Potential Effects of Social Robots in Elderly Care

Robotics is a broad area with many different applications. The type that can interact and sometimes communicate with humans is called social robots. One area where the use of these robots has been encouraged is in elderly care.[3] However, implementation in this sector should not be rushed, and the excitement of new technology should not precede proper research. This text will analyse the potential undesirable effects of using social robots in elderly care and refute the main arguments for such use.

Loneliness amongst elderly people is a widespread problem. According to SCB, about 15% of people aged 85 and above are socially isolated in Sweden. That is far more than the average across all age groups, which is around 4%.[2] Social interaction is important and can even improve symptoms of dementia[1], a condition 20% of Swedes above 80 suffers from [4]. Several studies have been conducted on social robots in elderly care, both on robot pets and humanoids. The benefits are not clear which raises several questions to be discussed.

Social robots can offer companionship for older adults and be beneficial for their well-being. Studies have shown that pet robots can reduce loneliness and give patients with dementia an opportunity to care for someone. Caring behaviour has been shown helpful in, for example, maintaining self-esteem.[5][6] This supports the notion that social robots can be useful in elderly care.

However, the effect they have on loneliness over time is uncertain. Very few studies have been made where the participants were monitored for long periods of time. Furthermore, the results of the conducted studies show that the effects vary considerably from person to person.[6] Some people with dementia even had negative effects from the pet robots. These stemmed from things like the robots' well-being worrying them and causing them stress.

Another questionable thing is if robot interaction is as beneficial as human interaction. Studies have compared human-robot interaction with the interaction between animals and humans, and between regular dolls and humans. However, human-robot interaction has not been compared to human-human interaction.[7] There is reason to worry that social robots are used to replace human interaction in times when living facilities are understaffed and the absolute necessities, like feeding, are prioritised. The robots may give a false sense of security that the elderly's needs are taken care of. Instead, proper staffing should be the goal to strive for to ensure proper socialisation, and to secure its benefits.

Apart from reducing loneliness, social robots can increase social interaction amongst the elderly. As mentioned before, social interaction does not only reduce loneliness. It can also improve the symptoms of dementia. Studies show that social robots can increase the interaction between patients in living facilities, and between the patients and their families and staff.[6] One reason was that the robot gave them something easy to discuss. Moreover, the inclusion of a robot when two elderly people play games was shown to encourage human-human interaction.[8] These are positive effects; however, robots are not necessarily

needed to achieve similar results. Other, more proven tools, can be used to stimulate interaction.

Especially when dealing with people with dementia ethical concerns arise. One of those is that the patients can have trouble differentiating between robots and the real thing the robot is imitating. That can be true for both realistic humanoids, like babies, and pet robots.[7][6] Apart from the fact that it can increase distress and confusion, deceiving people can be seen as morally wrong. Since the patient is not in a state to approve of such treatment, the use is even more questionable.

The positive effects of social robots in elderly care lack research. Although an interesting area for further investigation, caution should be taken when using them with real people. There are questions to ask regarding the ethics of these robots in elderly care that are difficult to answer. An individual's opinion can vary and should be taken into account. Furthermore, the actual effect the robots can have on, for example, loneliness, is not confirmed. That reinforces the idea that more research is crucial before social robots, potentially, can be implemented on a larger scale. Before then, humans should not be used as guinea pigs.

References

[1] Dementia Care Central. Importance of Maintaining Social Interactions & Activities with Dementia or Alzheimer's. 2021. https://www.dementiacarecentral.com/caregiverinfo/handsoncare/socialization/ (accessed 2022-02-16)

[2] SCB. Fyra procent är socialt isolerade. 2019. https://www.scb.se/hitta-statistik/artiklar/2019/fyra-procent-ar-socialt-isolerade/ (accessed 2022-02-15)

[3] Regeringskansliet. Framtidens teknik i omsorgens tjänst. 2020. https://www.regeringen.se/rattsliga-dokument/statens-offentliga-utredningar/2020/03/sou-2020214/ (accessed 2022-02-16)

[4] Alzimerfonden. Demens - vår nya folksjukdom. https://www.alzheimerfonden.se/demenssjukdom (accessed 2022-02-16)

[5] J. Pirhonen et al. Can robots tackle late-life loneliness? Scanning of future opportunities and challenges in assisted living facilities. Futures. 2020;124

[6] Thunberg S., Rönnqvist L., Ziemke T. (2020) Do Robot Pets Decrease Agitation in Dementia Patients?. In: Wagner A.R. et al. (eds) Social Robotics.

[7] Noel Sharkey, Amanda Sharkey. The eldercare factory. 2011

[8] Yi-Chun Lin et al. Use of robots to encourage social engagement between older adults. Geriatric Nursing. 2022;43