



AALBORG UNIVERSITY
DENMARK

Aalborg Universitet

Testing the Social Robot LOVOT's Interaction With Adults With Autism and Mental Impairment: Preliminary Findings

Gregersen, Lajla Holtebo; Dalskov Leisted, Sofie; Samuelson, Frederik; Dinesen, Birthe

Published in:
Iproceedings

DOI (link to publication from Publisher):
[10.2196/41524](https://doi.org/10.2196/41524)

Creative Commons License
CC BY 4.0

Publication date:
2023

Document Version
Publisher's PDF, also known as Version of record

[Link to publication from Aalborg University](#)

Citation for published version (APA):

Gregersen, L. H., Dalskov Leisted, S., Samuelson, F., & Dinesen, B. (2023). Testing the Social Robot LOVOT's Interaction With Adults With Autism and Mental Impairment: Preliminary Findings. *Iproceedings*, 9, Article e41524. <https://doi.org/10.2196/41524>

General rights

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the public portal -

Take down policy

If you believe that this document breaches copyright please contact us at vbn@aub.aau.dk providing details, and we will remove access to the work immediately and investigate your claim.

Abstract

Testing the Social Robot LOVOT's Interaction With Adults With Autism and Mental Impairment: Preliminary Findings

Lajla Holtebo Gregersen¹, MSc; Sofie Dalskov Leisted², BA, MSc; Frederik Samuelson², BA, MSc; Birthe Dinesen², MSc, PhD

¹Team Strategy and Development, Jobs and Welfare, Aalborg Municipality, Aalborg, Denmark

²Laboratory for Welfare Technology – Digital Health & Rehabilitation, Sport Sciences – Performance and Technology, Department of Health Science and Technology, Aalborg University, Aalborg, Denmark

Corresponding Author:

Lajla Holtebo Gregersen, MSc
Team Strategy and Development, Jobs and Welfare
Aalborg Municipality
Søndergade
Aalborg, 9000
Denmark
Phone: 45 99827420
Email: lgre-jv@aalborg.dk

Abstract

Background: Persons with autism and mental impairment face communicative, social, and behavioral challenges, and there is a need to establish effective interventions to improve the quality of daily life. Social robots working with children with autism have successfully improved their communication and social behavior and reduced stereotypic behavior. However, there is only limited evidence regarding the effectiveness of social robots.

Objective: This study aimed to investigate the interactions, effects on well-being, experiences from health care professionals, and ethical aspects of deploying the LOVOT social robot as a tool for adults with autism and mental impairment.

Methods: Two social robots have been deployed in 3 residences. A total of 12 adults with autism and mental impairment were recruited. Individual planned sessions on interaction with the social robots are being carried out twice a week for 20-30 minutes over a period of 6 months. Participant observations are carried out every second week during the 6 months on themes such as well-being, interaction with the robot, the level of arousal, eye contact, and communication. Observations have been documented through standardized observation protocols and by video recording. Experiences from health care professionals and ethical aspects have been explored using semistructured interviews.

Results: Preliminary results indicate that LOVOT has improved the well-being of participants. Although the participants' interest in LOVOT varies, the health care professionals report that some participants find great satisfaction interacting with LOVOT, describing LOVOT as a friend, and that LOVOT can provide comfort in stressed situations. Two LOVOTs were damaged by the participants during the study, indicating the importance of robust material in interventions with adults with autism and mental impairment.

Conclusions: Preliminary findings indicate that social robots can increase well-being among persons with autism and mental impairment. Future care of persons with autism and mental impairment might benefit from the use of social robots as part of their care and quality of life.

Conflicts of Interest: None declared.

(*iproc* 2023;9:e41524) doi: [10.2196/41524](https://doi.org/10.2196/41524)

KEYWORDS

telerehabilitation; artificial intelligence

Edited by T Leung; this is a non-peer-reviewed article. Submitted 28.07.22; accepted 27.03.23; published 03.04.23.

Please cite as:

Gregersen LH, Dalskov Leisted S, Samuelsen F, Dinesen B

Testing the Social Robot LOVOT's Interaction With Adults With Autism and Mental Impairment: Preliminary Findings

iproc 2023;9:e41524

URL: <https://www.iproc.org/2023/1/e41524>

doi: [10.2196/41524](https://doi.org/10.2196/41524)

PMID:

©Lajla Holtebo Gregersen, Sofie Dalskov Leisted, Frederik Samuelsen, Birthe Dinesen. Originally published in Iproceedings (<https://www.iproc.org>), 03.04.2023. This is an open-access article distributed under the terms of the Creative Commons Attribution License (<https://creativecommons.org/licenses/by/4.0/>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work, first published in Iproceedings, is properly cited. The complete bibliographic information, a link to the original publication on <https://www.iproc.org/>, as well as this copyright and license information must be included.