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Innovations: social robotics in healthcare: implications for policy

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Abstract

Social robots are complex machines which can interact with people and with each other. Within healthcare, social robots are seen as a possible way to address the growing human resource and economic pressures on healthcare systems[1]. The purpose of this project was to get an overview of the social robotics field and its focus in terms of health and wellness applications, current issues/challenges in the field, and implications for health policy. We conducted a literature review of research papers focused on social robotics. Literature was collected from the following databases: ScienceDirect, Compendex, IEEE, Communication Abstracts, Scopus, OVID(All), EBSCO(All), Academic One File, Web of Science, and JSTOR. Out of 489 articles, we included 171 (based on social-science related content; excluded: pure technical papers). Articles were coded using Atlas.ti qualitative data analysis software. Main healthcare applications of social robots included eldercare[2], autism[3], and rehabilitation therapy[4]. Major challenges for social robotics included acceptance, safety, ethics (of using robots in healthcare), and employment implications (i.e. robots taking over human jobs). These issues must be considered by care providers and health policy makers if social robots are to be implemented in healthcare in a socially acceptable and appropriate manner. In addition, we conducted a survey of a disability service organization in Saskatchewan which revealed important themes and issues related to the acceptance of social robots as aids for disabled persons.

References

1. Sparrow, R.S., L. (2006). In the hands of machines? The future of aged care. Mind Mach. 16, 141-161.
2. Gelderblom, G.J.; Bemelmans, R.; Spierts, N.; Jonker, P.; deWitte, L. (2010). Development of PARO interventions for dementia patients in Dutch psycho-geriatric care. In: Proceedings for ICSR 2010. 401-409. Springer: Berlin.
3. Boccanfuso, L.; O'Kane, J.M. (2011). CHARLIE: An adaptive robot design with hand and face tracking for use in autism therapy. Int. J. Soc. Robot., 3:337-347.
4. Ang, M.; Limkaichong, L.; Perez, W.; Sayson, L.; Tampo, N.; Bugtai, N.; Estanislao-Clark, E. (2010). Development of Robotic Arm Rehabilitation Machine with Biofeedback that Addresses the Question on Filipino Elderly Patient Motivation. In: Proceedings for ICSR 2010. 401-409. Springer: Berlin.