

# POSTER PRESENTATION 3: PHYSICAL AND MENTAL HEALTH

## The effect of intervention using an emotional recognition coaching companion robot on the elderly people with depression

K. M. Kim, B. H. Yoon, Y. H. Sea, S. H. Park, J. H Song, H. J. Yun

**Purpose** During the COVID-19 pandemic, care for the elderly in the community was greatly limited. Accordingly, the demand for alternative community care can cope with changing situations is increasing. In this study we found that if companion robot improve mood state and related problem in depressive or isolated elderly. **Method** For 186 community dwelling elderly who have received social welfare service due to depression or social isolation, we provided companion robot that could support their daily living and allow them enjoying entertainment. And the robot was equipped with special program, helped recognize their own emotion. It was part of behavioral activation techniques which is one of powerful depression treatment. The self-report questionnaire was used to measure changes cognitive function, depression, suicidality, loneliness, resilience and satisfaction of life. Outcomes were measured before using companion robot and after 3 months, and we compared them. **Results and Discussion** We were confirmed that the elderly using companion robot improved cognitive function, depression, suicidality and loneliness. After 3 month using robot, cognitive impairment was decreased (45.7% to 30.1%) and depression ( $p<0.001$ ), suicidal ideation ( $p<0.001$ ), loneliness ( $p=0.033$ ) were also decreased. Resilience ( $p=0.749$ ) and satisfaction of life ( $p=0.246$ ) were increased but not statistically significant. These results showed that the use companion robot with emotional recognition coaching program could help improve depression, cognitive function, loneliness and suicidal ideation. In particular, this effect was also useful for those who were diagnosed with depression. Also if we can put more techniques of behavioral activation programs into robot, it could be useful in community care for depressive elderly who isolated.

### References

- Dan Blazer, Bruce Burchett, Connie Service, Linda K. George (1991). The Association of Age and Depression Among the Elderly: An Epidemiologic Exploration. *Journal of Gerontology*, 46(6), M210-M215.
- Sona Dimidjian, S. Hollon, K. Dobson, K. Schmaling, R. Kohlenberg, M. Addis, R. Gallop, J. McGlinchey, David K Markley, J. Gollan, David C. Atkins, D. Dunner, N. Jacobson less(2006). Randomized Trial of Behavioral Activation, Cognitive Therapy, and Antidepressant Medication in the Acute Treatment of Adults With Major Depression. *Journal of consulting and clinical psychology*
- Young-in Kim, Hae-woo Lee, Tae-ho Kim, Jee-hee Kim, Kyong-in Ok (2020). The Effect of Care-Robots on Improving Anxiety/Depression and Drug Compliance among the Elderly in the Community. *J Korean Soc Biol Ther Psychiatry*: 26(3), 218-226.

**Keywords:** behavioral activation, emotional recognition, companion robot, depression, elderly

**Address:** Naju National Hospital, Republic of Korea

**Email:** [heilyoos@gmail.com](mailto:heilyoos@gmail.com)

**Acknowledgement:** This research was supported by Basic Science Research Program through the National Research Foundation of Korea (NRF) funded by the Ministry of Science, ICT & Future Planning (2022M3E8A1080838)

**Table. Change the mental status**

	Total (Mean±SD)	
	Before	After
<b>GDS*</b>	10.29±2.71	9.05±2.86
<b>SIS*</b>	15.52±6.19	9.25±6.24
<b>UCLA*</b>	51.73±11.38	49.81±10.26
<b>Resilience</b>	15.89±5.82	16.04±4.56
<b>SWLS</b>	14.59±6.89	15.13±5.93

\*  $p<0.05$ ; GSD=Geriatric Depressives scale, SIS=Suicidal Ideation scale ;  
UCLA=UCLA Loneliness scale, SWLS=Satisfaction with Life Scale

**Figure. Changes of high risk group**

