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Scoping review on the use of socially assistive robot technology in elderly care

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Objective: With an elderly population that is set to more than double by 2050 worldwide, there will be an increased demand for elderly care. This poses several impediments in the delivery of high-quality health and social care. Socially assistive robot (SAR) technology could assume new roles in health and social care to meet this higher demand. This review qualitatively examines the literature on the use of SAR in elderly care and aims to establish the roles this technology may play in the future.

Design: Scoping review.

Data sources: Search of CINAHL, Cochrane Library, Embase, MEDLINE, Psych INFO and Scopus databases was conducted, complemented with a free search using Google Scholar and reference harvesting. All publications went through a selection process, which involved sequentially reviewing the title, abstract and full text of the publication. No limitations regarding date of publication were imposed, and only English publications were taken into account. The main search was conducted in March 2016, and the latest search was conducted in September 2017.

Eligibility criteria: The inclusion criteria consist of elderly participants, any elderly healthcare facility, humanoid and pet robots and all social interaction types with the robot. Exclusions were acceptability studies, technical reports of robots and publications surrounding physically or surgically assistive robots.

Results: In total, 61 final publications were included in the review, describing 33 studies and including 1574 participants and 11 robots. 28 of the 33 papers report positive findings. Five roles of SAR were identified: affective therapy, cognitive training, social facilitator, companionship and physiological therapy.

Conclusions: Although many positive outcomes were reported, a large proportion of the studies have methodological issues, which limit the utility of the results. Nonetheless, the reported value of SAR in elderly care does warrant further investigation. Future studies should endeavour to validate the roles demonstrated in this review.

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