult situation faced by caregivers of older people with low cognitive function is the latter's communication disorder, which makes them feel helpless. Storytelling can be an effective intervention: it can function as a tool that broadens the elderly's scope of communication with their families and caregivers in NHs.

A storytelling intervention is a holistic creative process in which nurses provide photographs or uncompleted short fairy tales and let residents create or complete stories from the prompts.[10] There are no correct or expected answers in storytelling interventions, and older people with low cognitive function can participate; therefore, this intervention method minimizes the burden of achievement and shows an interest in individuals.[11] Storytelling is effective in maintaining cognitive function by helping older people recall their memories, stimulating curiosity, and promoting their participation in activities. Storytellers become immersed in the story and develop the ability to express themselves, since narrative elicits people's

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great desire to speak and write using their broad imaginations.[12]

Storytelling interventions can be used with other residents, employees, and family members in NHs. When older people present their stories, their stories can interact with the story created by the caregiver, and NH residents can come up with new interpretations and meanings, improving positive interactions with each other.[12] In particular, caregivers who experience positive interactions through storytelling tend to find a new abilities in older people with dementia and make efforts to recover improve their relationships with them older people.[13] Storytelling has been reported to reduce caregivers' job stress by changing their cognitive frame to self-healing directions and to strengthen care competency.[14] To evaluate if NH residents experience person-centered interaction with caregivers and a person-centered environment, it is essential to develop a culture that displays PCC.

In this regard, it is necessary to investigate how the experience of creating valuable stories with others in a supportive environment affects the elderly's cognitive, emotional, and social aspects. However, few studies have focused on the effects of storytelling intervention in these aspects. Thus, this study examines the effects of storytelling intervention on the elderly living in NHs.

2. Materials and methods

2.1. Sample and recruitment

This is a quasi-experimental study using a nonequivalent control group and non-synchronized pretest-posttest design to confirm the effectiveness of a six-week storytelling program for NH residents (Table 1). The study was conducted between May and June 2019 at four NHs in Jinju, South Gyeongsang Province, South Korea. NHs provide necessary conveniences for older people admitted in the facility, such as meals, nursing care, and other daily needs.[15] The researchers were recommended by four NHs, and the NH Director and the head nurse in the nursing department recommended residents who could answer the questionnaire survey and participate in the storytelling program. Convenience sampling was conducted on older people living in two 200-bed NHs (A, B) and two 100-bed NHs (C, D) in Jinju City. The experimental group (A, C) and the control group (B, D) were assigned to NHs of a similar size. To prevent the participants from being contaminated, single blind was performed so that the participants wouldn't know which group they belonged to, either the experimental group or the control group. Before the storytelling intervention began, it was confirmed that the participants had no experience of cognitive function intervention and interaction enhancement within the last 6 months.

The recruitment of the participants is summarized in Figure 1. The our selection criteria of the object were people 1) people over 65 years old (defined as "elderly" according to the classification criteria for aging societies used by the United Nations and the Korean Welfare Law) who were, 2) people living in one of the four the NHs and who, and 3) people who could communicate sufficiently with the others regardless of their cognitive function scores identified via The Korean version of the Mini-Mental State Exam (MMSE-K). Our exclusion criteria were people with advanced terminal illness.

To achieve the research purpose, the sample size was calculated using the G*power 3.1.9.2 program. For a sufficient statistical power of 0.80, an effect size of 0.5 and a minimum of 35 participants were required for repeated measures ANOVA, as per Cohen's power analysis 16. Allowing up to 30% loss to follow-up, 25 participants were recruited for the experimental group and another 25 for the control group. The final sample included 21 participants each (84%) in the experimental and control group. This study was approved by the Institutional Review Committee of Gyeongsang National University (IRB approval number: GIRB-A19-Y-0022) and written informed consent was obtained from each participant.

The purpose and method of the study were explained to the heads of the facility and the nursing department to obtain their recommendations for participants. Another study was conducted pre-intervention (one week before the program) and post-intervention (one week and four weeks after the program) on informed participants who agreed to help confirm the persistence of the program's effects. The control group was also measured three times at the same time and the same interval as the experiment group. After providing a 6-week intervention for the experimental group and upon completion of the post-surveys, a 6-week program was provided to the control group.

2.2. Measurements

To ensure the accuracy and consistency of measurements, two nursing students were appointed as research assistants and trained prior to the study on how to measure the variables. Cognitive function was evaluated using the MMSE-K.[17] The total MMSE-K scores range from 0 to 30 points. Scores of 0–17 are considered "severe cognitive impairment,"; scores of 18–23 are "mild cognitive impairment," and scores above 24 are "no cognitive impairment." Cronbach's alpha was 0.72 in this study.

Social support was evaluated using the Multidimensional Scale of Perceived Social Support (MSPSS).[18] The MSPSS is composed of 12 items with scores ranging from 1 to 5; the higher the average score, the higher the perceived social support. Cronbach's alpha was 0.78 in this study.

Interaction between nurses and NH residents was evaluated

Table 1
Time Series Group Design.

Group	Pre-test	Treatment	Post-test
Experimental group	E_1	X	E_2, E_3
Control group	C_1		C_2, C_3

E_1 & C_1 = pre-data collection (general characteristics); X = experimental treatment (Storytelling program intervention); E_2, E_3 & C_2, C_3 = post-treatment (1 week, 4 weeks) data collection.

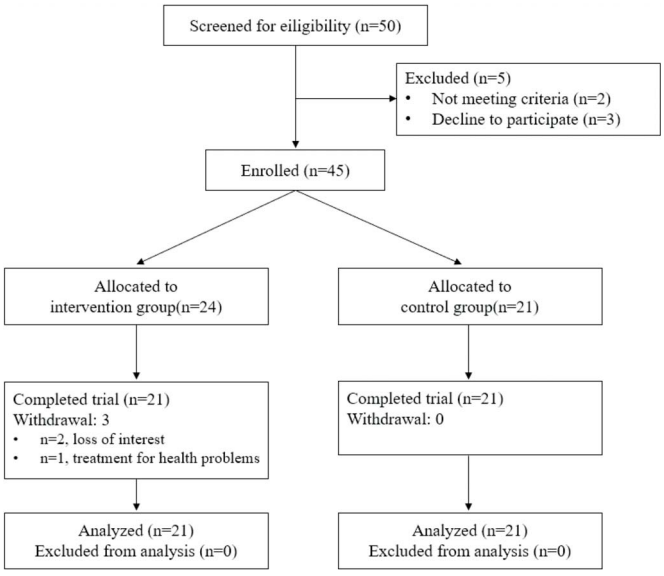

Figure 1. Research flow chart.

through the Korean version of the Nurse-Patient Interaction Scale (K-NPIS).[19] The K-NPIS is composed of 14 items with scores ranging from 1 to 10; higher scores indicate better nurse-patient interaction. Cronbach's alpha was 0.91 in this study.

Person-centered settings were evaluated using the Korean Person-centered Climate Questionnaire, Resident version (KPCQ-R).[7] The KPCQ-R is composed of 17 items with three sub-areas: safety, everydayness, and hospitality. Scores range from 1 to 6, and the higher the score, the more person-centered the environment of the NH. Cronbach's alpha was 0.89 in this study.

Relationships with others were evaluated using the Relationship Change Scale (RCS).[20] The RCS is composed of 25 items with scores ranging from 1 to 5. The higher the score, the better the interpersonal relationship. Cronbach's alpha was 0.89 in this study.

Emotional expressions were evaluated using the Attitudes Toward Emotional Expression (ATEE).[21] The ATEE is composed of 20 items, and scores range from 1 to 5. The higher the score, the more emotional expression is suppressed and a positive result is expected. Cronbach's alpha was 0.84 in this study.

2.3. Intervention

We conducted a storytelling session for one hour once a week at four NHs in Jinju. The order was made based on a study conducted using storytelling intervention with TimeSlips.[22] To implement the program in the NHs, reseachers explored the history, philosophy, implementation, materials, and information of the timeslips on the official TimeSlips website. Based on this, training was conducted to ensure storytelling intervention to be implemented in a consistent and standardized way. Participants were asked to sit at regular intervals at a long table, and the host captured their attention by directing them in simple physical exercises. Everyone was introduced by name. After that, the storytelling session started, as indicated by turning on an LED candle on the table. Participants were shown two 15*20 (cm) sized photos, and the host allowed enough time for the participants to observe the photos. Each photo was big enough to see easily and illustrated a story that stimulated residents' imaginations without much effort.

Open-ended questions were asked to encourage imagination and individual expression. The host gave the participants enough time to respond to the photos without modifying the participant's stories,[12] and asked suggestive questions such as "What is the child's name?" "What is this person feeling based on their facial expression?" "What is the relationship between the two?" and "What do you think will happen to him soon?" The host summarized each participant's story on the blackboard and added more information from the participant's answers to complete the story.

The assistant, who was previously trained on the goals of each session, asked timely and interesting questions to prevent participants from feeling alienated. In the process, the assistant adopted appropriate skills such as support, encouragement, and positive reinforcement.

The researchers met with the participants' caregivers in advance to inform them of the study's purpose. They were also told to avoid correcting the participants even if they gave wrong answers and to ask open-ended questions, among other precautions. The caregivers' presence ensured a familiar and safe environment for the participants, and the caregivers could interact with the participants in a new way, allowing them to experience the residents' changing mental processes.

At the end of each session, the host presented the combined story and asked participants to create a title. Each session lasted about an hour, and two stories were created from two photographs. The host captured their attention again with a short exercise, expressed appreciation for their participation, and finished the session by turning off the LED candle. The goals of the storytelling program and the theme of each session are as follows (Table 2). During the six weeks of the intervention, researchers had time to comment on the storytelling process once a week.

2.4. Statistical analyses

IBM SPSS Statistics 24.0 was used for statistical analysis of data. The general features of subjects were analyzed by frequency, percentage, mean, and standard deviations. The internal consistency reliability test of the measurement tool was confirmed by Cronbach's alpha coefficient. General characteristics, cognitive functions, social support, nurse-patient interaction, person-centered climate, relationship change, and homogeneity tests of emotional expressions were analyzed by the χ^2 test, Fisher's exact test, and independent t-test. To evaluate the effects of the storytelling intervention program on the experimental group as compared to the control group, satisfaction of repeated measurements of ANOVA, paired t-test, and the storytelling intervention program were analyzed by means of mean deviation and standard deviation.

3. Results

A total of 42 NH residents, 21 in the experimental group and 21 in the control group, completed the storytelling program intervention. Table 3 indicates the general characteristics of the study subjects. There was no significant difference between the two groups ($p > 0.05$) or in the scores of the dependent variables between the two groups ($p > 0.05$). Thus, it was confirmed that the two groups were homogeneous.

Social support of the NH residents showed a significant difference in interaction between time and group after the storytelling program intervention (F = 4.714, $p = 0.012$) (Figure 2). The interaction between nurses and NH residents was significantly different between the group (F = 4.707, $p = 0.036$), and the interaction be-

Table 2
Composition of storytelling program.

Week	Theme	Goal	Measurement
1st	Who is this person?	Through creating new stories, cognitive is improved.	MMSE-K
2nd	How does this person feel now?		
3rd	How does this person feel now?	Through the process of completing their story, emotional expression is promoted.	ATEE
4th	Why did this person think so?		
5th	What's the relationship between these two?	Through participating in social activities, positive interpersonal relationships are formed.	RCS
6th	What are these two talking about now?		K-NPIS
			MSPSS
			KPCQ-R

Table 3
General characteristics.

Characteristics	Categories	Expe (n = 21)	Cont (n = 21)	t or χ^2	p
		Mean ± SD or n (%)	Mean ± SD or n (%)		
Sex	Male/female	1 (2.4)/20 (47.6)	6 (14.3)/15 (35.7)	4.679	0.093[a]
Age (year)		84.62 ± 8.29	85.19 ± 7.49	-0.234	0.816
	60~69	2 (4.8)	1 (2.4)	0.984	1.000[a]
	70~79	1 (2.4)	2 (4.8)		
	80~89	12 (28.6)	11 (26.2)		
	≥ 90	6 (14.3)	7 (16.7)		
Education level	No school education	11 (26.2)	11 (26.2)	5.524	0.355[a]
	Elementary school	9 (21.4)	5 (11.9)		
	Middle school	1 (2.4)	2 (4.8)		
	High school	0 (0)	2 (4.8)		
	College	0 (0)	1 (2.4)		
Marriage	Married	3 (7.1)	6 (14.3)	2.571	0.463[a]
	Divorcement	0 (0)	1 (2.4)		
	Bereavement	16 (38.1)	12 (28.6)		
	Single	2 (4.8)	2 (4.8)		
Period of admission (month)	< 6	5 (11.9)	7 (16.7)	4.692	0.320[a]
	6~11	5 (11.9)	1 (2.4)		
	12~17	5 (11.9)	5 (11.9)		
	18~23	1 (2.4)	0 (0)		
	≥ 24	5 (11.9)	8 (19.0)		
Number of visit	Almost every day	1 (2.4)	1 (2.4)	3.804	0.578[a]
	Once a week	8 (19.0)	6 (14.3)		
	Once a month	3 (7.1)	5 (11.9)		
	Once 6 month	4 (9.5)	7 (16.7)		
	Once a year	2 (4.8)	0 (0)		
	None	3 (7.1)	2 (4.8)		
MMSE-K		15.90 ± 4.92	17.05 ± 4.28	-0.803	0.427
	Severe cognitive impairment	10 (23.8)	5 (11.9)	0.000	1.000[a]
	Mild cognitive impairment	10 (23.8)	14 (33.3)		
	No cognitive impairment	1 (2.4)	2 (4.8)		

Expe = experimental group; Cont = control group; MMSE-K = mini-mental state examination. [a] Fisher's exact test.

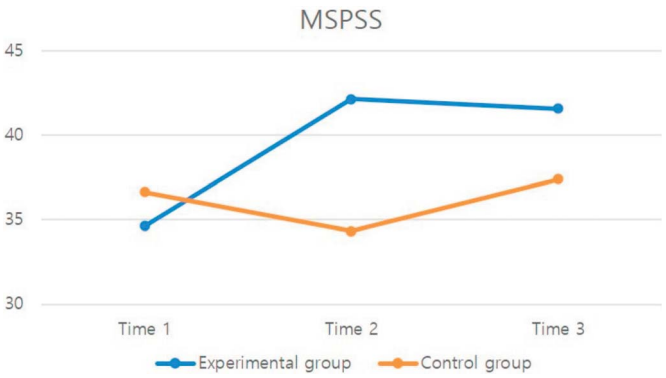

Figure 2. MSPSS of intervention and control groups during intervention.

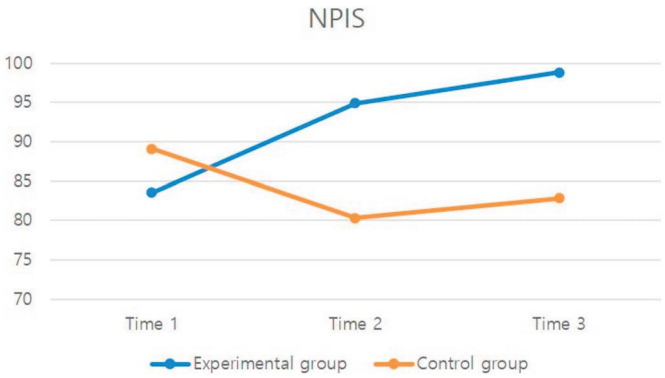

Figure 3. NPIS of intervention and control groups during intervention.

tween time and group (F = 3.960, p = 0.023) (Figure 3). The statistical analysis for person-centered climate showed a significant main effect for group (F = 10.875, p = 0.002) and interaction between time and group (F = 3.801, p = 0.026) (Figure 4). Older people's emotional expression showed a significant difference in time (F = 3.170, p = 0.047) (Table 4).

After the intervention, social support increased significantly in the intervention group but not in the control group at pre-post 1 group (mean differences in the intervention vs. control group: 7.524 vs. 2.286 respectively, p = 0.002) and pre-post 2 group (mean differences in the intervention vs. control group: 6.952 vs. -0.762 respectively, p = 0.002). The results were same for interactions between nurses and older people (mean differences in the intervention vs. control group: 14.952 vs. -6.286 respectively, p = 0.020), emotional

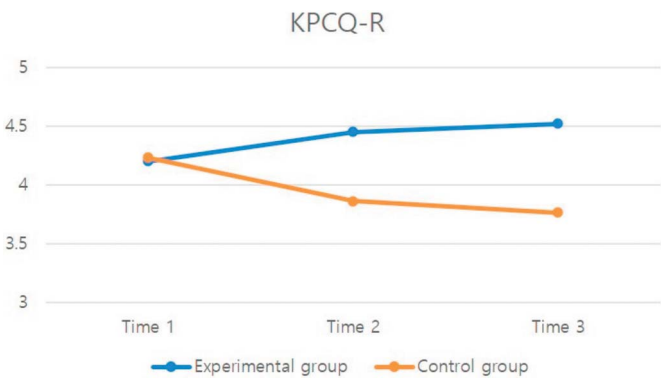

Figure 4. KPCO-R of intervention and control groups during intervention.

Table 4
Outcomes of intervention and control group during storytelling program intervention.

Variable	Group	Pretest	Posttest 1	Posttest 2	Sources	F	p
		M ± SD	M ± SD	M ± SD			
MMSE-K	Expe (n = 21)	15.90 ± 4.92	15.14 ± 5.70	15.90 ± 5.12	Group	0.604	0.442
	Cont (n = 21)	17.05 ± 4.28	16.10 ± 5.59	16.86 ± 4.43	Time	0.590	0.559
					Time*Group	0.017	0.984
MSPSS	Expe (n = 21)	34.62 ± 7.68	42.14 ± 7.41	41.57 ± 10.53	Group	3.077	0.087
	Cont (n = 21)	36.62 ± 8.56	34.33 ± 9.34	37.38 ± 7.85	Time	2.972	0.057
					Time*Group	4.714	0.012
NPIS	Expe (n = 21)	83.52 ± 23.30	94.86 ± 13.70	98.48 ± 19.78	Group	4.707	0.036
	Cont (n = 21)	89.10 ± 23.12	80.33 ± 20.33	82.81 ± 18.59	Time	0.550	0.579
					Time*Group	3.960	0.023
KPCQ-R	Expe (n = 21)	4.20 ± 0.78	4.45 ± 0.59	4.52 ± 0.60	Group	10.875	0.002
	Cont (n = 21)	4.23 ± 0.82	3.86 ± 0.80	3.76 ± 0.63	Time	0.135	0.873
					Time*Group	3.801	0.026
AEE	Expe (n = 21)	54.86 ± 13.38	60.84 ± 14.31	65.62 ± 13.44	Group	0.098	0.756
	Cont (n = 21)	59.95 ± 8.87	62.19 ± 11.77	61.57 ± 12.24	Time	3.170	0.047
					Time*Group	1.685	0.192

Expe = experimental group; Cont = control group; MMSE-K = mini-mental state examination; MSPSS = multidimensional scale of perceived social support; NPIS = nurse-patient interaction scale; KPCQ-R = Korean person-centered climate questionnaire-resident; AEE = attitudes toward emotional expression.

expression of older people (mean differences in the intervention vs. control group: 10.762 vs. 1.619 respectively, $p = 0.001$) in the intervention group than control group at pre-post 2 (Table 5).

4. Discussion

This study was conducted to develop a storytelling program for NH residents and to examine its effect on an experimental group over the course of six sessions. The researchers monitored the attendance rate, time compliance, and whether the implementation was proceeding according to plan to evaluate the program's progress.

Social support increased to 42.14 points after one week of intervention compared to 34.62 points before storytelling intervention, and slightly increased to 41.57 points after four weeks of intervention. There was a significant difference between the control group and the experimental group, a finding similar to the results of George and Houser's study[23] that the relationship between resident-to-resident, resident-to-staff, and staff-to-staff was improved while sharing experiences during storytelling intervention, and that participants came to regard each other as social communities. In other words, storytelling provides a support system for NH residents who share their stories with other residents, staff, and family members. Social support perceived by older people is a major factor in improving the quality of life in old age,[24] and it follows that storytelling intervention can improve quality of life for NH residents.

Emotional expressions showed significant differences over time; after the intervention, the experimental group had higher emotional expression scores than the control group. This is similar to the results of a study[25] conducted on 91 older people with dementia, which showed that creative expression therapy had a positive effect on mood, confidence, and conviction. In addition, in a study on seven patients with dementia,[26] storytelling intervention was found to be helpful for their social interaction and emotional state. While participating in the intervention, older people were able to express their feelings comfortably, as if they were at home, without being disconnected from the outside world. When the participants' ability to express themselves improved, they were able to communicate their needs clearly, thereby reducing the burden on caregivers.[25] Considering that most of the subjects in this study were older people with mild and severe cognitive impairment, storytelling interventions that contributed to positive emotions of NH residents were effective interventions.

Nurse-patient interactions increased to 94.86 points after one

Table 5
Repeated measures ANOVA of storytelling program outcomes within group.

	Time (I)	Time (J)	Expe (n = 21)		Cont (n = 21)	
			Mean diff (J-I)	p-value	Mean diff (J-I)	p-value
MMSE-K	Pre-test	Posttest 1	-0.762	0.500	0.952	0.400
	Pre-test	Posttest 2	-3.553	1.000	0.190	0.810
	Posttest 1	Posttest 2	0.762	0.508	-0.762	0.508
MSPSS	Pre-test	Posttest 1	7.524	0.002	2.286	0.310
	Pre-test	Posttest 2	6.952	0.002	-0.762	0.721
	Posttest 1	Posttest 2	-0.571	0.802	-3.048	0.230
NPIS	Pre-test	Posttest 1	11.333	0.055	-8.762	0.134
	Pre-test	Posttest 2	14.952	0.020	-6.286	0.313
	Posttest 1	Posttest 2	3.619	0.558	2.476	0.688
KPCQ-R	Pre-test	Posttest 1	0.252	0.295	-0.372	0.125
	Pre-test	Posttest 2	0.322	0.121	-0.471	0.026
	Posttest 1	Posttest 2	0.070	0.728	-0.098	0.627
AEE	Pre-test	Posttest 1	6.000	0.112	2.238	0.548
	Pre-test	Posttest 2	10.762	0.001	1.619	0.596
	Posttest 1	Posttest 2	4.762	0.223	-0.619	0.873

Expe = experimental group; Cont = control group; MMSE-K = mini-mental state examination; MSPSS = multidimensional scale of perceived social support; NPIS = nurse-patient interaction scale; KPCQ-R = Korean person-centered climate questionnaire-resident; AEE = attitudes toward emotional expression.

week of intervention compared to 83.52 points before intervention. Interactions slightly increased to 98.48 points after four weeks of intervention. The nurse-patient interaction of the experimental group showed a significant difference between the groups (F = 4.707, p = 0.036) and the interaction between time and group (F = 5.972, p = 0.019). This result is similar to the significant increase in positive social interactions and verbal communication found in the study by Phillips et al.,[12] which also delivered a six-week storytelling program to NH residents. The increase in nurse-patient interaction in our study is thought to be due to spontaneous communication initiated by the NH residents, which led to continuous and positive conversations with caregivers and other residents who participated in the intervention. In terms of PCC, the nurse-patient relationship is based on respect for the patient's autonomy in decision making. The quality of this relationship has a direct impact on the quality of care.[27] Therefore, nurses should allow patients to participate in decision making and use communication skills such as empathy and active listening to form positive relationships.

The sense of having a person-centered climate increased to 4.45 points after one week of storytelling intervention compared to 4.20 points before storytelling intervention, with a slight increase to 4.52 points after four weeks of intervention. The person-centered climate of the experimental group showed a significant difference between the groups (F = 10.875, p = 0.002) and the interaction between time and group (F = 3.801, p = 0.026). This is similar to George and Houser's study,[23] which shows that storytelling intervention provided older people with the experience of freely communicating with others and formed a person-centered climate. Integrating older people into a storytelling circle to make them feel like a part of the resident community facilitates their acclimatization to the new NH setting. It also helps them create connections and better understand their fellow residents.[28] Therefore, through interaction-based activities with familiar people such as caregivers and other residents, the psychosocial environment of NHs can be transformed to a more person-centered one.

There was no significant improvement in cognitive function after the intervention, which is contrary to the results of previous studies that had a significant effect on the improvement of cognitive function of older people with dementia.[13] This suggests that our study subjects had mild and severe cognitive impairment due to old age, and therefore there was a limit to improvements in cognitive function in the short six-week storytelling intervention program.

This study shows that it is possible to make NH living more meaningful. Participants can express their emotions while creating stories, interact with caregivers, share experiences, and create support systems. In NHs, storytelling programs using only a simple photo can be a effective intervention.

This study had several limitations. The intervention period was relatively short. The participants were recruited from four NHs in Korea, and the study sample was small. Thus, the results may not be generalizable to a larger population. Future research involving larger, more diverse, multi-center samples is needed to determine whether storytelling interventions improve cognitive function and positively affect emotional expression, social support, nurse-patient interaction, and person-centered climate.

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Declarations of interest

None.

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