PERCEPTION OF TECHNOLOGICAL INNOVATIONS AND THEIR IMPACT ON JOB INSECURITY OF NURSING STAFF IN SOCIAL SERVICE INSTITUTIONS

PERCEPCIA TECHNOLOGICKÝCH INOVÁCIÍ A ICH DOPAD NA PRACOVNÚ NEISTOTU OPATROVATEĽSKÉHO PERSONÁLU V ZARIADENIACH SOCIÁLNYCH SLUŽIEB

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Abstract

In the context of increasing digitisation and the implementation of modern technologies in care, concerns are being raised about the possible loss of jobs and changes in working conditions. The aim of the present paper is to quantitatively explore the perception of technological innovations by care staff in social service settings. Carers and caregivers form a key part of client care in social service settings. The findings of the present paper point to the need for active management of technological change in social service settings, particularly through training and adaptation programmes for care staff. The study highlights that perceptions of technological innovation are a key factor in alleviating feelings of job insecurity and recommends further research into the psychological impact of technological change on social service staff. The post was published as part of the FPPV-28-2024 project - Exploration of the social context of self-realization of seniors in the digital environment: research and analysis.

Keywords: nannies, technology, innovation, job insecurity, social services facilities

Abstrakt

V kontexte rastúcej digitalizácie a implementácie moderných technológií do starostlivosti, vznikajú obavy o možnú stratu pracovných miest a zmenu pracovných podmienok. Cieľom predloženého príspevku je kvantitatívne preskúmať percepciu technologických inovácií opatrovateľského personálu v zariadeniach sociálnych služieb. Opatrovatelia a opatrovateľky tvoria kľúčovú súčasť starostlivosti o klientov v zariadeniach sociálnych služieb. Závery predloženého príspevku poukazujú na potrebu aktívneho riadenia technologických zmien v zariadeniach sociálnych služieb, najmä prostredníctvom vzdelávacích a adaptačných programov pre opatrovateľský personál. Štúdia zdôrazňuje, že vnímanie technologických inovácií je kľúčovým faktorom pri zmierňovaní pocitov pracovnej neistoty a odporúča ďalší výskum v oblasti psychologického dopadu technologických zmien na zamestnancov v sociálnych službách. Príspevok vznikol v rámci projektu FPPV-28-2024 – Explorácia sociálneho kontextu sebarealizácie seniorov v digitálnom prostredí: výskum a analýza.

Kľúčové slová: opatrovateľky, technológie, inovácie, pracovná neistota, zariadenia sociálnych služieb

Introduction

The population is ageing, and it will be no different in the near future - the demographic indicators speak clearly. It is therefore essential to reflect these realities in an effective way. The waiting time for a senior citizen to be placed in a social services facility is more than 1 year. What is most worrying is that some seniors will not be able to get a placement in a social services facility due to the enormously long waiting time. If a senior needs continuous social and health care, the most frequently used is the year-round residential social service according to Act 448/2008 Coll. on social services. As stated by the authors Bočáková, Kubíčková and Draková (2023) at the time when a natural person is provided with a social service, such a person becomes a recipient of a social service.

In the care of seniors who are placed in social service institutions, the key workers are the people who come into intensive daily contact with them and provide them with care. In recent years, we have seen a shortage of staff working in social services, because it is a low-paying and not only physically but also mentally demanding job. The rapid implementation of technological innovations in their daily work activities may also cause an increase in the departure of these workers abroad or to completely different sectors of work.

Seniors and Ageing in a Social Services Centre

Given the demographics above, the dominant target group for our paper is seniors. At the outset, however, it is important to define who is considered a senior citizen. As the authors Bočáková and Kubíčková (2015) state, a senior is characterized by his/her belonging to the age group defined as 60 and 65 years old, respectively. Matoušek (2008) states in his publication that ageing is an age period in contemporary Western culture that begins at 60–65 years of a person's life, when people retire. Some people have a greater need for health care or gradually lose self-sufficiency as they age. Only a small proportion of the population live to 80 without health problems and with sufficient self-sufficiency. According to the Statistical Office of the Slovak Republic (2022), Slovakia's population will age very intensively over the next two decades. The average age of the population will increase over the next four decades. By 2040, this growth will be very intense. In less than 20 years, the average age of the population will increase by almost 4 years. During this period, the average age of the population will increase by an average of 0.2 years per year. Határ (2008) points out that ageing is a significant global problem and affects not only the number of people currently experiencing this period, but our entire society. The issue of ageing is also addressed by a number of other authors such as Suchá *et al.*

(2013), Malíková (2011), Pokorná *et al.* (2013), Hegyi *et al.* (2012), Klevetová and Dlabalová (2008), Hudecová *et al.* (2010), Lacko (2011), Haškovcová (2012), Kalvach *et al.* (2004) Bardehle (2016), Pribyl (2015), Jarošová (2006), Slovák (2024), etc. Population ageing thus appears to be a current trend with a high prevalence and it is necessary to respond to this fact in an effective way. Its most significant consequences are seen in the social and health systems of countries and the inherently related economic dimension.

The elderly and their care must therefore be at the centre of the state's attention, and thus of social work and social services. As Dávideková (2014) states, social services and their codified comprehensive regulation are part of the social assistance system and are among the basic pillars of social protection systems. According to Hrozenska *et al.* (2008) are provided by: the Social Insurance Institution - Department of Pension Benefits, Labour, Social Affairs and Family Offices - Department of Social Affairs, self-governing regions - Department of Social Affairs, municipal authorities - Departments of Social Affairs, day care centres, pensioners' clubs, institutions such as social service homes and nursing homes, health care facilities, hospices and other organisations providing social care. As the authors Bočáková, Kubíčková and Draková (2023) state in their publication, social services are developing because of the need for their types and forms. They reflect the need to address the unfavourable social situation of the target groups to which they are directed. The authors Schavel and Oláh (2006), Malíková *et al.* (2007), Zatloukal (2008), Hrozenská *et al.* (2008), Ronald *et al.* (2013), Brichtová *et al.* (2015), Rollová *et al.* (2015), Pilát (2015), Hotová *et al.* (2016), Horecký *et al.* (2020) and others.

Technological Innovations in Social Service Facilities

Seniors are a target group that requires a specific approach. In this context, Ondrusova *et al.* (2009) states that the basis of working with older people should be the establishment of positive relationships that are based on trust and tolerance. At the beginning of building such a relationship, convergence techniques and other methods should be applied, which should gradually be transformed into gaining the trust of the worker and the client, e.g. in a social services facility. In no small measure, the facility itself plays an important role, as it has a significant influence on its clients. According to Silna *et al.* (2018) produces a burden that mainly causes exhaustion, insomnia and spinal problems tend to occur.

Modern technology is penetrating our lives at a relatively fast pace and its functions are significantly affecting the whole society (Sak and

Kolesárová, 2012). Thus, technological innovations are naturally making their way into elderly care, but this raises a number of opinions. In many ways, such as lifting and carrying immobile seniors, modern technology can be an excellent aid precisely for eliminating the physical burden and subsequent health problems of caregivers. They can also be an effective tool for filling the leisure time of seniors or for various therapies. These are therefore technologies that significantly improve the quality of care and help to make the work of care staff more efficient. Below is an overview of selected modern technologies:

a) Robotics:
   - A robotic training device helps seniors with hand rehabilitation, e.g. after strokes and other illnesses,
   - robots to aid movement (e.g. robotic exoskeletons) can help seniors with mobility,
   - social robots, such as the Paro robot (seal pup), are used to improve psychological comfort and social interaction,
   - the Nao robot efficiently performs movement activities and demonstrates exercises that seniors can repeat after it, thus exercising different parts of the body,

b) Wearable devices:
   - Smart watches and wristbands monitor vital signs (e.g. heart rate, movement), enabling continuous monitoring of seniors' health status.
   - Emergency call buttons ensure an immediate call for help.

c) Virtual and augmented reality:
   - Are used for cognitive training or therapy for seniors with dementia. They provide virtual experiences that stimulate memory and senses.

d) Intelligent technologies:
   - such as motion sensors can monitor seniors' activity and alert staff to any unusual behavior. Currently, such sensors are more widely installed in homes where lonely seniors live and are called IDAs - intelligent home care.

e) 3D printing:
   - Using 3D printing, customised - „tailor-made" - compensatory aids, prostheses or orthopaedic devices can be produced to help seniors improve their mobility and quality of life.

f) Cognitive training applications:
   - Specially developed apps, which can be used via tablets or smartphones, allow seniors to improve their cognitive skills through a variety of so-called games and exercises focusing on memory, attention and problem solving.

The introduction of these and similar technologies into practice can significantly improve care for the elderly and facilitate the work of caregivers in social service facilities. However, as Draková (2021) appeals, we must not forget the invaluable personal contact with a fragile being such as a senior, who often needs our closeness, touch, caress, smile or kind words.

Methodology and findings

In the context of our active project „FPPV-28-2024 – Exploring the social context of seniors' self-realization in digital environments: research and analysis", we were also interested in the opinion on technological innovations of those who come into contact with seniors on a daily basis, i.e. caregivers in the case of seniors who are placed in social service institutions.

Tab. I: Positive perception of technological innovations by carers

CATEGORY	ANSWER OF THE RESPONDENT
POSITIVE PERCEPTION BY CARERS	„Technological innovations allow me to streamline day-to-day operations and spend more time in direct contact with our clients."
	„I certainly welcome innovation. For example, social robots like these are a great addition to care – they improve our clients' mood and reduce their feelings of loneliness."
	„I can say that new technologies have made my job easier."
	„Technology reduces the physical strain of caring for immobile clients, which prevents me from getting overwhelmed and saves my back."
	„The monitoring devices make me feel safer at work because I know that if there is a problem, the technology will alert me in time, I have tested it."
	„We are very modern in our facility, so we use technology on a daily basis. For me personally, the technology that we use gives me more confidence in the quality of care that I'm providing."
	„There's a lot that we have, but thanks to the cognitive training apps, I can offer clients new activities that improve their memory and mental health. It's a great relief for us not to have to prepare memory training materials week after week."
	„I already have a positive perception of technology, but it took me a long time to learn how to work with it and understand its importance. Now I can really appreciate them."

Source: author's own processing, 2024

Tab. II: Carers' fears and insecurities about technological innovations

CATEGORY	ANSWER OF THE RESPONDENT
FEAR AND INSECURITY OF CARERS/OF CARERS (108 R)	„I'll be honest, I'm afraid that technology will one day replace my job. I just know it."
	„I'm afraid robots will take over senior care."
	„The uncertainty of technological advances makes me wonder about my future, what's next for me and where social services are going."
	„I feel that modern technology may threaten my job."
	„I am often worried about being replaced by machines. I am unhappy about this. I don't have anywhere to learn to control it. That's really for the young anymore."
	„Technology is getting more and more sophisticated and I'm afraid of becoming redundant."
	„I'm worried that my empathic skills will no longer be needed in these fast and cold times."
	„Advances in robotics make me fear for my job position."
	„I'm not sure if technology can provide the care that I can, but I guess that won't matter in a layoff."
	„I'm afraid that machines will replace the human touch that is important to seniors."
	„I'm concerned that technology will reduce the need for human staff."
	„Technological innovations in healthcare cause me stress when I see how slowly robotic surgeries are replacing real operators, so I expect this to happen in social services soon."
	„I feel insecure because technology may replace my job."
	„I fear that my professional skills won't have value in the future. Everything will be replaced by machines with artificial intelligence."
	„I have to admit that the fear of humans being replaced by machines is present in me every single day, even in my field of work."
	„I'm not sure if technological advances will be beneficial to our profession, but when the times call for it, then please do. Just when they come up short so that we are still here."
	„I'm worried about robots taking over the day-to-day tasks I perform in my job."
	„I feel pressure to improve my technical skills to stay relevant at all."
	„Unfortunately, I hate to admit it, but the uncertainty of technological developments is prompting me to think about a career change."
	„The fear of being replaced by technology makes me look for ways to stay current and indispensable, which is a good thing in one way, there's nothing else I can do."
	„I worry that machines may replace my personal approach to caring for our elders."
	„I worry that technological innovation will reduce the need for nannies. Caring for the elderly will no longer be taken as routine."
	„I fear that modern technology will change the nature of our work."
	„I think it's only natural to fear that machines will take over our care of seniors. But when that will be, or if ever, I really don't know."
	„I fear that technology in general will reduce the demand for human staff, so we have that to look forward to. Young people can still fit into this time by studying something along those lines, but we're having a very hard time."
	„The fear of being replaced by technology often worries me. I talk about it at home and with my family, and we think about our next existence."
	„Definitely, I am very worried that robotic systems will replace my presence in a senior care facility."
	„I feel insecure because technology may affect my work in the future, but I have to accept it."
	„I worry that technological devices will reduce the need for human contact. After all, even now we often just text and phone our friends instead of meeting for coffee. It will be the same in client care."
	„Technological change makes me fearful of being replaced as a physical person and that what I know will no longer be needed."
	„Of course, I worry that modern technology may threaten my job stability."
	„We have talked with colleagues that the fear of being replaced by technology causes increased stress in us."
	„I think technological innovation will change the way we work and I won't be able to adapt to that, which is what I'm really afraid of."
	„I'm scared that modern technology will change the way we care for seniors and I'm confused about it."
	„I'm scared that technology will reduce the demand for our services in senior care facilities and we won't be needed as caregivers anymore."

Source: author's own processing, 2024

Tab. III: Disinterest in the issue

CATEGORY	ANSWER OF THE RESPONDENT
LACK OF INTEREST IN THE ISSUE (5 R)	„I don't deal with it, we don't have such equipment in our facility and there are no plans to buy such equipment yet."
	„I don't think it's an issue in the near future, so I don't deal with that topic."
	„I can't quite imagine what social services would look like with robots. I don't bother with that."
	„I don't have any reserved opinion on it, when it comes up then I'll address it."
	„I don't know, I'm not addressing it."

Source: author's own processing, 2024

To obtain relevant data, a quantitative method in the form of a self-constructed questionnaire with open-ended questions was used. The respondents were both women and men from the Slovak Republic, namely from the Trenčín Self-Governing Region and the Trnava Self-Governing Region. 146 male and 146 female respondents participated in our survey.

When analysing the information obtained from the male and female respondents, we identified the following 3 categories:
a) Positive perceptions of technological innovations by caregivers – 33 respondents,
b) caregivers' fear and uncertainty about technological innovations – 108 respondents,
c) lack of interest in the issue – 5 respondents.

The most frequent responses from our male/female respondents are by category in the tables below.

Positive perceptions of technological innovations were reported by 33 respondents, indicating that some caregivers perceive technology as a tool to improve the quality of their work and the efficiency of care for social service recipients/clients – seniors. This attitude can be attributed to their openness to change, overall acceptance of technology in their daily lives, but also to their perception of an opportunity to simplify not only physically but also emotionally/mentally demanding work duties.

As many as 108 male/female respondents reported concerns or uncertainty related to the implementation of new technologies in their work environment. This significant proportion of female respondents reflects the need to address issues of resistance to change, lack of skills, abilities and, most importantly, fear of job loss. Negative perceptions may be linked to a lack of information, education or support from the leadership/management of social service facilities.

5 male/female respondents showed a lack of interest in the topic of technological innovations implemented in their work environment in social service settings, which may indicate low engagement or a lack of understanding of the importance of technology in the context of elder care.

Conclusion and Recommendations

The aim of our survey was to determine caregivers' perceptions of technological innovations in social service settings. The results showed a diverse range of opinions, reflecting the complexity of this issue. Although technological innovations represent a significant potential for improving and enhancing the quality of care for social service recipients/clients - the elderly, their implementation is dependent on effective communication, educational programs and also support from the leadership/management of the social service facility. As the implementation of modern technologies in social services is unavoidable, it is therefore necessary to implement training aimed at increasing the digital literacy of care staff, strengthening their confidence in working with technology and eliminating fear through the gradual continuous introduction of innovations into everyday practice. At the same time, open discussion in the workplace should be encouraged so that staff can actively participate in the process of adapting to technological change and thus foster a positive workplace climate.

Based on our findings, we formulate recommendations that could significantly contribute to reducing job insecurity and increasing the satisfaction of care staff, thereby also enhancing the efficiency and quality of social services:

• Involving staff in decision making - carers should be actively involved in the decision making process when implementing technological change. This will give them a sense of control over the changes that affect their daily work and enhance their motivation and positive perception of technological innovations.

• Focus on the complementarity of technologies - technological innovations should be presented as tools that complement the work of carers and caregivers and improve the quality of their work, rather than as a potential substitute for human resources. Working with social service recipients - the elderly - requires an empathetic, human and individual approach, which no technology can fully replace.

- Implementing technological innovation with an emphasis on education - social services facilities should introduce new technologies gradually, and it is crucial to provide continuing education and training for care staff. Thorough training will help them better understand new tools and increase their confidence in technology, thereby reducing their job insecurity. Examples of good practice could also be of significant help, where social service settings where technological innovations are successfully established are shown to staff through presentations, information, photos/images or a tour. Another option is to conduct a workshop on coping with change and job insecurity, which can help to minimise the stress associated with the implementation of new technologies.

Positive perception of technological innovations introduced into routine practice is a key factor in eliminating negative feelings of job insecurity among staff in social service settings.

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