

K. Nakajima, H. Matsui, T. Motoya, K. Sasaki. *Television-operating-state telemonitoring system in caring for elderly people living alone*. *Gerontechnology* 2008; 7(2):171. The number of elderly people living alone is increasing rapidly as the aged population increases. As elderly women who live alone are considered at greater risk for loneliness, depression, and decreased mobility¹, the elderly living alone may need health and social care. Some commercial health and social care services including emergency call services are available in Japan. However, these services are rather expensive because these are available 24 hours a day, 365 days a year. Nobody will buy this kind of service if the elderly people independent in ADL in question do not have a clear need for it. Television (TV) is the most widely used electric appliance and people in developed countries use it every day². We suppose that a television-operating-state (TVOS), i.e., whether a TV is turned on (TV-on) or off (TV-off), expresses the consistency of the rhythms of the long-established everyday rituals of a dweller. We reported that a subject, a 78-year-old female who lived alone, watched TV at roughly fixed times when she was healthy, and a deviation from the normal pattern was identified in the TVOS profile when she was sick³. The aim of the present study is to develop a low-cost TVOS telemonitoring system in caring for elderly people living alone, and to confirm that the TVOS of a subject living alone reflects her daily rituals. **Methods** The system is comprised of both analogue and digital circuit sections. The analogue circuit section consists of a current sensor and amplifier, and outputs the TVOS. The digital circuit section consists of two computers with an Internet connection. The computer at the family's end requires the data from the computer at the elderly person's end to be transmitted via the Internet every minute, receiving the TVOS data with a one-minute delay. Two healthy subjects, a 79-year-old female living alone (Subject A) and a 22-year-old bachelor (Subject B), participated in the present trial. We installed the TVOS telemonitoring system to a TV in her living room. The trial was conducted during a period of over five weeks. We gave a notebook to Subject A to record her TV use with a time resolution of 5 min. **Results and discussion** In the period of this trial, the number of instances of TV-on in total was 107 according to the system's record and 104 according to Subject A's record, respectively. An average period of TV-on was 372 ± 130 min (mean \pm SD) per day by the system record and 363 ± 129 min by Subject A's record, with a coincidence rate of 88.6 ± 18.0 % in the TV-on period. Figure 1 shows Subject A's TV usage rate over five weeks. Three clear peaks were obtained. These peaks could reflect her habits of TV use. This system does not specifically describe the health condition of an elderly person living alone, but if that individual's family is familiar with the elderly person's viewing habits, they would be able to identify any change that might indicate a need for assistance.

References

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Address: University of Toyama, Japan; E: kazukin@eng.u-toyama.ac.jp

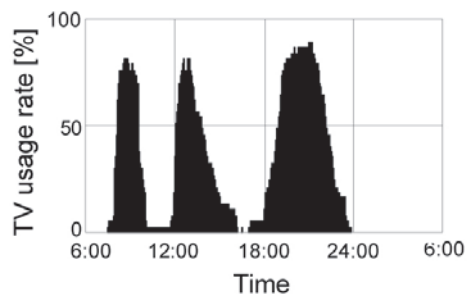


Figure 1 TVOS usage rate over five weeks