Exploration of factors associated with stress among family caregivers taking care of people with dementia C. Greiner, H.L. Chiu, C. W. Huang, M. Nakamura. *Gerontechnology* 25(s*)*

Purpose The purpose of this study was to investigate the biological information, behaviors, and living environments of people with dementia (PWD) and their family caregivers (FCs) using objective devices capable of collecting continuous 24-hour longitudinal data. By integrating these objective data with subjective data obtained through communication with a Virtual Agent (VA), this study aimed to explore the impact of home caregiving on the physical and psychological well-being of FCs. **Methods** Participants were recruited through day-care service centers and other community-based facilities after obtaining informed consent from both PWD and their FCs. This study was approved by the Institutional Review Board in both Taiwan and Japan. FCs were eligible if they had been providing care for at least six months. Both PWD and their FCs wore a smartwatch for seven consecutive days to collect primarily stress and sleep data. Stress data are measured every 3 minutes on a scale from 0 to 100, while sleep data are recorded every minute on a scale from 1 to 4. A computer equipped with a Virtual Agent (VA) was installed in each household, typically in the living room, to gather qualitative data from FCs. This system recorded FCs' thoughts and experiences through conversational interactions with artificial intelligence (AI) and was used to explore factors related to the objective data. Autonomous sensor boxes were placed in the living space to capture behavioral and environmental data (e.g., temperature, illumination) [1]. Additional data collected from FCs included demographic information, health status, caregiving activities, the Perceived Stress Scale (PSS), the Japanese version of the Zarit Caregiver Burden Interview (J-ZBI_8), and the Profile of Mood States, 2nd Edition—Adult Short. For PWD, demographic data, care level, the Clinical Dementia Rating–Japanese version (CDR-J), the Neuropsychiatric Inventory–Brief Questionnaire Form (NPI-Q), and the Barthel Index (BI) were collected. **Results and Discussion** Data were collected from nine dyads of PWD and their FCs in Taiwan. The mean age of PWD was 82.8 years, of whom eight were women. The mean age of FCs was 68.1 years, including four women. The dyads consisted of five spousal pairs and four parent–child pairs. A positive relationship was observed between the sleep quality of FCs and that of PWD. Additionally, stress level of FCs and those of PWD were suggested to be strongly related. FCs reported lower stress when the PWD had higher levels of independence in ADL. Given the observed associations between sleep quality and stress in both FCs and PWD, the findings suggest that supporting not only FCs but also the sleep and stress management of PWD may enhance the sustainability of home-based dementia care [2]. The development of programs to promote the well-being of older adults with dementia and their family caregivers is warranted in the future.

References

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Keywords: Dementia, Family caregivers, Stress, Sleep, Taiwan
Affiliation: Graduate School of Health Sciences, Kobe University, Japan
Email: Greiner@harbor.kobe-u.ac.jp; ORCID iD Chieko Greiner (0000-0002-3127-7307)
Acknowledgement: This study was partially supported by the Pfizer Health Research Foundation, International Joint Research, and JSPS KAKENHI Grant Number JP20H04014.