

2024

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Recommended Citation

Jørgen Niewald, Hans; Maria Bisgaard Fabricius; and Mette Toft (2024) "7. Practice report: Social robots help social clients become more independent and creates new 'client-professional' relations," *Irish Journal of Applied Social Studies*: Vol. 24: Iss. 1, Article 7.

Available at: <https://arrow.tudublin.ie/ijass/vol24/iss1/7>

7. Practice report: Social robots help social clients become more independent and creates new 'client-professional' relations

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Abstract

The case study describes the work to introduce medicine robots to citizens with social, mental and physical disabilities in the municipality of Holstebro, Denmark. In the case study, we meet Hannah, who for the past six months has received her daily drug substitution (methadone) treatment through a medicine robot in her own home. Based on social client and employee experiences the case study describes benefits and gains - as well as challenges and consequences of the introduction of medicine robots in the daily social work in the Municipality of Holstebro. Emphasis is placed on how welfare technology has an impact on professionals' experience of their role and relationship with social clients: What happens when we replace human relationships with social robots? The case study ends with pointing out key competencies in the future social work in relation to the work with welfare technology.

The Municipality of Holstebro, Denmark experiences a continuing increasing number of clients in need of social help from the specialised social support system. This increase makes it necessary to develop new methods, for us to be able to solve the task in the best way in the future. Here, social robots may be part of the solution.

Social robots have the potential to change our society in different ways. With the term 'social robots' we refer to a special branch within welfare technology developed to interact with people with different support needs, with the aim of enriching their lives in relation to health or social support (Share & Pender, 2018). However, development of social robots targeted at the social area's clients is severely limited. If we want to accelerate development, we need to address existing technologies on the market in a creative and innovative way.

In the medical area, medicinal preparations often find new uses far away from their original purpose. For example, malaria medicine proves to be effective in the treatment of autoimmune diseases, thereby creating new value for new target groups. In the same way, many welfare technology solutions have been developed in relation to eldercare with the

increasing number of elderly people in mind. But in the social field, we see an equally compelling need to find new solutions.

Medicine robots are a well-known tool in eldercare, where the robot helps the elderly in taking the right medicine at the right time, instead of receiving a short visit from a professional. In the social field, a large group of social clients also receive medication for their physical and mental disorders or as part of their substitution treatment. Many of these clients, due to physical and cognitive disabilities, need help to administer their medication. Specifically, for the clients in substitution (methadone) treatment, their addiction can be an obstacle for them to comply with the requirements for when medication should be taken. In these cases, it is the municipality's task to ensure that the social client receives the right and necessary help. For some clients, a medicine robot may be a solution.



Fig. 1 Medicine robot in the social area in Holstebro

In 2018, the social department in Holstebro Municipality introduced medical robots of the brand Evondos. Today, the department has 10 medicine robots. The medicine robot is a mobile container that is placed in the client's own home. The robot works by emitting an alarm at the time when the client is to take his medicine. Then the citizen must press a large round green button in the middle of the robot, whereafter the robot hands out the current dose package of medicine. The robot emits an alarm in an interval of two hours. Hereafter it is no longer possible to receive the medicine. Every 14 days, the employee responsible for medication arrives and fills the machine with dose-packed medication and sets the robot in relation to the daily dosage. If an error occurs, the employees responsible for medication will receive an error message. It can be a user error, if the citizen has forgotten or failed to take their medication - or a technical error if the dose packages get stuck in the machine.

Before the client is offered a medicine robot, a doctor, in collaboration with municipality staff, assesses whether it is a relevant solution for the client in question. Among other criteria, the client must be cognitively capable of taking their medication and must not oppose medical treatment. Hereafter the idea is proposed to the client. It is important to get the client involved from the start to ensure motivation. The client can test the robot, to see if it would be of interest. In that case, an employee responsible for medicine comes visits the client and introduces the robot.

The robots were tested by a total of 15-20 clients in the period 2018-21. For some clients, the medicine robot has shown not to be the right match for practical and personal reasons. Medicine robots are situated at clients living in their own homes or social institutions. In addition, they are mainly used by clients who receive substitution treatment with methadone. What is special about substitution treatment is that the client cannot normally administer their own medicine, which is why it is usually dispensed in the drug treatment clinic located downtown. Since a proportion of this target group experience great physical and social challenges, it is valuable to be able to take the substitution treatment in one's own home. One of these clients is Hannah, whom we shall meet in the following.

Hannah: "I cannot do without it"

In 2022, Hannah got a medicine robot. Hannah is an addict and receives daily substitution treatment to stabilise her drug use. Hannah lives in her own apartment in connection with a larger social housing facility for people with severe social needs. The apartment is part of a small housing community, where social clients with similar challenges live. In addition to help with medication, Hannah also receives social pedagogical support from the municipality's social service.

Previously, Hannah daily had to get up in the morning to go to the local substitution treatment clinic, with a group of other clients, to receive her medicine. Having to leave the apartment every morning was a great pressure for Hannah, that released both discomfort and anxiety. Hannah is diagnosed with PTSD because of traumatic experiences in her past. This is reflected in the fact that she is distressed being around other people: 'I feel best when I get my medicine' she says. Therefore, the new solution with the medicine robot gives Hannah a completely different start of the day, that allows her to prioritise her energy on other things.

The robot is activated every morning from seven until nine o'clock. It is a woman's voice that speaks to her. Within this period, Hannah must press the button: to get her medicine without

having to leave her home. As another side effect of her previous life, Hannah often experiences severe abdominal pain, which is why she is not always well in the morning. She can better accept and take care of this now that she does not have to leave in the morning.

Hannah got the medicine robot recommended by a neighbour who had obtained one herself. The robot is bolted to a table in the apartment, as she has previously experienced having it stolen. She thereafter had to wait to get a new one. It must not happen again: "I cannot do without it."

Hannah does not experience it as a lack, that the contact with an employee in relation to the medicine delivery has been replaced with a robot. At the same time, however, she states that she would probably feel different if she wasn't as physically mobile - and thus did not have the same opportunity to seek out social contact herself. In that case, she thinks she would be missing something in terms of relationships.

Employees' experience of the medicine robot

Technically, the technology is perceived as very user-friendly for both clients and employees, once both parties have become familiar with how the medicine robot works. In relation to the clients, the employees experience it as a benefit that the medicine robots help to make the clients more independent and self-sufficient. This applies both in relation to their own medication treatment, where there is no employee involved - but also in relation to their daily everyday life, where they can plan their day themselves without taking into account a regular medication visit. The employees have examples of clients who have been given the freedom to start fishing again, as they can now take the robot with them in the morning. For other clients, the benefit is – as in the case of Hannah - that the robot helps to save them some energy so that they can spend their time on other things.

In relation to the employees, the robots are perceived as timesaving, as they release time for other tasks. In addition, the robots help reduce errors in medication administration, in Denmark known as 'unintended events' (UTH). From the employee's perspective, it is however emphasised that the most interesting thing is the clients' perceived gain. It continues to surprise the employees how happy the clients are with the possibility of using the robot and how important it can be for their experience of everyday life. In the employee group of medicine managers, the robots are today considered an additional tool that is a natural part of practice. The tool is thus a regular topic in their staff meetings, where they consider whether a new client is a possible candidate.

Despite the benefits, employees are aware that there are disadvantages to the technology as well as advantages. For clients who live in their own home away from social institutions, it is more difficult for the employees to have a holistic sense of the client and their well-being. Similarly, they are aware that the lack of daily contact in connection with the delivery of medicines can be negative for clients where the network is sparse. This is therefore also included in the assessment of who are the candidates for the medicine robots.

Towards a qualified everyday life

These brief descriptions of clients' and employees' experience make it clear how the benefits and opportunities that technology creates must be weighed against the negative consequences that technology can also have. The relational and the human interaction between client and employee is a central theme here, as the medicine robot replaces an often daily face-to-face meeting between the two agents. This is a delicate affair in a social field that traditionally places a high value on the relational. But what if the client benefits from having the social relationship replaced with a technically non-human robot? What if the medicine robot makes the citizen more independent and self-reliant than the personal meeting with staff who dispense the medicine?

This observation emphasises that the social field aims to balance between supporting the client's self-help and independence - while ensuring them the necessary security and care. The social field's main purpose is to co-create the qualified everyday life for and with the client (Social Department 2017). The amount and type of support the individual client receives is always based on a concrete and individual assessment of the specific client's functional level and support needs (Social Department's Quality Standard 2021). The work of the social department in Holstebro Municipality is based on a vision that the effort is a collaboration with the client to create well-being and develop skills that in the best possible way support the client's mastery of everyday life. In recent years, a movement has been seen towards a new paradigm, whereby the municipality has been given a more supportive and delimited role adapted to the individual's level of progression. In collaboration with the client the goal is to establish initiatives that, with the least possible intervention, give the greatest possible effect so that in the long run the client can master life in as independent a way as possible. The new paradigm sees a redefinition of the field's primary task, as well as a new understanding of the employee's role in relation to the client.

This movement is further strengthened with the introduction of new welfare technology instruments (such as medicine robots) that are included as a valuable resource in the interaction with the client. From the social department's Strategy for Welfare Technology it is thus stated in the desired purpose:

- that the citizen with the technology as support will manage everyday life as independently as possible with the experience that the technology is an equal partner
- that technology helps to promote the citizen's active participation in their own lives and experience of co-determination.

These new technologies in social work can be considered as a 'Common Third' in the relational collaboration with the client. Often, the technology will even support an internal dependency only in the relationship between the client and the technology. Here the employee instead takes on the role of a 'peripheral participant' in the interaction between the client and technology.

This development opens new prospects in the performance of the field of social work. Because what happens when medical robots replace the traditional roles and in themselves become agents in the social field?

When medical robots become an actor in the field

The case study's description of the medicine robot's importance in Hannah's life emphasises how things around us are not passive tools. Instead, they have an impact on the practice that unfolds around them. When we use tools and technologies, such as a medicine robot, they influence the social intervention of which they are a part. In that sense, the actors in the social field are not only human - but also non-human actors. It is thus not only human actors, but a network of human and non-human actors that create the effect of the social intervention in question.

With this approach, we focus not only on the relationship between clients and employees - but are also exploring how non-human actors can have significance in relation to mentally and socially vulnerable clients. In the specific case of Hannah and the medicine robot, we see how the robot gives her new opportunities to master her everyday life. In this context, it thus makes no sense to problematise the lack of human contact between professional and client, as it does not seem decisive in the case in question.

That the medicine robot in Hannah's case acquires significance as useful and valuable is again dependent on the context in question. In a different context with another social client, it would have a completely different meaning. As with everything else in social work, we are thus dependent on making personal assessments to create the most valuable solution for the individual client.

The ethical challenge of peripheral participation

If we zoom out and look at the area from a more general welfare perspective, there is no essential difference between welfare technology and other types of aids. The biggest difference lies in the ethical dilemmas associated with the fact that technology has a role in itself, with which the client has their own independent interaction. This relation does not only function on a practical level. It also operates on a personal and emotional level because of the opportunities for life unfolding that the technology offers the client.

This redefines the employee's role to a more peripheral participant who - from a withdrawn position - matches and makes the technology available. On the positive side, it challenges our inherent position of power in relation to social clients - but at the same time it also challenges our ability to uphold our responsibility in relation to supporting the client's well-being. This is a task that we as an organisation must deal with in terms of competence.

To equip the organisation for the robots

In conclusion, this leads to the question of what competencies are needed when working with welfare technology. This is something we will hopefully get wiser on as the experience base expands locally, nationally and internationally. From where we stand now, we can point to four important competencies that we consider to be central to employees in the social field:

a. How does the robot work?

Behavioural competence: practical competencies on how to operate the social robot, including knowledge of how the robot works and the facilities it contains.

b. How do I use the robot in my practice?

Cognitive competence: the ability to connect a given robot to social professional practice. This includes being able to think constructively about the robot's function in relation to a specific client's situation.

c. How do I create a new and meaningful practice with the client?

Constructivist competence: communicative, reflective and social competences in relation to introducing and attributing meaning to the robot for the individual client, in such a way that new practice is established together with the client.

d. What other technological possibilities do I see?

Construction competence: on a more general level, to have an open mindset towards new trends and initiatives. This includes being able to construct new realities, being curious about developing and designing social robots, as well as adopting new technologies.

Good practice recognises and has an eye for all four elements in the introduction of new welfare technologies in the social field.

The case study was produced as part of the PRoSPERo project. The authors are lead manager of social care Hans Jørgen Niewald, consultant Maria Bisgaard Fabricius and welfare technology coordinator Mette Toft. The case study is based on interviews with employees and citizen in Holstebro Municipality.