

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: Communication has a strong effect on the physical and mental conditions of elders people. Understanding changes in speech of elderly residents is an important aspect to facilitate nurses and support staff during their social communication. The aims of this study are to analyze the changes in speaking time and speech content of elderly residents following educational intervention that promotes social communication. The speech of the 37 subjects for a day was recorded, and speaking time, frequency, and communication type were derived from the literal transcripts. Changes in speaking time and type in the subjects before and after 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. A significant correlation ($r=0.52$, $p<0.01$) was observed between change in speaking time of elderly residents and change in the Type II communication time by staff.

Keywords: Communication, social communication, speaking time, elderly

Introduction

Communication has a strong effect on the physical and mental condition of elderly people, and it is of great importance has been pointed out. In particular, for elderly in geriatric care facilities verbal communication is necessary and indispensable to establish and maintain 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 deprive thier of communication opportunities thus lead to the loss of self-control confidence. As a result, communication by the elderly is markedly hindered.

A 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). Besides the dearth of social interaction between family, other residents and nursing staff (Grau *et al.*, 1995), the

relative lack of verbal communication (Burgeo, 1990), as well as the quality of the communication deserve serious attention.

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. Unfortunately, such training is often limited to theoretical understanding, with insufficient practical. There were limited researches have been conducted to assess verbal communication between caregivers and the elderly to establish what types of communication occurred and to what extent.

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

Materials and Methods

This is a cross sectional study. A request was made to introduce elderly residents in 3 geriatric care facilities in Prefecture A which matched selection criteria. 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 a 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. 8 persons (21.6%) had verbal impairment and 6 persons (16.2%) had auditory impairment. The survey took place from October 2004 to November 2005.

Measurement of caregiver talking and elderly utterances was conducted twice for each facility i.e. one day before the education intervention and one week after the intervention. The observation period lasted from 9 to 17 h. The observation method involved the investigator assigned to each subject waiting in the corridor outside the resident's room to avoid imposing psychological burden. The investigator then accompanied the caregiver to enter the room, 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. 38 investigators were involved with no conversation to the elderly participants in order to minimize unnecessary effect to the survey. Note that all elderly participants were informed about this in advance. The study purpose was clearly explained to caregivers, who were requested to talk to the elderly as usual. Background details of the elderly residents, such as age, gender, period of residency, extent of care required, ADL, cognitive impairment, verbal impairment or auditory impairment were obtained from the ward manager.

For analysis, the researchers categorised 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 re-evaluated 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 a full discussion of their meaning within the transcript context. Sentences those 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-syllable in the transcript was counted as 1 second when calculating the utterance duration for each type.

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) were 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 with SPSS v.12.

Ethical approval was obtained from the Ethical Evaluation Committee of Tokai University's Health Sciences Faculty.

The study was conducted in two stages. The study conducted of the first stage aims to clarify the actual situation concerning verbal communication between caregivers and

elderly residents of geriatric care facilities (Fukaya *et al.*, 2004). The study method involves 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 the stage was to evaluate whether the quantity of Type II communication that an elderly resident received from a caregiver will be increased as a result of the education intervention. This education intervention involves the participation of the 240 nursing and other caregivers in lectures and discussions to increase the 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 i.e. 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 show 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, labeled as Type I communication and was found to have comprised 75.9% of overall communication, and it includes verbal communication for instructions and promotion of behaviour, verbal communication for explanation of assistance behaviour, 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 was labeled as Type II communication and found to have comprised 24.1% of overall communication.

Verbal communication was mainly a one-way communication pattern, with communication initiated by caregivers followed by subject response. Many of the replies by the elderly were limited to 'Yes' or 'No' or utterances of short words. However, the results of evaluating the correlation between caregiver conversations and utterances by the elderly show that Type II communication elicits more utterances as compared to Type I communication. It is therefore 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 ($p < 0.05$) from 226.5 sec (SD126.5) before intervention to 390.1 sec (SD274.0) 1 month after intervention, and it maintained at elevated level after 3 months. However, the effect of educational intervention was not clear at one facility. These results indicate that it is valuable to the QOL of elderly people by remaining aware of the importance of Type II talking and shall be

consciously endeavoured to increase it. However, as the analysis in this study was only focused on changes in caregiver communication after the education intervention, it was not sufficiently clear to what extent the utterances of elderly residents had 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. 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. 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 always 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 by 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 1s and 936s, with a mean of 247.42s (SD222.91). Looking at utterance duration at 1 min intervals, utterances at 3 min or less comprise approximately half (48.65%), while utterances of 1 min or less comprise 19.44%. Elderly utterance duration was found extremely low. Although self-initiated utterances varied widely from a minimum duration of 0 s to a maximum duration of 104.50s, the mean of 22.77s (SD30.10) was

considered low. Among these utterances, so almost half (48.6%) did not initiate talking to caregivers, indicating that many utterances were responses to talking by caregivers. Although the utterance duration mean increased slightly to 290.47 s (SD238.65) after the intervention, 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 in 2 facilities, and among this increase, Type II utterance duration was found to have increased significantly. However, talking duration at one facility showed no effect of the education intervention. Accordingly, the facility where no education effect was found was then 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 208.23s (SD188.65) before intervention to an utterance duration mean of 304.41s (SD275.88) after intervention, but there was no significant difference ($p=0.08$). However, when utterance duration for each talking type is compared, the Type II utterance duration mean increased significantly ($p\leq 0.02$) from 55.7s (SD56.14) before intervention to 113.07s (SD124.00) after intervention. The mean Type II utterance frequency has also increased significantly ($p\leq 0.01$) 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 11.8s (SD 18.01) before intervention to 30.07s (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 i.e. past experiences and family increased significantly ($p\leq 0.04$) from 2.36 times (SD3.19) before intervention to 6.05 times (SD8.36) after intervention. Moreover, utterances in the 'Others' subcategory that includes talking about the climate and weather and talking to oneself, increased significantly ($p\leq 0.05$) 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 observed.

Discussion

Utterance duration and frequency for one day for elderly residents in geriatric care facilities was extremely low. Self-initiated utterances from the elderly to caregivers were also extremely few, with many utterances being merely responses to caregiver's talking. Kaakinen (1992) 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, many conversations between caregivers and the elderly were started with talking from caregivers and ended by caregivers. One possible factor that much of talking by caregivers was Type I talking, which is mainly 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. Although no significant difference was found for self-initiated utterances, they increased by triple what they were before the intervention. Psathas (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 suggest 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.

Conclusion

In conclusion, in one day, utterances of comprising 3 min or less comprised almost half and among those, utterances of 1 min or less comprised about one-fifth, so utterances by elderly residents were extremely short. Self-initiated utterances from the elderly to caregivers were none for nearly half 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 ($p \leq 0.02$), and frequency ($p \leq 0.01$) 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 ($p \leq 0.05$) occurred for 'Utterances about life experiences' concerning past events and family, and 'Others' about expressions of doubt and climate and weather.

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