A social robot in long-term care – Use cases, challenges and expectations from the employees' perspective

J. Schoch, K. Baumgärtner, D. Moroz

Purpose Considering demographic change, the care sector is facing major challenges. While the proportion of elderly people in need of care is increasing, the number of professional caregivers is declining. For some years now, there has been hope of reducing this discrepancy through digitalization and technological developments. Robotic systems have the potential to reduce caregiver burden and to improve the quality of life of people in need of care (Silvera-Tawil, 2024; Ohneberg et al., 2023). In response to the senior residents' need for social interaction and companionship, the German company navel robotics developed the social robot "Navel". Based on various AI technologies, Navel (Figure 1) supports nonverbal interaction in addition to verbal communication. It detects nonverbal signals such as facial expressions or direction of gaze and responds with facial expressions and gestures. Navel focuses on cognitive and emotional care activities, providing relief in these areas (Toussaint et al., 2023). A pilot project with Navel is being conducted in two nursing homes of the Evangelische Heimstiftung, a diaconal and non-profit care company in Southern Germany, where Navel is in use since the end of 2023. The acceptance and effects of its use on residents and staff are being evaluated by the intern Institute of Care and Aging. **Method** Before the robot was introduced into the nursing homes, we conducted a preliminary study. At this time, the staff were informed about the deployment of the social robot in their facility, but they had not yet experienced or tested it in practice. The aim of the study was to explore technology readiness of the staff, attitudes towards the use of a social robot in care as well as hopes, expectations and concerns regarding Navel. For this purpose, a questionnaire survey was carried out with professional caregivers and daytime companions (n=51). The questionnaire included a brief standardized measure of technology commitment (Neyer et al, 2012). To evaluate the attitudes towards social robots a new scale was developed based on a workshop with employees. In addition, expert interviews were conducted with managers (n=6) to explore expectations, opportunities and challenges created by social robots. These interviews also aimed to identify crucial functionalities of a social robot and situations in which it can be useful in a nursing home. **Results and Discussion** The results show a general openness and positive expectations among both managers and employees. More than half of the employees are open to new technical developments; 49% believe that social robots will become increasingly important in care. However, 82% do not think that social robots offer a solution to the shortage of professional care givers. The added value of a social robot is seen more in the area of fun and entertainment for the residents and less in terms of supporting employees. The managers see opportunities and possible applications in the context of individual and group activities. They identified characteristics and functions that the robot should have including being empathetic, singing, and providing information. They also reflected on the fears, challenges and limitations of using social robotics with regard to certain situations and target groups (e.g. people with dementia).

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Affiliation: Institut für Pflege und Alter, Evangelische Heimstiftung GmbH, Stuttgart, Germany
Email: judith.schoch@ev-heimstiftung.de

Figure 1. Navel robot (Source: Navel robotics)