

*Feasibility and effect of a therapeutic robot PARO*

R. YU, J. WOO, E. HUI, J. LEE, D. POON, K. IP, F. YEUNG. **Feasibility and effect of a therapeutic robot PARO on moods and social interaction in older adults with declining cognitive function.** *Gerontechnology* 2014;13(2):317; doi:10.4017/gt.2014.13.02.149.00 **Purpose** Socially Assistive Robots is a growing area for geriatric research<sup>1,2</sup>. This paper aims to investigate the feasibility and the potential benefits of a robot-assisted intervention using PARO<sup>3,4</sup>, as shown in *Figure 1*, in older adults with cognitive decline. Reliability in the interpretation of the participants' responses during intervention was evaluated. **Method** Community-dwelling older adults with mild cognitive impairment (MCI) or mild-to-moderate dementia were recruited to receive a single-session PARO intervention. Moods were measured with the simplified face scale before and after intervention. The intervention sessions were videotaped, and were observed by two raters - one occupational therapist and one medical researcher- who independently marked the participants' responses towards PARO on an observation table on an every-minute basis (with standardized rating criteria), on two different occasions with an interval of 2-4 weeks. Inter- and intra-rater reliability was assessed using intra-class correlation coefficient (ICC). **Results & Discussion** PARO intervention was successfully implemented in community-dwelling older adults with MCI or dementia. Eleven participants (age range 73-88 years, 82% female, MMSE range 9-24) completed the intervention (9 received group based intervention (*Figure 2*) and 2 received individual based intervention) and the mean participation time was 27 minutes (range 17-30 minutes). Most participants remained focused on PARO for the entire duration of the session, and the most frequent facial expressions to PARO consisted of neutral, smile, and laugh; with the occurrence rate during the therapy at 91, 34, and 17%, respectively. All participants continued to gently stroke/hold PARO during the interaction, while ten (90.9%) talked directly with PARO in a dyadic relation as if it was a real living pet. According to the comments from the patients' therapist, PARO also promoted conversation between the participants. Furthermore, participants demonstrated improvement in patients' moods (pre-intervention: 3.44, post-intervention: 2.44), but the difference did not reach statistical significance. Inter- and intra-rater reliability of the interpretation of the participants' responses towards PARO was good with an ICC ranged from 0.95-1.00 and 0.87-1.00, respectively. The observation table and rating criteria were found to have good inter- and intra-rater reliability.

**References**

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*Figure 1. The seal robot, PARO*



*Figure 2. Intervention between elderly and PARO*