

Utility of Making Life History Book Using Digital Instruments in Reminiscence Therapy for Psychological-Wellbeing of Elders

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Abstract

Background: Reminiscence therapy has potential to improve elder's cognition or psychological well-being, and we performed a new style of reminiscence therapy. **Purpose:** The purpose of this study was to investigate, 1) utility of reminiscence therapy for elders with a Life History Book using digital instruments on cognition, life satisfaction, and nostalgia proneness (Negative, Positive, Reminiscence); 2) relationship between life satisfaction and nostalgia proneness; 3) evaluation of a Life History Book and impression of reminiscence therapy; and 4) duration of intervention. **Method:** Ten elders participated in reminiscence therapy and completed questionnaires such as DASC for cognitive function, Nostalgia Scale, and Life Satisfaction Scale pre and post intervention. **Results:** The score of DASC and Life Satisfaction Scale did not change, and the Nostalgia Proneness-Positive significantly related with Life Satisfaction ($r = 0.79$, $p < 0.01$). The Nostalgia Proneness-Positive was the most effective factors for life satisfaction, and participants' satisfaction of making a Life History Book was high. The duration of reminiscence therapy using digital instruments was shorter than a previous study. **Conclusion:** These results suggest that reminiscence therapy prevents to decrease cognitive function, Nostalgia Proneness-Positive may influence on well-being of elders, and using digital instrument was helpful to promote reminiscence therapy.

Keywords

Reminiscence Therapy, Cognitive Function, Life Satisfaction, Nostalgia Proneness

1. Introduction

The number of elder is increasing all over the world and the increasing population of elders is one of the most important issues in the field of health and welfare. Particularly, quality of life or cognitive aspects is important factors. One of the most effective cares for elders is life review. Butler proposed life review and defined life review as natural event for elders in which they recall their past experiences, analyze them in orders, evaluate them, to achieve a more profound self-concept (Butler, 1963). Life review is based on Erikson's developmental theory, in which, an individual tries to achieve integrity. Reminiscence therapy includes both life review in which a person reviews his life deeply and integrity and reminiscence therapy in which a person reviews his life not so deeply.

Bohlmeijer, Roemer, Cuijpers et al. (2007) conducted meta-analysis for effects of life review of elder living in community. Life review has middle effects for subjective happiness. Sharif, Jahanbin, Amirsadat et al. (2018) showed that life review intervention significantly improved the quality of life of the elderly. Liu, Yong, Lou et al. (2021) showed that reminiscence therapy alleviates depressive symptom in older adults as immediate effects.

Woods, O'Philbin, Farrell et al. (2018) conducted meta-analysis of effects of life review on QOL, cognitive function, interaction, behavior, depression for dementia elderly. The effects of life review on QOL are not consistent among researches. There are small effects on QOL of elders at nursing home, but not effects for elders living in community. Wood et al. said that life review has effect to delay to decrease cognitive function about 6 months.

On the other hand, there are studies about Nostalgia (Westerhof & Bohlmeijer, 2014). Holbrook (1993) showed the Holbrook Nostalgia Proneness Scale and Kusumi (2021) made a Japanese version of Nostalgia Proneness Scale, consisting of Positive proneness, Negative proneness, Reminiscence proneness. Kusumi (2021) showed Nostalgic Proneness Positive or Proneness Negative related with life satisfaction positively or negatively by observational studies. Although Nomura (2021) suggested the relation between reminiscence therapy as a clinical intervention and nostalgic proneness from cognitive psychology or personality psychology, there are very few intervention studies. Then we need to investigate if reminiscence therapy promotes nostalgic proneness, and relationships between proneness and life satisfaction.

In these days, digital instrument is used in reminiscence therapy. Huang & Yang (2022) showed the long-term effects of immersive virtual reality reminiscence in people with dementia. There were no significant changes in cognitive function, global standard and caregiver burden immediately after the Virtual Reality (VR) intervention, but there was a significant reduction in depressive symptoms and compared with the cognitive function immediately after VR, it kept declining 3 - 6 months after. Studies of reminiscence therapy using digital instruments are very few. On the other hand, in reminiscence therapy, Ando et al. (2010) made a life review book of cancer patient in life review and gave the

book. Although patients were glad for their life review books, interviewers spent too much time because recorded interview data was translated characters by merchant and making books were heavy loads. To generalize reminiscence therapy in clinical situations, we needed to develop an easy method to make life review book. Then we newly used digital instrument, Real Time Translator (Kimura Information Technology Company, 2022).

The purpose of this study was to investigate, 1) utility of reminiscence therapy for elders with a Life History Book using digital instruments on cognition, life satisfaction, and nostalgia proneness (Negative, Positive); 2) relationship between life satisfaction and nostalgia proneness; 3) evaluation of a Life History Book and impression of reminiscence therapy; and 4) duration of intervention.

2. Method

2.1. Participants.

Participants were 10 elders (2 male, 8 female) who attended community college for elders. Mean age was 77 years old. Inclusion criteria were that a participant communicate with in interviewer and review his life individually. Exclusion criteria was that a participant has serious mental problems and hard to review his life.

2.2. Reminiscence Therapy

The reminiscence therapy consisted of two times session. An interviewer was a clinical psychologist, and she conducted a structured reminiscence therapy. A participant reviewed his life along his development ages such as children age or adulthood age with the interviewer from 60 to 90 minutes once. Interview data was recorded by a digital instrument (Real Time Translator) (Kimura Information Technology Company, 2022), and translated in character at once. Then the interviewer could make his Life History Book using power points as soon as possible. Two weeks later, the interviewer met the participant, showed the book to him, and confirmed the contents of book. If the participant requested some changes, the interviewer made it again and gave it. The participants completed the questionnaires before the interview and after the second session.

2.3. Questionnaires

We used the following questionnaires.

1) Assessment Sheet for Cognition and Daily Function-8 items (DASC) (Japan Geriatric Society, 2018): There are 8 question items about cognition and daily life. Under 10 point is normal.

2) Life Satisfaction Scale (Diener et al., 1985): there were 5 question items about life satisfaction. Participants answered from 1 point (not at all) to 8 (well true). A high score shows high life satisfaction.

3) Nostalgia Proneness Scale: It consisted of 3 factors like Nostalgia Proneness Negative, Positive, and Reminiscence: There are 18 question items measured

from 1 point (not at all) to 8 (well true).

4) Evaluation of making Life History Book: We prepared 3 question items: ① I think it was good for me to make my Life History Book. ② Life History Book makes me to have chance to look back my life. ③ Life History Book makes me to have positive feeling to my life. Participants evaluated these questions from 1 (not at all) to 5 (well true).

5) They described impression about participating in the reminiscence therapy.

2.4. Procedure

We recruited participants through community college for elders, which was set beside NishiKyusyu University in Western Japan. Participants got documents of explanation of this research. The researcher explained about this research and got informed consent who interested the research. The reminiscence therapy consisted of 2 times sessions. Duration of a session is from 60 to 90 minutes. In the first session, a participant reviewed his life along developmental age with the interviewer. Interview data translated into letters and edited in Word. After the first session, the interviewer made a Life History Book editing word data and used power point. In the second session, the participant confirmed the contents of the book. They completed questionnaire pre and post the therapy.

2.5. Data Analysis

We conducted 1) basic statistic and Wilcoxon nonparametric test between pre and post; 2) correlation analysis among each questionnaire; 3) a multiple regression analysis: a dependent variable was life satisfaction, and independent variables were DASC and sub-factors of Nostalgia; 4) mean of evaluation of Life History Book.

2.6. Ethics

We performed this study in accordance with the Declaration of Helsinki. This study was approved from the Research Ethics Committee of Nisikyusyu University (23ZDC11).

3. Results

We showed mean scores of questionnaires (**Table 1**). About DASC, there was no significant difference. It means that cognitive function did not change and keep elder's cognitive function. About Life Satisfaction, there was also no significant difference. About Nostalgia Proneness-Reminiscence and Nostalgia Proneness-Positive increased, though there was no significance.

Next, we conducted correlation coefficient analysis. Since there was no significance between pre and post, we combined data of pre and post.

Life satisfaction significantly correlated with Nostalgia Proneness-Positive ($r = 0.79$). It means that elder who remember positive nostalgia had high life satisfaction. (**Table 2**)

Nostalgia Proneness-Reminiscence related with Nostalgia Proneness-Negative ($r = 0.40$) and Nostalgia Proneness Positive ($r = 0.76$). It means that elders who remember their memories might feel both positive and negative nostalgia.

Moreover, we show the results of multiple regression analysis (Table 3). From the standardization partial regression coefficient, the Nostalgia Proneness-Positive ($\beta = 1.19$) was the most effective on the Life Satisfaction.

Table 4 shows evaluation of making Life History Book. Making the book was a chance to look back their lives and had positive feelings.

Table 5 shows impression of participating reminiscence therapy. From impressions, reminiscence therapy proposed chance to talk and look back their

Table 1. Scores of questionnaire pre and post reminiscence therapy.

Questionnaires	Pre	Post
DASC	9.2 (1.03)	9.0 (0.94)
Life Satisfaction Scale	25.1 (1.16)	25.9 (1.30)
Nostalgia Proneness Scale		
Nostalgia Proneness-Reminiscence	5.28 (1.90)	5.35 (1.75)
Nostalgia Proneness-Negative	3.63 (1.23)	3.56 (1.61)
Nostalgia Proneness-Positive	4.89 (1.78)	5.03 (1.78)

Table 2. Correlation coefficients among variables after intervention.

	Life Satisfaction	DASC	NP -Reminiscence	NP -Negative	NP -Positive
Life Satisfaction					
DASC	-0.05				
NP -Reminiscence	0.36	-0.24			
NP -Negative	-0.07	-0.19	0.40*		
NP -Positive	0.79**	-0.14	0.76**	0.14	

NP: Nostalgia Proneness. ** $p < 0.01$, * $p < 0.05$.

Table 3. Result of a multiple regression analysis when Life Satisfaction was an independent variable.

Questionnaires	Standardized coefficient (β)	t-value	Significance (5%)
1. DACS	-0.02	-0.12	0.91
2. Nostalgia Proneness-Reminiscence	-0.53	-2.35	0.03
3. Nostalgia Proneness-Negative	-0.02	-0.16	0.087
4. Nostalgia Proneness-Positive	1.19	5.73	0.000

Table 4. Evaluation of making life history book.

Question Items	Scores (1 - 5 point)
1) I think it was good for me to make my Life History Book.	4.10 (1.20)
2) Life History Book makes me to have chance to look back my life.	4.30 (1.06)
3) Life History Book makes me to have positive feeling to my life.	4.00 (0.94)

Table 5. Impression of participating reminiscence therapy with a life history book.

- 1) It is good for me to stop once, reflect my life, and refer reflection to my future life.
- 2) Though I thought I was not needed for my families, I found that I was loved from my family through this time reminiscence therapy.
- 3) The memory of past are pieces. Integrating them and making a Life History Book including my elder age is good for me.
- 4) I thanks that I could reflect my life and making a Life History Book. After I came home, I read the book and miss my past life greatly.
- 5) I wanted to talk much more.
- 6) I had not have a chance to talk my life not so much, then it was good chance to talk my life. I thanks for this participation.
- 7) I could get a splendid Life History Book for my life.

lives. A participant thought that she was not loved by parents, however, she found that she was loved by them through reminiscence therapy, that is, she found a new perspective for her life and self-affirmation. Another participant said, "I read the book and miss my past life greatly." It may show nostalgia.

4. Discussion

4.1. Effects of Reminiscence Therapy

About cognitive function, the score of DASC did not change. The mean score of 9 point is no problem in cognitive function both pre and post, because under 10 point score is normal (Japan Geriatric Society, 2018). Participants of this reminiscence therapy have standard criteria, and even 2 weeks later, their cognitive function kept standard. It means that reminiscence therapy prevent to decrease cognitive function. This result support previous study that Reminiscence therapy has the effects of delay to decrease of cognitive function for 6 months (Woods et al., 2018) and that compared with the cognitive function immediately after VR (Huang & Yang, 2022), it kept declining 3-6 months after. That is, reminiscence therapy has potential to keep cognitive function.

About Life Satisfaction Scale, the score of pre (25.1) and post (25.9) was over 25 point. Diener et al. (1985) say that over 25 point shows "it's all going well." The reason of no significance at pre and post might be ceiling effects.

On the other hand, Nostalgic Proneness-positive increases from 4.89 to 5.03, though there was no significance. I suggest reminiscence therapy has potential to

increase Nostalgia Proneness-Positive. [Nomura \(2021\)](#) suggests that reminiscence therapy may promote to integrate autobiography of cognitive psychology.

4.2. Correlation among Variables and the Most Effective Factor on Life Satisfaction

Nostalgia Proneness-Positive positively significantly correlated with Life Satisfaction. That is people remembering memory with positive emotion has high life satisfaction. It is very newly knowledge. Although the relation between Nostalgia Proneness-Positive and Life Satisfaction was showed only observational study ([Kusumi, 2021](#)) or review article ([Nomura, 2021](#)), the present study could demonstrated by an interventional study.

Moreover, Nostalgia Proneness-Positive was the most effective factor on Life Satisfaction. It showed importance of nostalgia proneness positive and suggests the interaction between studies of reminiscence therapy and nostalgia in the field of autobiography of cognitive psychology. [Nomura \(2021\)](#) suggests that similarity of integral process of reminiscence therapy and nostalgia. We need to increase study including nostalgia and other variable of well-being.

4.3. Evaluation of Making Life History Book and Utility of Digital Instruments

Evaluation of Making Life History Book is almost high, over 4 point of 5 point. Making it was good chance to look back elder's lives. Some of them wanted to make life history book alone, however, it was hard to do. From participating, they attained their hopes. Moreover making book may be meaningful to leave it to children or next generation. It may be the same effects for patients of end of life ([Ando et al., 2016](#), [Ando et al., 2010](#)).

Lastly, we discuss utility of using digital instruments. We used a software of the Real Time Translator, which spoken language translated in characters on PC. Thus, the researcher could make a Life History Book in short term and it took only 2 months for 10 participants. The similar study ([Ando et al., 2010](#)) required over 6 months for 10 participants. Although we can't compare these studies directly, time and load of making books using digital instrument is reduced.

[Macleod, Storey, Rushe et al. \(2021\)](#) reviewed 22 studies to understand of components of reminiscence therapy. "Reminiscence therapy was typically delivered in a care setting using a group approach; however there was not consistency in session composition, intervention duration." From their review, there are very few studies in which use digital instruments. In future, we need to develop new method of this therapy.

4.4. Impression of Participating Reminiscence Therapy

From impressions by participants, reminiscence therapy proposed chance to talk and look back their lives and a new perspective for their lives resulted in high self-affirmation. Participants was satisfied their Life History Book, and can show their lives to their children or next generation. And a Life History Book leads to

nostalgia. It suggests relationship of researches between reminiscence therapy and nostalgia (Kurokawa, 2021).

5. Conclusion

We conducted reminiscence therapy with a Life History Book by digital instruments for elders in living community. Results suggest that reminiscence therapy prevents to decrease cognitive function, Nostalgia Proneness-Positive may influence on well-being of elders, and using digital instrument was helpful to promote reminiscence therapy.

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Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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