

The Digital Reminiscence Method: Effect on Dementia in Japanese Day Care Centers

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Abstract. When considering working with dementia patients in communities or welfare facilities, manpower problems and the existing caregiver's support system must be considered. It is a modern reality that many facilities often struggle while coping with dementia patients. However, as recent studies have reported, depending on the way dementia patients are cared for, it is possible to suppress problematic behavior such as violence, screeching, and/or wandering.

In order to assist dementia patients while using the "digital reminiscence" method, students, facility staff members, dementia patients and their families worked together in this study.

Keywords: Effects on one's lifestyle · Movie production · Good staff coordination · Families and students

1 Introduction

Current, low birthrate and longevity is in progress in Japan. With it, we are faced with a variety of problems in the field of the social welfare and social security. A problem about dementia has taken up as one of the pressing issue as a national problem. Actually, when considering working with dementia patients in communities or welfare facilities, manpower problems and the existing caregiver's support system must be considered. And, comprehensions and concerns that youths hold are not enough in this current situation. As the result, these problems have led to a reduction in population of caregiver in Japan.

So, in order to assist dementia patients while using the "digital reminiscence" method, we, facility caregivers, dementia patients and their families worked together in this study using ability of students.

The changes of the users' state and consciousness of caregivers and students were focused in this research. In addition, we aim to discuss the concept of movies that elicit a more effective response from dementia patients and report the results in the future.

The day service, it is one of the care services in Japan. This kind of service is targeted to improve or recover the mental and physical functions of the users. Facilities supply this kind of service and only take care of the users in the daytime. After that, the facilities conduct exercises and recreations to recover and inhibit declines of requisite functions for the users live a daily life by themselves. Merits of this service are not only a recovery of the mental and physical functions of the users, but also a reduction of the mental and physical load of families who take care of them every day. In this paper, an experiment using the digital reminiscence method was conducted in a small facility which is supplying the day service for dementia patients.

2 Experiment Method

2.1 Digital Reminiscence Method

The “reminiscence method” proposed by Robert Butler is a kind of psychotherapy [1]. This method uses conversation to retrieve memories from events in an elderly patient’s past. It is said that makes their brains accelerate revitalization or emotional stability and prevent dementia or delay progression of dementia.

However, it is a load for caregivers to converse to dementia users with one to one than other assistances. So, we convert memories pictures to digital data and edit them to as a movie. As this result, we consider we can obtain effect as same as reminiscence method without assistances with one to one.

We use slideshows of memories pictures and add user’s favorite music and comments about each picture into them. We term what user enjoys these slideshows “digital reminiscence method”.

2.2 Movie Production for Digital Reminiscence Method

Nine subjects with dementia with the age from 74 up to 102 years old. They who were cooperated as test subjects in this study were 3 males with average age: 83.7 years old and 6 females with average age: 94.7 years old. Two criterions were followed when we choose the subjects: (1) Subjects can speak with oral excepting nutation. (2) Subjects’ families agree and cooperate on this study.

Five stages were needed during movie production. (1) Since the subjects had dementia, we explained the purpose of this study to their families and obtained their consent to use their photos in our films. (2) The dementia patients and their families, facility caregiver staff members, and engineering students then gathered together to exchange impressions and discuss the potential photos, then created comments for the images. (3) We digitized the photos that elicited responses from the patients, then organized them in the chronological order and included the comments. In an attempt to use complete comments, not only the dates and locations were listed, but words expressing the patients’ feelings when viewing the images. (4) We prepared memorable music for the subjects, combining them with the images and comments to produce completed films. (5) Finally, the films were transferred to DVDs which could be viewed anytime at home or in care facilities.

On the other hand, we selected twenty-eight students participated in movie production (with the age from 16 to 20 years old) with various backgrounds; some had never been in contact with elderly people, while some had lived with grandparents who had dementia. The students formed eight groups (four people per one group). In addition, they attend a lecture about dementia and visit day care center as a part of movie production.

2.3 Assessment Method for Verification

We assessed subjects' actions in daily life using GBS scale quantitatively [2]. All subjects watched each movie every day for four weeks and we assessed their actions before they have watched the movie for the first time and at intervals of seven days after first assessment. In addition, we also assessed changes of their actions by descriptive form excepting GBS scale.

GBS scale is a quantitative method which assesses about four fields: physical functions, intelligent functions, emotion functions and other symptoms. It is composed by twenty-six questions in the total. But, we assess only six items in emotion functions and other symptoms: "dullness", "instability of emotion", "shortage of motivation", "anxiety", "depressed mood" and "restlessness" [3]. That is because we consider that physical functions and intelligent functions of subjects are difficult functions to improve.

3 Result

3.1 Change of Users' States

No specific improvement was observed in the GBS scale evaluation results. The reason is because we couldn't confirm improvements assessed by GBS scale from each subject in general daily life.

Assessments by descriptive form indicated some change of subjects in a part of daily life. First, all subjects smiled during watching each movie. Figure 1 shows a change of subject's expression. And, even if subjects watch other subject's movie, some subject was impressed with it. Therefore, it's effective for dementia patients to enjoy pictures and music in old days they were young even if they watch pictures which have no relation to them.

Furthermore, subjects could talk with other users and do some daily actions which they can't do well smoothly by repeating the number of times of the enjoying of the movie. Namely, digital reminiscence method makes dementia symptoms of subjects recover in a part of daily life. In this manner, we couldn't confirm quantitative assessments of digital reminiscence method by GBS scale. But, we could confirm many improvement effects as valuable as GBS scale. However, contents and features of improvement effect were different by each subject.

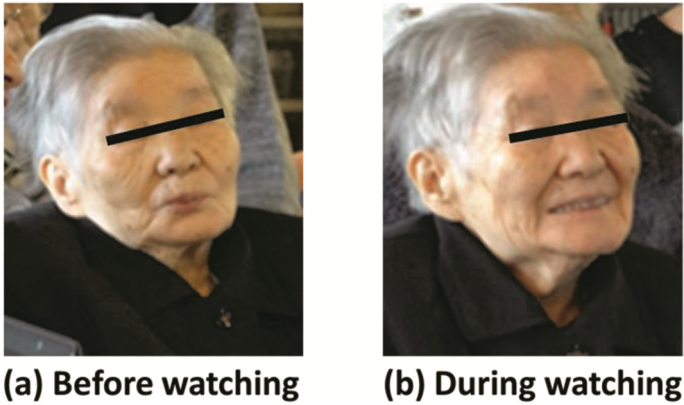


Fig. 1. change of subject's expression

3.2 Change in the Consciousness of Caregiver Staffs and Students

The facility caregiver staff members answered about effect of digital reminiscence method, such as, "I can know about user's personal anew" and "I can see the users from a different angle in the context of care". Namely, staffs can understand and receive users' some actions because caregivers know about user's past. We consider that it's very important for facility staffs to understand users deeply because the quality of care improves.

Table 1 and Fig. 2 shows details of questionnaire about elderly facilities and change in the percentage of students' images about elderly facilities. Before they attend a lecture about dementia and visit day care center, 20 % of all students hold images, such as, "elderly facilities are places which users and caregiver staffs spend vividly and cheerfully". On the other hand, 20 % of all students also hold images, such as, "elderly facilities are places which users with a disability and sick spend" and "elderly facilities are gloomy and lonely facilities". And, 65 % of all students also hold images, such as, "care of elder people is very serious job". But, after they attend a lecture and visit, nobody hold the image. In addition, about 80 % of all students hold images, such as, "elderly facilities are places which users and caregiver staffs spend vividly and cheerfully".

Table 2 and Fig. 3 shows details of questionnaire about dementia and change in the percentage of students' images about dementia. Before they attend a lecture, 15 % of all students hold dementia images, such as, "dementia patients can't understand anything" and "to communicate with dementia patients is fearful". In addition, 35 % of all students hold images, such as, "dementia patients do strange and untoward actions", and 60 % of all students hold images, such as, "care of dementia patients is very serious job". On the other hand, about 20 % of all students hold images, such as, "if they be supported by suitable care, dementia patient can keep dignity and live" and "even if human fall dementia, he can find a new way to live". And, 10 % of all students hold images, such as, "dementia patients have liveliness and live very hard". But, nobody hold a variety

of negative images about dementia. In addition, 50 % and over of all students hold images, such as, “if they be supported by suitable care, dementia patient can keep dignity and live”.

Table 1. Details of questionnaire about elderly facilities

Q1	Elderly facilities are places which users with a disability and sick spend
Q2	Elderly facilities are places which elder people spend quietly as last whereabouts
Q3	Elderly facilities are gloomy and lonely places
Q4	Care of elder people is very serious job
Q5	Elderly facilities are places which users and caregiver staffs spend vividly and cheerfully
Q6	Elderly facilities are cheerful places

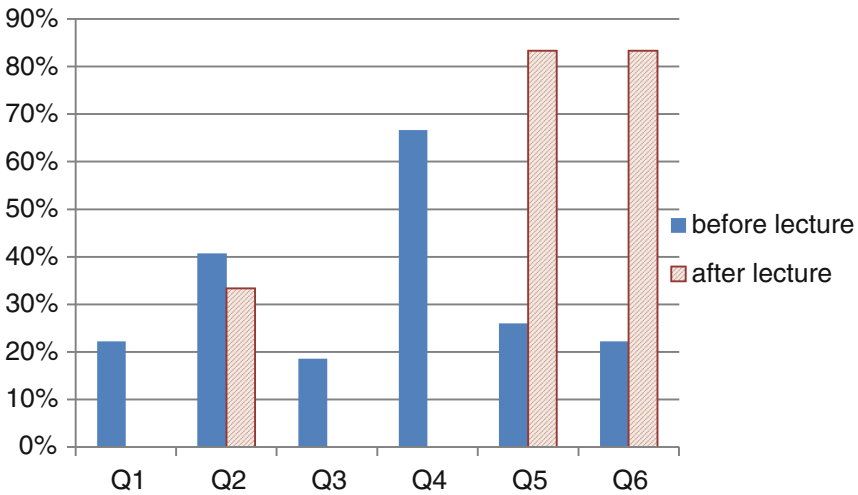
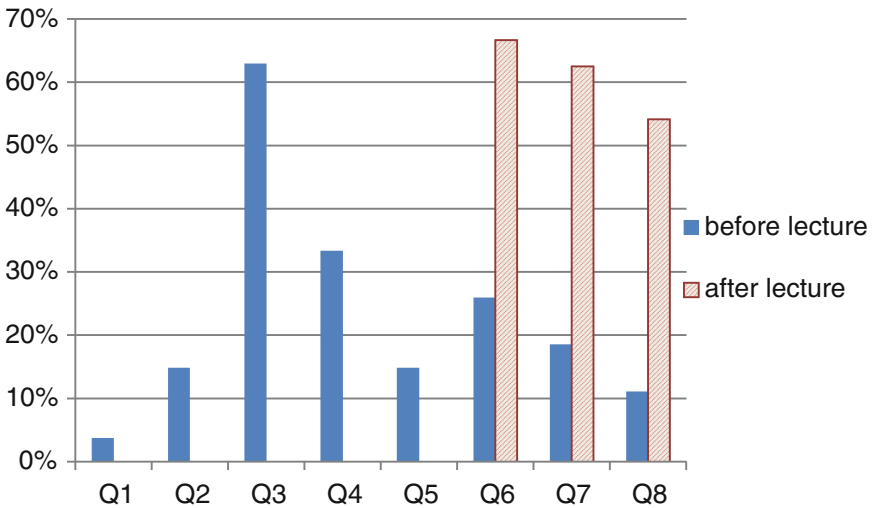


Fig. 2. Change in the percentage of students' images about elderly facilities

As the result, the number of student holds positive images about dementia and elder facilities increased through lecture as a part of movie production and communication with dementia users really. Care by youths is important in current Japanese society. Therefore, it's very important for Japanese youths to learn right knowledge about dementia and elder facilities. We consider that to concern students with movie production for digital reminiscence method is a suitable opportunity to learn them.

Table 2. Details of questionnaire about dementia

Q1	I can't imagine anything about dementia
Q2	Dementia patients can't understand anything
Q3	Care of dementia patients is very serious job
Q4	Dementia patients do strange and untoward actions
Q5	To communicate with dementia patients is fearful
Q6	If they be supported by suitable care, dementia patient can keep dignity and live.
Q7	Even if human fall dementia, he can find a new way to live
Q8	Dementia patients have liveliness and live very hard

**Fig. 3.** Change in the percentage of students' images about dementia

4 Consideration

In previous discussion, some effect of dementia symptoms improvement was found, however it is pity that no results or influence was showed by check expression evaluation table.

Referring to GBS scale evaluation, it was said that check scheme was to be carried out in limited time. Furthermore, it was difficult to decide how many items should be focused, in other words, how to investigate elder subjects' daily life/activity, how to

apply the monitor method individually and choose the proper/effective measures are very puzzling problems.

Namely, there is urgent desire should be considered, such as change the items individually to evaluate what you want as an effect of digital reminiscence method. However, it is very important to establish as a thesis, especially to clarify such effects. In reality, it is very meaningful to increase everyone's smile (including caregiver staffs), improve parts of dementia elder's life through applying digital reminiscence method. That is because, for both caregiver staffs and elder patient they have a win-win relationship, so in this direction it is able to aspire and achieve a better improvement in an aging society.

What's more, digital reminiscence's significant effect not only displayed during the movie watching period, but also showed a striking influence on caregiver staff's daily care activity. However, as the improvements, DVD method was lack of sustainability because of its indirect effects (for predetermined subjects' condition able to communicate).

In order to solve the problem of indirect effect, this research put more emphasis on the background music. Music has the magic effect of bringing people back into the past time memories and emotions, even after repeated viewing as well as person's favorite song is nostalgic memories of self-awareness and very good. Therefore, follow and align the music to specific time, match with photo content and story, such kind of music (slow tempo and up-tempo) could help to recovery the memories of the past. Moreover, alternative effect is also expected by listening to music for dementia elder without caregiver's daily support and mental care. Consequently, it is consider that users' strong mental fatigue of "uneasy feeling" suffered from daily life could be effectively release and eliminate.

On the other hand, four weeks daily repeat watching movie in multiple facilities showed a good basic of the future movie production. In a near future, movie production service will not only face to all elder users but also record the daily life/activity care process between caregiver and elder. Finally, it is considered to help everybody operate better lives and eliminate users' anxiety during dementia care process.

5 Conclusion

In this paper, digital reminiscence method was applied to investigate DVD movie effect on dementia lived in Japanese Day Care Centers. It could demonstrate the conclusions as following 5 key points;

1. Combining with past photos, background music and words, DVD movie could able to make everybody lived in center smile;
2. Corresponding to caregiver's uneasy feeling accumulated in previous dementia care process, DVD movie can recovery dementia elder's past memory, active their activity and finally staff's reduce anxiety;
3. As a side-effect, through photos showing, the relationship between caregiver staff and elder's family members become more familiar with each other deeply;

4. Continuing release of DVD movie in nursing facilities, a circle of communication among elder users was established and spread out;
5. Referring to students who make the DVD movie, they obtain some new value theory for elder nursing industry.

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