

Ready, set, go! Sequence models to identify trigger and interaction points during collaboration tasks with care robots.



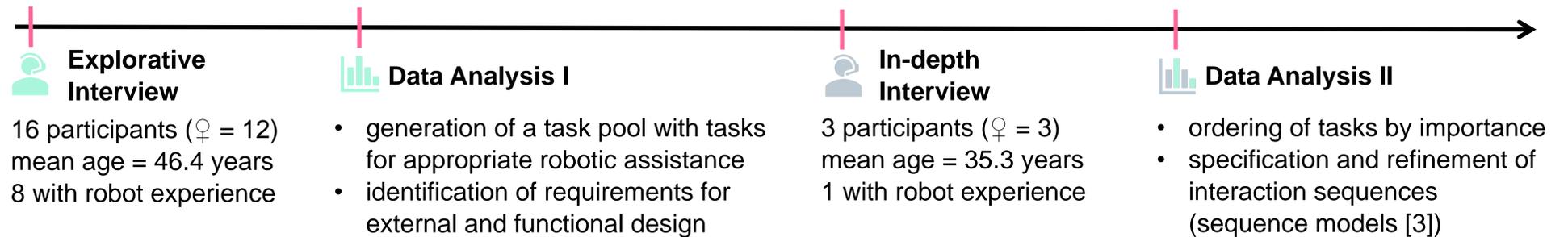
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Introduction

By 2030 the amount of 10.6 million professionals worldwide is missing to meet the demand of caregivers [1]. The integration of care robots offers a possibility to compensate these shortcomings and to relieve caregivers in their daily work routine. In order to achieve actual relief instead of further complexity through the use of care robots, caregivers should be involved at an early stage in the development process [2]. The aim of our study was therefore to identify potential **application areas for robotics** from the perspective of care and social workers and the definition of **detailed interaction scripts** including interactional triggers and communication channels.

Method

In two consecutive, semi-structured online-interviews, 19 caregivers were interviewed via DFNconf and Zoom.

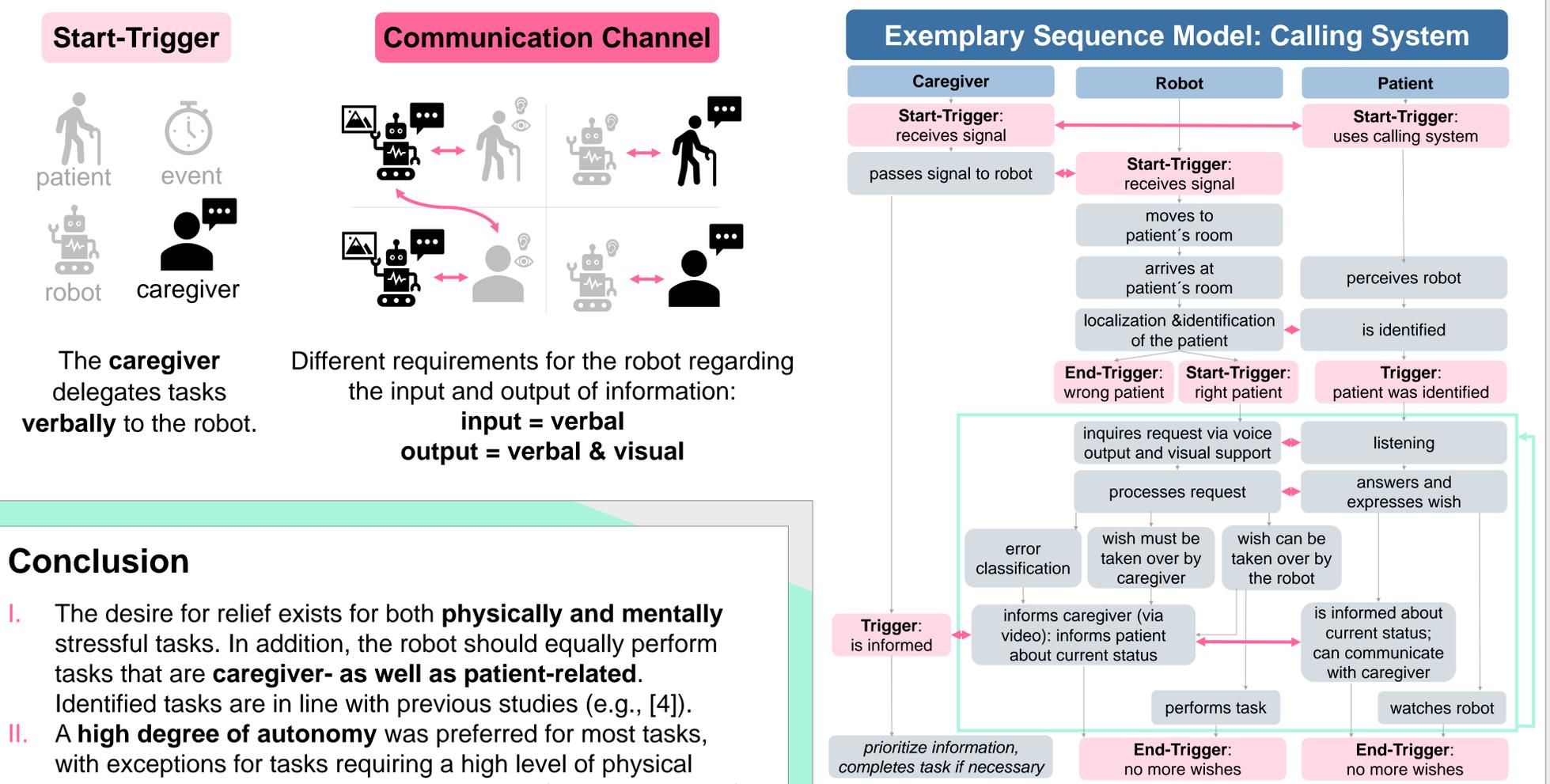


Results

Task Pool

(1) calling system (2) mobilization of patients (3) reminder function	(4) patient monitoring (5) documentation (6) sorting medication	(7) nutrition (8) social care (9) distributing medication (10) transport of objects	(11) body care (12) emergency care (13) tasks with third parties
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Potential application tasks for robotic assistance identified by caregivers.
Note. Ordered from most important (left) to least important tasks (right).



Conclusion

- I. The desire for relief exists for both **physically and mentally** stressful tasks. In addition, the robot should equally perform tasks that are **caregiver- as well as patient-related**. Identified tasks are in line with previous studies (e.g., [4]).
- II. A **high degree of autonomy** was preferred for most tasks, with exceptions for tasks requiring a high level of physical proximity to patients or involving oral intake (medication, food).
- III. **Caregiver in-the-loop** is desired: as start-trigger and through constant feedback by the robot, the caregiver retains the **overview and responsibility**.
- IV. A **multimodal interface** is preferred, which should be adapted to different user groups. Results underline the need for a more specific consideration of the robot's **input and output channels**. Moreover, a possible **remote connection** should be considered.

Acknowledgments



This work was funded by the German Federal Ministry of Education and Research (BMBF) within the project "RoMi - Roboterunterstützung bei Routineaufgaben zur Stärkung des Miteinanders in Pflegeheimen" under grant no 16SV8436.

Further project details can be found at our homepage: www.romi-projekt.de

Literature

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- [2] Buchan, J., Catton, H., & Shaffer, F. A. (2020). Ageing well? Policies to support older nurses at work. In *International Centre on nurse Migration*. Philadelphia: International Centre on Nurse Migration.
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- [4] Coco, K., Kangasniemi, M., & Rantanen, T. (2018). Care personnel's attitudes and fears toward care robots in elderly care: a comparison of data from the care personnel in Finland and Japan. *Journal of Nursing Scholarship*, 50(6), 634-644.