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Change in speaking time of elderly people who require facility care when social communication
from staff is increased in Japan

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ABSTRACT

The importance of communication has a strong effect on the physical and mental condition of elderly people. Understanding changes in speech of elderly residents were important aspect for facility nurses and support staff during social communication with these residents. The aims of this study was to analyze the changes in speaking time and speech content of elderly residents following educational intervention to promote social communication by nursing and care staff. The speech of the 37 subjects for one day was recorded, and speaking time, frequency, and communication type were derived from the literal transcripts. Changes in speaking time and type in the elderly residents before and one week after the educational intervention to staff members, and the factors related to those changes were statistically compared. A considerable increase was seen in mean speaking time, from 208.2 sec (SD 188.7) before intervention to 304.4 sec (SD 275.9) after intervention ($p=.08$). A comparison of speaking frequency before and after intervention by type of communication showed a significant increase in conversation about subjects' family or past experiences ($p<.00$). A significant correlation was observed between change in speaking time of elderly residents and change in the Type II communication time by staff ($r=.52$, $p<.01$).

KEYWORDS: Communication, social communication, speaking time, elderly

INTRODUCTION

Communication has a strong effect on the physical and mental condition of elderly people, and its importance has been pointed out. In particular, for elderly in geriatric care facilities verbal communication is necessary and indispensable for establishing and maintaining one's self-identity as a member of society amidst the lack of stimulation in daily life experienced by the elderly (Sigman, 1985). However, Ryan (1995) pointed out that in addition to the elderly experiencing deterioration of communication functions such as hearing and memory, they are treated by caregivers with stereotypical behavior as though their powers of self-determination have deteriorated, which further deprives them of communication opportunities and makes it easier to lose self-control and confidence, so that communication by the elderly is markedly hindered.

One study of nursing homes in the USA suggested that although the residents wanted to talk to someone, the nursing staff were always busy so they seemed unable to provide an opportunity to talk (Liukkonen, 1995). In addition to noting the dearth of social interaction between residents and family, other residents and nursing staff (Grau, *et al.*, 1995), and the relative lack of verbal

communication (Burgeo, 1990), a problem with the quality of the communication has also been pointed out.

In Japan, various nursing fields are trained in the importance of communication with persons receiving care in order to deepen human understanding and establish a trusting relationship with the elderly. However, in many cases such training is limited to theoretical understanding, and practical training in actual communication is insufficient, with limited research conducted into verbal communication between caregivers and the elderly to establish what types of communication occurred and to what extent.

OBJECTIVE

This study aims to elucidate the current conditions of utterances by the elderly before educational intervention for caregivers and the utterance duration, frequency and changes in self-initiated talking of the elderly after educational intervention for caregivers.

METHODS AND MATERIALS

This is a cross sectional study. A request was made to introduce elderly residents in 3 geriatric care facilities in Prefecture A who matched the following selection criteria, and from among these, consent to cooperate with this study was obtained from 37 persons (15 from Facility A, 10 from Facility B and 12 from Facility C). The basic attributes of the elderly participants were: 11 males, 26 females, aged from 72 years to 100 years, with a mean age of 84.6 years. Activities of daily life (ADL) comprised 11 bedridden residents (30.6%), 21 who used a wheelchair (58.3%), four who could walk (11.1%) and one person unknown. Six persons (16.7%) were ranked in the daily life independence category 0-1 for cognitively impaired elderly in the long-term care insurance system, 5 persons (13.9%) were ranked IIa-IIb, 20 persons (55.6%) were ranked IIIa-IIIb, 5 persons (13.9%) were ranked IV, and 25 persons (69.5%) had cognitive impairment ranked III or above. Eight persons (21.6%) had verbal impairment and 6 persons (16.2%) had auditory impairment. The survey took place from October 2004 to November 2005.

In order to analyze how utterances by elderly participants changed after training for caregivers about the importance of Type II talking, the type and quantity was measured for verbal communication that each elderly participant received from the caregivers, and for utterances by the elderly.

First, measurement of caregiver talking and elderly utterances was conducted two times for each facility, for one day each before the education intervention and one week after the intervention, a total of two days. The observation period lasted from 9.00 hours to 17.00 hours. The observation method involved the investigator assigned to each elderly patient waiting in the corridor outside the elderly resident's room to avoid imposing a psychological burden on the resident, then accompanying the caregiver when the caregiver entered the room, in order to record the conversation contents. All conversational content of verbal communication between the elderly resident and caregivers during the observation period, including moving to the dining room, was recorded and transcribed from the tape recorder. There were 38 investigators in total, and investigators were forbidden to talk to the elderly participants in order to minimize affecting the

survey, and elderly participants were informed about this in advance. The study purpose was explained to caregivers, who were requested to talk to the elderly as usual. Background details of the elderly residents, such as age, gender, residency period, extent of care required, ADL, cognitive impairment, verbal impairment or auditory impairment were obtained from the ward manager.

To analyse the study, the researcher categorise the communication type. First, each sentence from the transcript of the recorded scenes was coded. These codes were then allocated to each type of subcategory based on the category tables for the type of caregiver's talking and elderly utterances from the previous study that have been reevaluated and amended. Three researchers categorized the codes in all cases for the caregivers and elderly residents, with a conformity ratio of 84% between all three researchers. Codes that did not conform were then categorized after full discussion of their meaning within the transcript context. Sentences that were difficult to categorize, such as people talking to themselves, were discussed as to their significance within the transcript context, and categorized as 'Others' in each category type. The utterance frequency was calculated as one sentence equals one time. As conversation during care is discontinuous and conversation speed also varies, each two syllables in the transcript were counted as 1 second when calculating the utterance duration for each type.

In this study, statistical analysis of changes in the duration and type of utterance of elderly persons before and after education intervention for caregivers was limited to the actual conversation duration. Utterance duration and frequency of each type (Type I, Type II) was compared before the education intervention and one week after it, as was the utterance total duration (Type I + Type II) and frequency, the frequency of sub-categories for each type, and the duration and frequency of self-initiated utterances, using repeated measures t-test. Factors affecting changes in utterance duration before and after education intervention for caregivers (after intervention minus before intervention) were evaluated starting with the background of elderly residents and the staff talking duration, using ANOVA and Bonferroni analysis. SPSS v.12 was used for statistical analysis.

For ethical consideration, prior to undertake this study, approval was obtained from the Ethical Evaluation Committee of Tokai University's Health Sciences Faculty.

The study is conducted in two stages. The study conducted in the first stage aimed to clarify the actual situation concerning verbal communication between caregivers and elderly residents of geriatric care facilities (Fukaya, *et al.*, 2004). The study method involved analyzing the types of verbal communication by caregivers and responses by elderly residents (utterances by the elderly), with the duration and frequency of the communication measured. Factors affecting caregiver talking and utterances of elderly residents were then evaluated.

In the second stage of this study (Fukaya, *et al.*, 2009, an education intervention (lecture and group discussion) was conducted with the aim of making caregivers aware of the need for Type II communication to the elderly, and to discover practical measures to increase Type II communication. The aim of 2nd stage was to evaluate whether the quantity of Type II communication an elderly resident received from a caregiver increased as a result of the education intervention. The education intervention involved participation by the 240 nursing and other caregivers in lectures and discussions to increase understanding of the importance of Type II talking based on the previous study, and in group discussions on how to introduce Type II talking into their

daily work from 3 viewpoints: current condition of verbal communication by caregivers, the background to the current situation, and measures to increase Type II talking. Analysis comprised statistical comparison of changes in Type II talking from before the intervention, 1 week after the intervention and 3 weeks after the intervention to evaluate the effect of the education intervention

RESULTS

Results showed that the time caregivers spent communicating with a single elderly person was a low mean of 38.1 minutes per day (SD24.1), and that caregiver conversation fell into 2 categories. The first type of communication was 'talking to elicit the activities of daily living', which is talking based on various nursing or care giving administration to elicit daily living activities from the elderly, which we labeled Type I communication. Type I communication comprised 75.9% of overall communication, and it included verbal communication for instructions and promotion of behavior, verbal communication for explanation of assistance behavior, and questions and explanations about the resident's physical condition. The second type of communication is conversation about family, work and social events that occurs normally in social activities, which is necessary for social lubrication, emotional stability and energizing the spirit, which we labeled Type II communication. Type II communication comprised 24.1% of overall communication.

Most verbal communication was a one-way communication pattern, with communication initiated by caregivers and the elderly responding. Many of the replies by the elderly were limited to replies of 'Yes' or 'No' or utterances of short words. However, the result of evaluating the correlation between caregiver conversations and utterances by the elderly showed that Type II communication elicits more utterances from elderly residents than does Type I communication. The above results indicate that it is necessary for caregivers to engage in more Type II communication to encourage more utterances from elderly residents.

It was found that at 2 out of the 3 facilities, Type II talking increased significantly ($p < .05$) from 226.5 sec (SD126.5) before intervention to 390.1 sec (SD274.0) 1 month after intervention, and it maintained an increased level after 3 months. However, the educational intervention's effect was not clear at 1 facility. These results indicate that is valuable to the QOL of elderly people by remaining aware of the importance of Type II talking and consciously endeavoring to increase it. However, because analysis in this study focused on changes in caregiver communication after the education intervention, it was not sufficiently clear to what extent the utterances of elderly residents changed as a result of changes in communication by caregivers. As stated earlier, conversation between caregivers and elderly residents commonly comprises a one-way conversation pattern initiated by the caregiver talking. Pathas (1998) stated that in free-flowing conversation the topic is not decided in advance, and the order of who speaks is not allocated in advance, but from the current state in geriatric care facilities, it can be predicted that it is not the case that people who want to speak can speak freely of their own accord. Accordingly, this study also focused on self-initiated utterances in order to learn how the elderly perceive the order of conversation, to clarify the status of elderly utterances before educational intervention for caregivers, and how elderly utterances changed after educational intervention, by elucidating the elderly utterance duration, frequency and changes in self-initiated talking.

Changes in elderly person's utterance duration and frequency of 3 facilities before education intervention, and change after intervention

The utterance duration of elderly residents during one day before the education intervention varied widely from a minimum duration of 1s to a maximum duration of 936 s, with a mean of 247.42 s (SD222.91). Looking at utterance duration at one minute intervals, utterances at 3 minutes or less comprise 48.65%, approximately half, while utterances of 1 minute or less comprise 19.44%. Elderly utterance duration was extremely low. Although self-initiated utterances varied widely from a minimum duration of 0 s to a maximum duration of 104.50 s, the mean of 22.77 s (SD30.10) was low. Among these utterances, 18 persons (48.6%) had 0s, so almost half did not initiate talking to caregivers, indicating that many utterances were responses to talking by caregivers. Although the utterance duration mean after the intervention increased slightly to 290.47 s (SD238.65), no significant difference was found.

Changes in utterance duration and utterance frequency of 2 facilities

Changes in caregiver talking duration due to education intervention was evaluated in previous studies, and out of the 3 facilities, talking duration increased for 2 facilities, and among this increase, Type II utterance duration increased significantly. However, talking duration at 1 facility showed no effect of the education intervention. Accordingly, the facility where no education effect was found was excluded, and the utterance duration and utterance frequency before and after education intervention were compared for the remaining 2 facilities.

The results show a considerable increase from an utterance duration mean of 208.23 s (SD188.65) before intervention to an utterance duration mean of 304.41 s (SD275.88) after intervention, but there was no significant difference ($p=.08$). However, when utterance duration for each talking type is compared, the Type II utterance duration mean increased significantly ($p\leq.02$) from 55.7 s (SD56.14) before intervention to 113.07 s (SD124.00) after intervention. And the mean Type II utterance frequency also increased significantly ($p\leq.01$) from 11.68 times (SD10.75) before intervention to 25.14 times (SD24.69) after intervention. No significant difference was found for Type I utterance duration mean and frequency mean before and after intervention.

Self-initiated talking between elderly residents and caregivers was compared for duration and frequency before and after intervention, and the self-initiated talking duration mean almost tripled from 11.8 s (SD 18.01) before intervention to 30.07 s (SD57.71) after intervention, but no significant difference was found. The self-initiated talking frequency mean was low at 2 times (SD3.1) and it increased slightly to 3.86 times (SD6.71) after intervention, but there was no significant difference.

Frequency change for utterances in each type subcategory for 2 facilities before and after education intervention

To evaluate changes in utterance contents by elderly residents before and after educational intervention, the utterance quantity of elderly residents at 2 facilities were compared for each subcategory of Type I utterance and Type II utterance. No significant difference was found for utterance frequency of subcategories of Type I utterance before and after education intervention.

However, for subcategories of Type II utterance, the category of 'Utterances about life experience' about past experiences and family increased significantly ($p \leq .04$) from 2.36 times (SD3.19) before intervention to 6.05 times (SD8.36) after intervention. In addition, utterances in the 'Others' subcategory, including talking about the climate and weather and talking to oneself, increased significantly ($p \leq .05$) from 4.50 times (SD6.25) before intervention to 8.73 times (SD9.68) after intervention. 'Utterances about social events' increased considerably from 7.18 times (SD8.83) before intervention to 11.09 times (SD12.42) after intervention, but no significant difference was found.

DISCUSSION AND CONCLUSION

Utterance duration and frequency for one day for elderly residents in geriatric care facilities was extremely low. Furthermore, self-initiated utterances from the elderly to caregivers were also extremely few, with many utterances being responses to caregiver talking. Kaakinen (1992) also indicated that there was little conversation by elderly residents of nursing homes. Reasons identified for this were that the elderly have communication tools to prevent causing trouble in order to adapt to the nursing home environment, and exercise self-restraint in conversation with others.

In this study also, many conversations between caregivers and the elderly started with talking from caregivers and were ended by caregivers, with caregivers leading the communication. One factor that is considered to contribute to the background of this communication pattern is that much of talking by caregivers is Type I talking, in order to pursue nursing and caregiver duties. It was shown that educational intervention to promote Type II talking by caregivers significantly increased Type II utterances by the elderly, and although no significant difference was found for self-initiated utterances, they increased by triple what they were before the intervention. Psathis (1995) stated that the order of speakers is not fixed in free conversation, so unlike conversation for purposes associated with caregiver duties, it was shown that the increase of self-initiated utterances in free conversation occurred after educational intervention.

Among Type II utterances, the increase in 'utterances about life experiences' concerning past events and family, and 'other utterances' about climate and season changes etc. means that mutual communication has increased so that elderly residents can believe that caregivers will listen to their talking. Accordingly, it is important that free mutual communication is given priority in the geriatric facilities as communication between one human being to another.

In conclusion, in one day, utterances comprising 3 minutes or less comprised almost half (48.65%), and among those, utterances of 1 minute or less comprised 19.44%, so utterances by elderly residents were extremely short. Self-initiated utterances from the elderly to caregivers were 0 for 48.6% of cases, and most utterances were in response to talking by caregivers. At the 2 facilities where an effect was displayed by caregivers after the educational intervention, Type II utterance duration ($p \leq .02$), and frequency ($p \leq .01$) increased significantly. Self-initiated utterances increased by almost 3 times after intervention, but no significance was found. Among the first categories of Type II utterances for the 2 facilities, a significant increase ($p \leq .05$) occurred for 'Utterances about life experiences' concerning past events and family, and 'Others' about expressions of doubt and climate and weather etc.

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