ORAL PAPER PRESENTATION 4: INFORMATION AND COMMUNICATION

Can a communication robot contribute to the good relationship between the elderly with dementia and the staff?

T. Yamaguchi, Y. Saito, F. Nakamura, C. Maeda

Purpose With the rapid aging of the population, the increase in the number and severity of the elderly with dementia has become a major issue for elderly care in Japan. In particular, the progression of dementia among the elderly has strained on the staff, making communication with them difficult. How can we strengthen the relationship between the elderly with dementia and care staff in day care? As one possibility, previous studies have shown that communication robots have a positive effect on enriching emotions and expressions in the elderly with dementia (Matsuyama & Obayashi 2020, Ninomiya 2020). Our research purpose is to clarify human-robot interaction between communication robot and the elderly with dementia. What kinds of character can we find in the interaction? What kind of benefits does the interaction bring to the elderly with dementia? And what kinds of benefits does it bring to care staff? Or does human-robot interaction give any disadvantage? **Method** [ROBOT] PALRO is a 40 cm long communication robot developed in 2010 by the ICT company FUJISOFT, Inc. and has been improved over the years (figure1). It possesses advanced conversational, voice recognition, facial recognition and memory abilities, and is capable of smooth communication with elderly people with dementia. [Subjects] The subjects were two elderly people with dementia who use a daycare service in Kobe, Japan (2 females, 83 and 69 years old). Their Nursing Care Level is 1 on a 5-point scale, and both have early Alzheimer's disease. [Procedure] We analyzed the communication of the two participants in detail by participant observation on a day when PALRO was placed and on a day not (figure2). The PALRO was then placed in the daycare service on a daily basis for three months, and the interaction with the users was observed. [Assessment] (1) Mini-Mental State Examination score for dementia. (2) participant observation of the participants. (3) focus groups for the staff. This research was approved by the Research Ethics Board of Department of Sociology of Human Sciences at Osaka University. **Results and Discussion** The study revealed that (1) the two subjects recognized PALRO sometimes as a robot and sometimes as an object of assistance, and conveniently communicate with each other, (2) communication spread to other users and staff through PALRO, and (3) PALRO's presence had a positive impact on staff by providing topics of conversation and temporarily dealing with the elderly, indicating the potential of communication robots in dementia care.

References

Matsuyama, S. &Obayashi, K. (2020). Measuring the impact of age, gender and dementia on communication-robot interventions in residential care homes.

Ninomiya, T. (2020). History of Communication Robot "RALRO" in Sagami Robot Industry Zone. Journal of the Robotics Society of Japan. Vol.38 (7), 596-599

Figure1. Communication Robot PALRO

Figure2. PALRO and the Subject