

## Chapter 4

# Proposal for Pervasive Elderly Care: A Case Study With Next of Kin

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### **ABSTRACT**

*This chapter reports how interaction between family members and caregivers as perceived by family members could be improved via context-aware, imperceptible internet of things (IoT)-based solutions. The qualitative study focused on investigating experiences of the family members and the communication between caretakers in sheltered accommodation. Interviews including both open and closed questions revealed that there is high need for improving the communication, adding to the sparse earlier knowledge. The study revealed that the family members were willing to adopt an application to improve the communication that currently was experienced as too limited and vague. The results provide a fruitful base for further actions to improve communication between family members and professional caretakers.*

### **INTRODUCTION**

The purpose of our study was to investigate how family members of the elderly experience the potential use of assistive technology in sheltered accommodation when interacting with caretakers. The motivation for this study arose from earlier studies that revealed a lack of or slender interaction between caretakers and family members of elderly care centre residents.

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## ***Proposal for Pervasive Elderly Care***

The numbers of elderly are increasing globally, and the growth is expected to continue (Medjahed et al., 2011). The supportive role of family members in assisting their elderly is important and may lead to reduced costs down the line (Bolin et al., 2008). Along with ageing, the need for assistance and care increases, and the elderly are moving to accommodation that can offer more support than at private homes (Hainstock et al., 2017). However, the rising number of ageing occupants also means an increased need for care and resources from the caregivers (Alam et al., 2012).

Guiding family members is one of the duties of nurses. Family members bring meaning, continuity and importance to the lives of the elderly. It is important to encourage and support relatives to interact with the elderly and nursing staff (Andersen, 1995; Doty, 1986). The current study investigated the possibilities of state-of-the-art technology to support interaction between caretakers and visiting family members and other next of kin of the occupants. The research problem was compressed into a research question: How do next of kin of the elderly living in sheltered accommodation consider using assistive technology when communicating with personnel who take care of the elderly? To answer the research question, methods of qualitative research were applied in a home (dubbed Comfort in this paper) offering sheltered accommodation for elderly. Qualitative interviews were carried out in Comfort, and eight persons representing the next of kin participated in the study.

By identifying the family members' worries during their visit, it was hoped the bottlenecks resulting from the care work can be reduced, enabling family members to participate in different stages of the care. In addition, there already are devices that provide intelligent surveillance technology to help elderly people live in safety while providing energy efficiency, comfort and automation (Wong et al., 2017).

However, the question remains: Are family members willing to apply assistive technology to ease information sharing and reduce uncertainty related to the wellbeing of their elderly?

## **BACKGROUND**

### **Elderly in Sheltered Accommodation**

The proportion of aging populations is growing worldwide, and explosive growth is expected to continue (Medjahed et al., 2011). When supporting the elderly to maintain their independence and quality of life, the role of family is crucial. However, the next of kin can experience too heavy a burden in caring for their elderly and continuing their lives (Hainstock et al., 2017). Sheltered accommodation and treatment costs are rising, and illness is more prominent, requiring additional resources for nursing staff (Alam et al., 2012). Studies show that the life of the elderly is more meaningful in nursing homes than in an institutional care facility (Nikmat et al., 2015; Tuominen et al., 2016). In the nursing home, the elderly can have their own rooms and live in their own apartments surrounded by their own belongings. Nursing staff is available 24/7 (Coelho et al., 2015); however, with an increasing number of residents, so does the workload of nursing staff increase, thus weakening the premise of better care of patients, mostly due to efficiency bottlenecks (Huttunen et al., 2018). Intelligent care systems provide many opportunities to overcome such challenges, and elderly well-being, health and functional ability have been shown to improve with wearable sensors and personal area networks (PAN) (Wong et al., 2017).

It is natural for the nursing staff to recognise the limitations of older people's ability to perform daily tasks, thus empowering them to provide high-quality care for the elderly. Guiding and providing information to family members are among the duties of a nurse, and the role of the family in service

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