

Euro Neuropharmacology 2018 - Comparison of verbal and emotional responses of elderly people with mild/moderate dementia and those with severe dementia in responses to seal robot, PARO - Kazue Takayanagi - Aoi Royal Garden Musashikosugi

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Dementia is associated with the symptoms of impairment in memory, communication, and thinking. This describes Alzheimer disease which results in abnormal changes of behavioural and Reasoning. Dementia covers a wide range of specific medical conditions, disorders grouped under the general term “dementia” are caused by abnormal brain changes. These changes trigger a reduction in thinking skills, also known as cognitive abilities, severe enough to impair daily life and independent function. They also cause behavior, feelings and relationships. In the case of most progressive dementias, there is no cure and no treatment that slows its progression, but some of the drugs temporarily improve symptoms. Similar medications treats Alzheimer's are the drugs sometimes prescribed to help with dementia. Non-drug therapies can also help to decline some symptoms of dementia. The path to effective new treatments for dementia is through increased research funding and increased participation in clinical trials. Volunteers needed to participate in clinical studies about Alzheimer's and other dementias.

The baby seal robot, PARO, is a neurological therapeutic medical device for non-pharmacological purpose. Demonstrative and clinical experiments showed that PARO's therapeutic effects contains reduced stress, relief in depression, reduced anxiety, reduced pain, relaxation and suppression of behavioral and psychological symptoms related to dementia, and improved and recovered communication ability. Psychological indices applied, studies in which a psychologist has carried out a scientific analysis. Also, there is possibility of information bias in research with demented elderly subjects. Using PARO, result showed PARO improved loneliness. PARO was also compared to reading activity at a nursing home in RCT, and results showed reduction of anxiety, improvement of mood, and improvement of quality of life of elders. The subjects were 25 residents of the general ward and 11 residents of the dementia ward. Elderly residents with dementia are ranked into level III which is described as: “Since they have symptoms, behaviors and difficulties in understanding that make them difficult to live in their everyday life, they actually need care.” Five levels, which includes ADL, physical and psychological condition, and those whose degrees of independence in everyday life. An another method is a staff member brought PARO or Lion, and stayed with the subject for 15 min in the subject's private room. All subjects were exposed to both PARO and Lion, interval sessions were 3–6 months. The behavior of the resident was recorded on video.

The videos of residents those who participated in the experimental (PARO) and control (Lion) interaction conditions were analyzed. The mean length of videos in the experimental and

control conditions was 14 min 15 s; the shortest video was 7 min 1 s and the longest was 21 min 15 s. Initiation of video recording includes filming and other preparations, analysis was carried out on the 6 min interval from 1 to 7 min after the start of recording. Due to the limitations of elderly nursing care facilities, some of them were transferred to their own homes or to the special nursing care centres for the elderly, or sometimes they were hospitalized due to the illness. Hence, the psychological evaluation was actually carried out on 19 residents in the general ward. A time sampling method considered for behavioral analysis. By using the mean values of the two evaluators, the observed frequency of each behavioral category was taken for the experimental and the control condition for each subject. Using the Wilcoxon signed-rank test observed frequencies of behaviors in the experimental and control condition in M-group indicated, and S-group were examined. Statistical processing was carried out using IBM SPSS Statistics. Significant level was set at 0.05. The effect of order of presentation of either PARO or Lion was not imbalanced in the study. The M-group scored a mean of 16.4 points on Hasegawa's Dementia Scale, the order effect can be disregarded as the S-group scored a mean of 8.8 points and indicating that the subjects are expected to have almost no short-term memory. The frequencies of touching and stroking PARO/Lion, talking to the staff member, negative facial expressions were significantly higher with the lion than PARO in the M-group.

There were many people in the M-group who talked to the staff member. When the staff member was with Lion, more subjects talked to the staff member and talking initiated by the staff member was more common than with PARO. The results shown that in the M-group, when PARO was presented to subjects, they spent better time with PARO and less talking to the staff member. When Lion was presented, the subjects in M-group ordered more communication with the staff member.

Although the observed frequency of negative expression was low in both groups in both conditions, it was only significantly greater during interaction with Lion in the M-group. This may be linked to the finding that the frequency of talking initiated by the staff member was greater during the interactions with Lion in the M-group. Lion did not have reaction and was not cute for the subjects in M-group. In both groups, subjects shown more positive changes in emotional expression with PARO than with Lion, and laughed more frequently with PARO than with Lion. In M-group subjects even showed more negative emotional expressions with Lion than with PARO. Subjects in S-group showed neutral expression more frequently with Lion than with

PARO, suggesting more active interaction with PARO. For subjects in M-group, frequencies of touching and stroking, frequencies of talking to staff member, and frequencies of talking initiated by staff member were significantly higher with Lion than with PARO. Females tended to accept both Lion and PARO. Males accepted PARO more than Lion, and the majority of them accepted PARO and cuddled it. In interventions with PARO, 72% of subjects cuddled the PARO, and it was likely that their interest increased in the PARO's characteristic of not just moving but also actually responding. Even some subjects who disliked animals showed interest in PARO. In the present study, the first 6 min of behavior when interacting with PARO were analyzed. PARO facilitated the start of conversation of the subjects with dementia and improved their moods. Therefore, intervention with PARO has potential to increase willingness of staff members to communicate and work with elderly people with dementia, especially those with mild/moderate dementia who express their demand of communication more than those with severe dementia.