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Symbiosis of Technology and Ethics: Preliminary Results of an Inquiry into the Moral Dimensions in the Use of Robotic Systems in Patient Care

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Abstract. The present study aims to describe ethical and social requirements for technical and robotic systems for caregiving from the perspective of users. Users are interviewed in the ReduSys project during the development phase (prospective viewpoint) and after technology testing in the clinical setting (retrospective viewpoint). The preliminary results presented here refer to the prospective viewpoint.

Keywords. Assistive Robotics, Ethical Issues, Nursing Research, Qualitative Research

1. Introduction

Technical systems for vulnerable groups must be oriented towards the needs of the users. In this context, ethical and social requirements from the perspective of users play a crucial role already during the technology development phase [1]. The ReduSys project addresses these challenges and aims to relieve nursing professionals and improve patient care through a multimodal technical system.

2. Methods

The qualitative longitudinal design integrates the Care-Centered Framework and the methodology of Care Centered Value-Sensitive Design (CCVSD). The five dimensions of CCVSD (Context, Practice, Actors involved, Type of robot, and Manifestation of moral elements) were incorporated into the episodic interview guide [2, 3]. The first phase of the study is part of the technology development phase (prospective viewpoint). A total of 23 individuals were interviewed: nursing professionals (n=7), health care professionals (n=6), patients (n=9), and family members (n=1). The data were analyzed using the Thematic Analysis approach by Braun and Clarke [4]. This procedure will be repeated in a second part of the study to elucidate comparisons between the different phases where the retrospective viewpoint is captured.

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3. Results

The preliminary results suggest that participants express concerns regarding a potential loss of interpersonal interaction and empathy in the context of the application of robotic systems, as well as fears of social isolation: “[…] Nursing staff might only come in personally to see the patient twice per shift, and the rest is somehow controlled through the robot. I view this critically if the patient no longer encounters any human presence“ (IP6, Pos. 36). Moreover, the participants express the concern “[…] that people could become anxious if a robot suddenly rolls into the room […]“ (IP7, Pos. 10). Patient-related factors such as age, illness, and cognitive abilities play a crucial role in this regard. The participants emphasize the importance of considering these factors in the development and application of technical systems: “I work with very severely affected patients, and they need to be awakened partially at first. […] I also don't know if they are just waking up or in a transitional stage, whether they might get scared if a robot speaks to them because patients in rehabilitation clinics are often older and not so tech-savvy” (IP5, Pos. 12). Participants are furthermore of the opinion that robots should only be used as a supplement to nursing staff and must not replace them: “I have to emphasize that it is not a replacement for me but rather serves as a supportive process“ (IP10, Pos. 18).

4. Discussion

Ethical and social requirements can vary depending on the technical system and its potential applications. The preliminary results align with normative and societal positions. It remains to be seen how users evaluate the technology after testing in the clinic and what similarities and differences emerge in the assessment. Furthermore, the study provides an opportunity to evaluate and further develop the CCVSD.

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