

*Elderly care using teleoperated android Telenoid*

K. KUWAMURA, R. YAMAZAKI, S. NISHIO, H. ISHIGURO. **Elderly care using teleoperated android Telenoid.** *Gerontechnology* 2014; 13(2):226; doi:10.4017/gt.2014.13.02.091.00 **Purpose** Having a limited social network increases the risk of dementia<sup>1</sup>. Conversation is important to avoid or calm dementia and decreasing anxiety to suppress Behavioral and Psychological Symptoms of Dementia. (BPSD). However, most care facilities suffer from a shortage of workers resulting in a lack of communication with residents. To solve this, we have developed a telecommunication robot "Telenoid" that encourages residents to communicate. **Method** Telenoid is a teleoperated android with a humanlike design that can represent any person (Figure 1). It is about 50cm long, weights 3.2kg and is covered with a material that resembles soft skin. Through the Internet, it can be teleoperated from anywhere in the world with a laptop or PC and a headset. Telenoid has nine independent actuators to synchronize itself with teleoperator's motion; it can speak, look around, and give a hug with its arms. We have run various field experiments using Telenoid with the elderly, especially those with dementia, to encourage conversation with others and investigate its effect on BPSD. **Results & Discussion** Telenoid's appearance may provide a negative impression. However, once people hug and interact with it, the impression becomes positive<sup>2</sup> (Figure 2). This effect is much stronger for elderly individuals, who are attracted to Telenoid from the beginning (Figure 3). Through field studies in Japan and Denmark, we found strong effects to the elderly with dementia. Telenoid induced active communication to the elderly with mild dementia, and physical interaction to those with severe dementia<sup>3,4</sup>. Several other research projects have been explored, such as philosophical studies on humanness, investigating cognitive aspects of dementia, and Danish national project to shorten patients' duration in hospitals (Patient@Home). When introducing new equipment such as Telenoid to care facilities, we cannot just pass them; we need to carefully consider various topics such as training course for staff to understanding its usage and effects, and guidelines for proper utility. We will report on such and result of long-term trial in care facilities as well.

**References**

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Figure 1. Telenoid R3b

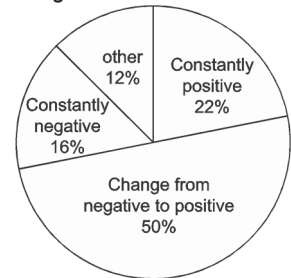


Figure 2. Impression toward Telenoid after interaction



Figure 3. Elderly interacting with Telenoid