ELDERLY PEOPLE AND DISCRIMINATION: PREVENTION AND REACTION

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Elderly People and Discrimination: Prevention and Reaction

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Elderly People and Discrimination: Prevention and Reaction

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EXPLORING THE POTENTIAL OF ROBOCARE IN ANTI-AGESIM AND PROTECTING HUMAN RIGHTS FOR ELDERLY PEOPLE IN LONG-TERM CARE SETTINGS

The World Health Organization (hereinafter: WHO) estimates that the number and proportion of people aged 60 years and older in the population will increase to 1.4 billion by 2030 and 2.1 billion by 2050. As the number of older people increases, the need for long-term care is also increasing. According to the WHO report (WHO, 2021), half of the world's population is ageist towards elderly people, including stereotypes, prejudice and discrimination.

Article 12 of the Universal Declaration of Human Rights (UN General Assembly, 1948) states that "no one shall be subjected to arbitrary interference with his privacy, family, home or correspondence, nor to attacks upon his honour and reputation." In addition, Article 23 of the revised European Social Charter (ESC, 1996) guarantees elderly persons the right to social protection, enabling them to remain active members of society. Therefore, it is crucial to combat discrimination in long-term care.

The emergence of AI technology in healthcare is revolutionizing long-term care, and this article discusses the potential of robocare in preserving dignity and upholding the human rights of the elderly. Additionally, it examines whether robots can help mitigate discrimination experienced by elderly individuals in long-term care settings.

The aim of this article is to explore the potential of robocare in reducing ageism in long-term care settings. The following research questions will be examined: 1. how elderly people are discriminated against in long-term care settings? 2. What are the pros and cons of robocare in reducing ageism in long-term care settings?

Keywords: *Robocare, Long-term care, Human Rights, Ageism, Anti-discrimination*

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1. Introduction

The World Health Organization (WHO)[1] estimates that the global population aged ≥ 60 years will increase significantly by 2050. This increase is a matter of numbers and population vulnerability (Pirzada, P, et al.2022). Although life expectancy and longevity will increase, ageing can lead to a lack of autonomy, cognitive impairment, isolation due to increased loneliness, and illness of varying severity. Health is an important area in the context of age discrimination, as older people are more likely to suffer from multiple comorbidities and age-related health conditions. (Saif-Ur-Rahman, K M et al.2021). Notably, the population of individuals aged over 80 is on the rise, coinciding with the increasing average life expectancy. Consequently, there is a corresponding growth in the number of elderly individuals requiring assistance and care (Ana Batrićević,2022 according to Rocha, Pacheco, 2013: 51). The Council and the Commission proclaimed the European Pillar of Social Rights, principle 18 states, 'Everyone has the right to affordable long-term care services of good quality, in particular home-care and community-based services.' (European Commission, 2017) The need for long-term care increases with age, especially among the elderly.

AI has shown significant promise in two key areas: remote monitoring to enhance community care and long-term care, as well as drug development related to ageing. However, this narrowed emphasis might inadvertently reinforce age-based stereotypes about older individuals and the specific AI technologies that can be beneficial for them. (Mannheim I, et al. 2019). However, elderly people in long-term care settings perform many of their daily activities in isolation, and the use of assistive or service robots reduces the use of human labour and to some extent the incidence of discrimination.

The aim of this article is to explore the pros and cons of robocare in reducing ageism in long-term care settings. This article has two main questions: 1. how elderly people are discriminated against in long-term care settings? 2. What are the pros and cons of robocare in reducing ageism in long-term care settings?

Following the introduction, the article analyses the concept of ageism in the first part, the second part examines the importance of developing robocare in long-term care settings, the third part examines the pros and cons of robocare in reducing ageism in long-term care settings, as well as the conclusions of the article in the fourth part.

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[1] World Health Organization. Health Topics, Ageing. Available online: https://www.who.int/health-topics/ageing#tab=tab_1 accessed 8 July 2023

2. Ageism in Long-term Care Settings

2.1 The concept of Long-term care

The World Health Organization (WHO) defined LTC as "the activities under-taken by others to ensure that people with significant loss of intrinsic capacity can maintain a level of functional ability consistent with their basic rights, fundamental freedoms and human dignity" (WHO,2015). At the EU level, the following definition was provided by the Social Protection Committee (SPC): "Long-Term Care encompasses a range of services and support for people who are dependent over a long period of time on help with their daily living. This need is usually the result of disability caused by frailty and various health problems and therefore may affect people of all ages. But the great majority of the recipients of long-term care are older people." (SPC/ECS, 2014: 9).

Although there is no standard international definition of long-term care, the definitions above indicate that long-term care is a service and assistance for people who need it to ensure their independence and that anyone can need long-term care, not just older people.

2.2. The Concept of Ageism

Ageism, introduced by Butler in the 1960s, refers to discrimination against people purely because they are "old" (Butler, Robert N.1963:243). Butler's definition and subsequent research and advocacy primarily focused on the challenges faced by older people. Data from the World Values Survey (Inglehart R, et al. 2014), covering 57 countries, show that 60% of respondents say older people do not receive the respect they deserve. Across regions, the increasing proportion of older people significantly predicts negative attitudes towards older people. Current global trends in population ageing, coupled with the lack of targeted policies to effectively address the issue, are likely to drive a general increase in ageism in the coming decades. (Marques, S, et al. 2020). Ageism encompasses a diverse array of societal elements, as the World Health Organization (WHO) describes it as the propagation of stereotypes, prejudiced attitudes, and discriminatory actions targeting individuals or oneself solely due to their age. (Officer A, de la Fuente-Núñez V,2018:295).

However, some have expanded the concept to encompass both older adults and young individuals (Gutterman, Alan,2022). This viewpoint suggests that discrimination based on age can affect younger individuals in the same manner as older individuals, and it encourages collaboration between groups at different ends of the age spectrum to address common concerns. Ageism permeates individuals of all age groups, including chil-

dren. Although no one is inherently ageist, this prejudice emerges early on in life., Research indicates children develop negative stereotypes about old age during early childhood, around the same period when attitudes about race and gender start to form. (Jill Vitale-Aussem, 2019), From these formative years, we begin to categorize and stereotype individuals who are not our peers, encompassing "old people" as well as individuals of our parents' age. Furthermore, people even learn to stereotype younger, often labelling crying or scared children as "babies." These stereotypes are reinforced through various mediums such as television shows, birthday cards, and jokes. Gradually, these everyday stereotypes take hold within society and subtly influence people's unconscious perceptions of individuals from different age groups (Paige Hector, LMSW, 2022). Ageism presents itself in distinct ways within the context of long-term care. A notable contrast arises when comparing the care provided to younger and older individuals with similar types and levels of disabilities. What would be deemed completely unacceptable for younger people is often considered commonplace for older individuals. Younger people would never willingly accept living in nursing homes and often reject homecare due to its perceived confinement, advocating instead for personal attendant services that allow them to maintain their independence. (Kane, Robert L., and Rosalie A. Kane, 2005)

And according to Palmore (1999), ageism can be categorized into two types: negative ageism and positive ageism, which are associated with negative and positive ageist behaviours respectively. Generally, ageism refers to the negative attitudes and behaviours exhibited towards older adults. However, there are instances of "ageism for the aged," such as offering public service and medical care discounts exclusively for older adults, which can also be considered as ageist. Ageism is similar to other forms of prejudice, stemming from both positive and negative stereotypes. The danger of age-related stereotypes, even if they appear to be "positive", is that they can create a false perception of older people and limit people's understanding of them by limiting their true perceptions when interacting with them in everyday life. Positive stereotypes commonly associated with elderly people include attributes such as "smart", "kind", "reliable" and "happy or calm". On the other hand, negative stereotypes often include descriptors such as "sick/disabled", suffering from a neurocognitive disorder such as dementia, living in a long-term care facility, resistant to change or stubborn, perceived as useless, unproductive or a burden. social, experiencing isolation and depression, facing financial difficulties, being sexually indifferent or frigid, being short-tempered or short-tempered, and struggling to use technology or learn new things. (Gutterman, Alan, 2022 according to J. Chonody and B. Teater.). Professionals who are meant to support and assist older individuals, like health professionals, can also hold ageist prejudices (Todd D. Nelson,2005). Chonody and Teater (2016) put forth the argument that one positive stereotype of older individuals is

their tendency to be empathetic, although this stereotype can also be accompanied by paternalistic attitudes. Acknowledging the different dimensions of ageism, the discussion and solutions in this article address "negative, old age-centred ageism", particularly in long-term care settings.

The Global Strategy and Action Plan on Ageing and Health (2016-2030) (WHO, 2017) and the corresponding World Health Assembly resolution WHA69.3 (WHO, 2016) have recognized the significance of addressing ageism as a fundamental requirement for formulating effective public policies on healthy ageing and enhancing the daily experiences of older individuals. Consequently, the WHO was entrusted with the task of collaborating with various partners to develop a global campaign aimed at combating ageism. During the formulation of the vision and principles of the Global campaign to combat ageism, it became apparent that in order to prevent harm, mitigate injustice, and foster intergenerational solidarity, it is essential to combat ageism directed at individuals of all age groups. According to the above analysis of ageism, this article is based on the World Health Organization's definition of ageism and focuses on negative ageism in long-term care settings from the effects of elderly people and caregivers

2.3. Ageism in long-term care: Effects on elderly people

In 1995, the UN Committee on Economic, Social and Cultural Rights emphasized the importance of challenging and overcoming "negative stereotyped images of older persons." They called upon States, non-governmental organizations, media, educational institutions, and older individuals themselves to actively combat perceptions that depict older individuals as solely suffering from physical and psychological disabilities, incapable of functioning independently, and lacking social roles and status. The goal was to promote the complete integration of older persons into society (CESCR,1995).

While the demand for long-term care, is increasing due to population ageing, the existing studies highlight clear instances of ageism in long-term care. For instance, a study conducted in Canada revealed that many older residents in long-term care facilities felt that communication with caregivers was ageist. Caregivers used controlling language and employed patronizing communication patterns, treating them in an infantilizing manner (Lagacé M, et al. 2012). Similarly, in long-term care institutions in Israel, ageism was observed through inaccurate medical diagnoses, objectification of older residents, neglect of their needs, and cost-cutting measures at their expense (Band-Winterstein T, 2015). A comprehensive systematic review conducted in 2020 found that in 85% (127 out of 149) of the studies analyzed, age was a determining factor in the allocation of specific medical procedures or treatments (Chang ES, et al. 2020). Another evident expression of ageism has been the unbalanced and higher number of fatalities occurring in long-term care

homes (LTC), where residents have been left neglected or exposed to COVID-19. This situation can be attributed to various factors, including insufficient staffing levels (Curryer & Cook, 2021).

Healthcare practitioners sometimes engage in ageist practices when it comes to the treatment of older individuals, often intervening quickly to protect them at the expense of their freedom and rights. For example, the common approach of directing older individuals leaving hospitals to nursing homes as a supposed safe haven, while persuading them and their families that it is the only sensible solution, demonstrates ageism unless similar suggestions would be made for a younger person in a similar situation. Moreover, efforts to transition people out of nursing homes tend to focus more on those under the age of 65, neglecting older individuals who acquire disabilities such as blindness, deafness, or spinal cord injuries. Unlike their younger counterparts, these older individuals are less likely to receive targeted rehabilitation, training, and equipment to manage their daily lives. These discriminatory practices highlight the inherent ageism within healthcare systems, emphasizing the need for equal and unbiased care for individuals of all ages, regardless of their disabilities or medical conditions (Kane, Robert L., and Rosalie A. Kane,2005)

Apart from that, sexuality is often disregarded as a suitable topic for discussion with older individuals. Physicians also exhibit age bias in diagnosing and treating sexual performance issues, attributing dysfunction in older adults to physical factors rather than psychological factors. Older individuals are more likely to receive medical interventions such as testosterone replacement therapy and PDE5 inhibitors, while younger adults are referred to sexologists and receive a more comprehensive approach aligned with the biopsychosocial model. These findings highlight the differential treatment and interventions for sexual issues based on age. (Gewirtz-Meydan, Ateret, and Liat Ayalon,2017). Staff attitudes towards sexuality in later life within long-term care facilities significantly influence the level of sexual expression among residents (Gewirtz-Meydan, 2018 according to Elias and Ryan, 2011 and McAuliffe et al., 2007). While most studies indicate positive attitudes among LTC staff (Mahieu et al., 2011), there are still notable shortcomings. Staff knowledge about sexuality in later life is limited (Gewirtz-Meydan, 2018 according to Mahieu et al., 2011, 2016), personal comfort discussing sexual topics is low, and essential conditions for sexual expressions, such as privacy, are often not adequately facilitated (Gilmer et al., 2010).

Ageism has been observed in long-term care facilities, with instances of ageist communication patterns, inaccurate diagnoses, neglect of needs, and allocation of medical procedures based on age. Additionally, sexuality in later life is often disregarded, and

healthcare practitioners exhibit age bias in diagnosing and treating sexual performance issues.

2.4. Ageism in Long-term Care: Effects on Caregivers

Several studies have examined ageism in long-term care, involving healthcare professionals, care workers, and administrators of long-term institutions. For instance, (Band-Winterstein,2015) found neglect as a form of ageism in everyday care routines, including themes of transparency, invisibility, being forgotten, dehumanization, objectification, lack of accurate medical diagnosis, ageist language, and cost-cutting measures. (Billings,2006) reported evidence of ageism in healthcare and social care professionals, such as insensitive treatment, exclusion from conversations, patronizing behaviour, lack of privacy, limited choices, over-medication, and assumptions about older individuals' sexual activity. These studies shed light on the various manifestations of ageism in the attitudes and practices of those involved in long-term care.

Negative stereotypes and ageist behaviours can lead to a reluctance among care workers to work with older adults. (Chi et al., 2016; Liu, C., Liu, F., & Chuang, S.,2020). Ageism prevalent in society can lead to a lack of popularity among healthcare workers when it comes to providing care for older individuals (Ben-Harush et al., 2017). According to (Mejia et al., 2018), ageism and anxiety related to ageing are the primary barriers that impede employment opportunities for older people. The study also found that a decrease in negative ageist behaviours and an increase in positive ageist behaviours towards older individuals were significantly associated with a greater willingness to work with them (Mejia et al., 2018). Additionally, (Shinan-Altman, Soskolne, and Ayalon, 2019) highlighted that ageism and a lack of interest in caring for older people have contributed to a shortage of manpower in the long-term care sector. (Gendron et al., 2016) discovered that workers' attitudes towards ageing and older individuals partially explain the relationship between job satisfaction and career commitment.

Unpaid family members, friends or neighbours who provide assistance to older people form an important part of the long-health care system for older people and help with many of the everyday tasks that are essential to their health. (Condelius and Andersson, 2015) observed ageism among the next of kin, as they tend to view certain conditions and complaints as inevitable aspects of ageing, considering further examinations or treatments as "pointless" or even "wasted". (Sutter et al., 2017) found that people who held negative attitudes towards older adults were less willing to provide emotional, instrumental, or nursing care to a family member with a chronic health condition.

Ageism in long-term care has been extensively studied, revealing neglect, ageist language, and cost-cutting measures. These behaviours contribute to a reluctance among

care workers to work with older adults, leading to a shortage of manpower in the sector. Additionally, ageism among family members is observed, as they often view certain conditions and complaints in older adults as inevitable and may be hesitant to pursue further examinations or treatments.

2.5. Ageism and Anti-Ageism in the International Human Right Law

Irrespective of the particular scientific field or discipline, scientific knowledge has the potential to advance and support the development and implementation of human rights in diverse ways.(Kubiček, Andrej,2022) Within the international human rights system, there is currently no comprehensive legal instrument specifically targeting ageism and prejudices against older people. When considering ageism from a positive standpoint within the framework of international human rights law, an important reference point is the Universal Declaration of Human Rights (UDHR) adopted by the United Nations (UN) General Assembly in 1948, holds significance as it is considered customary international law and serves as the foundation for all currently binding international human rights treaties. Its preamble emphasizes the importance of recognizing the inherent dignity and equal rights of all individuals, stating that such recognition forms the basis for freedom, justice, and global peace. Article 1 of the UDHR further emphasizes the entitlement of every person to enjoy all the rights and freedoms outlined in the Declaration, without any form of discrimination based on factors such as race, colour, sex, language, religion, political or another opinion, national or social origin, property, birth, or any other status. Article 12 states that "no one shall be subjected to arbitrary interference with his privacy, family, home or correspondence, nor to attacks upon his honour and reputation." (UN General Assembly, 1948). However, the term "age" does not explicitly appear in this particular article. Since the 1990s, there has been a growing recognition among human rights law actors of the potential for human rights to combat ageism. In 1996, the Committee overseeing the Covenant on Economic, Social, and Cultural Rights (CESCR) clarified that age should be interpreted as a prohibited ground for discrimination in core human rights treaties (CESCR,1996). In 2009, the same committee acknowledged age as a prohibited ground of discrimination in various contexts, such as employment, access to training, and discriminatory practices related to access to old-age pensions (CESCR, 2009). Further efforts to address ageism were seen in 2011 when the UN highlighted the stigma and discrimination faced by older people in accessing healthcare (UN Human Rights Council, 2011). In 2014, the UN appointed an Independent Expert on the Enjoyment of All Human Rights by Older Persons, who emphasized the persistence of ageist attitudes worldwide, resulting in discriminatory practices and undermining the autonomy and self-esteem of older individuals (Kornfeld-Matte, 2015).

Unfortunately, there is currently no universal, sectoral convention on the protection of the human rights of older persons that would serve to educate the international community and raise awareness among policymakers about the rights of older persons and the harmful effects of age discrimination. To combat ageism globally, it is crucial to incorporate ageism as a keyword in international law and establish a comprehensive treaty on the rights of older people. Additionally, addressing ageism in conjunction with other intersecting inequalities is important. Non-legal initiatives like the UN Decade of Healthy Ageing and the Sustainable Development Goals are valuable in the fight against ageism and in promoting inclusivity for people of all ages.

3. Robocare in anti-Agesim in Long-term care settings

The term "gerontechnology" refers to technological software and devices that cater to the specific needs of older individuals. While numerous digital applications fall under the category of gerontechnology without incorporating AI, AI has shown great potential in remote monitoring to support community care and long-term care (Mannheim I et al., 2019). It is worth noting that this narrow emphasis may unintentionally reinforce age-related stereotypes, influencing the perception of AI technologies that could truly benefit older adults (WHO, 2022 according to Mannheim I et al., 2019).

3.1. The Concept of Robocare in Long-term Care

Artificial intelligence technology has become increasingly prevalent in the daily care of elderly individuals. Robots are now employed to fulfil the needs of older people with disabilities, providing essential items and assisting them with fundamental activities of daily living. These tasks include aiding in eating, facilitating handwashing, helping with dressing, and facilitating bathing, among others (Goher KM, Mansouri N, Fadlallah SO,2017)

(Martinez-Martin, 2018) noted that robotics can serve as a solution for providing healthcare support, aiding in daily tasks, and enhancing autonomy and self-management for the elderly. The demand for effective elderly care solutions, including therapy, rehabilitation, companionship, activity planning, and healthcare robots capable of collaborating or independently assisting with daily tasks, has been steadily increasing. These robots are particularly valuable in offering healthcare support and promoting independent living, especially when age-related challenges arise. According to (Shannon Vallor, 2011), a robot ethicist, caring robots are utilized in homes, hospitals, and various settings to assist, support, or care for vulnerable individuals, such as the sick, disabled, young, old, or others

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in need. Care robots can be classified based on their actual or potential functions, including providing assistance with care tasks, monitoring the health or behaviour of the care recipient or caregiver, and offering companionship to those in need of care.

Considering these descriptions, this article defines Robocare in long-term care settings for elderly people as artificial intelligence technology that can help elderly people to live independently in long-term care settings and provide companionship and monitoring functions.

3.2. Pros and Cons of Anti-Agesim in Robocare.

As mentioned earlier, this article defines robocare as helping elderly people to live independently in long-term care settings and providing companionship and monitoring functions. We can classify robocare as assisted living, monitoring and companionship.

Numerous studies have highlighted the potential benefits of Artificial intelligence for the older population, including improved well-being, enhanced quality of life, support for independent ageing in their preferred environment, and better care and healthcare outcomes (Mannheim et al., 2021). However, it is crucial to acknowledge that these technologies can also contribute to social inequalities and the exclusion of older adults (Neves and Vetere, 2019). This exclusion can arise from sociodemographic disparities, such as lower income, limited education, and residing in rural areas, as well as a lack of social support (Reiners et al., 2019). Moreover, the limited involvement of older people in the development of Artificial intelligence can further exacerbate these inequalities (Mannheim et al., 2019).

3.2.1. Pros of Anti-Agesim in Robocare.

AI technologies in remote monitoring systems mimic and replace human monitoring by collecting data from health monitoring technologies and additional sensors in a person's home. This data is used to monitor and measure various activities, detect unusual movements, and identify potential cognitive or physical decline (WHO, 2022 according to Ho, A.,2020). Continuous data collection enables predictive analysis of disease progression, personalized care management, and prevention of health risks through behavioural analysis (WHO, 2022 according to Rubeis G.,2020). By continuously collecting data on individuals at risk, algorithms based on AI can predict and prevent common challenges faced by older people, such as falls or sudden emergencies (Rubeis G.,2020).

Moreover, Automation and digitalization have the potential to enhance labour productivity in the sector, therefore requiring support for training in digital skills. Technology can take over certain tasks of long-term care workers and thus relieve them in their daily work, including helping with case management, lifting patients, managing

electronic documentation, and remote monitoring of people receiving care at home (Zigante, V., 2021)

Assistive robots have the potential to tackle the increasing shortage of healthcare and social care workers. By being appropriately programmed, these robots can support professional caregivers, increasing their efficiency and enabling them to dedicate more attention to the interpersonal aspects of their work (Hajdú, 2020: 582). Additionally, they can alleviate the physical demands of caregiving, such as lifting and carrying, thereby reducing the risk of injuries (Prescott T J, Caleb-Solly P.,2017). Robotic technologies have been employed to aid in clinical procedures and maintain residents' hygiene within care settings. Additionally, smart voice assistants have been implemented to enhance residents' interactions with various services such as accessing weather updates, and news, and connecting with their families (Hsu, 2021).

Companion robots have been designed to address the psychological well-being of elderly individuals living alone. They come in various forms, such as animal companion robots (e.g., Paro, AIBO) and humanoid social robots (e.g., Kabochan) (Abbott, Rebecca, et al., 2019). These robots are primarily used in nursing homes and households with cognitively impaired seniors, providing entertainment and companionship. Studies have shown that developed countries have been utilizing Paro robots in hospitals and care facilities, confirming their ability to improve the quality of life, enhance social interaction, facilitate emotional expression, and reduce the use of psychotropic medications among the elderly. Kabochan, a humanoid robot capable of mimicking human interaction, effectively improves cognitive functions in elderly women living alone and alleviates anxiety in Alzheimer's disease patients. The application of companion robots has expanded beyond Alzheimer's patients to include elderly individuals affected by strokes, and depression, and those in good health, effectively reducing anxiety, and loneliness, and enhancing social engagement (Kang, Hee Sun, et al.,2020; Tanaka, Masaaki, et al.,2012).

Based on the above analysis, we can see that robocare in long-term care settings can improve the quality of life of older people to some extent, reduce social isolation and their sense of loneliness, and accurately detect their physical condition, but in terms of ageism, robocare can eliminate some ageism because the development of AI technology can reduce the workload of caregivers or directly replace them, allowing older people to avoid ageism from caregivers.

3.2.2. Cons of Anti-Agesim in Robocare.

Although there is limited research on the intersection of ageism and AI in the context of long-term care (LTC), studies exploring innovative technologies designed for LTC settings demonstrate a prevalent portrayal of older individuals as passive or lacking digital skills. This depiction reinforces age-based stereotypes, prejudices, and discriminatory attitudes, perpetuating negative perceptions of older adults (Mannheim et al., 2021).

Non-users of technology are often perceived by technologists and society as uninterested or incompetent, disregarding the complex practices and meanings associated with technology use and non-use (Neves et al., 2018). For instance, many older users consider themselves non-users because they feel they cannot fully utilize a device independently (Neves et al., 2012). It appears that the elderly themselves also have a lack of self-confidence or ageism caused by the influence of their surroundings.

On the other hand, stereotypes about older users also prevail, leading to their exclusion or lower priority on digital platforms (Rosales & Fernandez-Ardèvol, 2020). The research of (Neves, B et al., 2023) findings reveals that perceptions of AI and later life are deeply ingrained in promissory discourses, which involve expectations and envisioned roles of technology, as well as in ageing anxieties, encompassing concerns and uncertainties. These discourses and anxieties primarily stem from ageist stereotypes that generalize the ageing process and portray older individuals receiving care as passive, dependent, and lacking competence. Importantly, these biased views are not only held by technology developers but can also be present among gerontology professionals who may harbour pre-existing assumptions, particularly regarding older people's technological capabilities (Mannheim et al., 2021). The design of AI technologies plays a crucial role in determining whether ageism is encoded within them. Design teams often lack representation from older people, which can result in the oversight of ageist practices and biases present in AI technology. Biases can stem from the funding and design processes, where older individuals are excluded from market research, design, and user testing due to ageist stereotypes (Anne-Britt Gran, Peter Booth & Taina Bucher,2021). Even with the intention to cater to older people, designers may still rely on misconceptions about their lifestyles, engagement with technology, and preferences for AI technologies in healthcare. Rather than designing with older people, the tendency is often to design on their behalf, leading to inflexible use of AI technology and potentially requiring older individuals to adapt to predetermined approaches and philosophies. Overall, involving older individuals in the design process and addressing misconceptions is vital to ensure that AI technologies are inclusive, adaptable, and respectful of their needs and preferences (WHO, 2022).

Additionally, machine learning in healthcare relies on "big data," including biomedical information, to improve diagnosis and decision-making through AI technologies. However, older people are often excluded from the data sets used to train these models, despite their significant utilization of healthcare services in many countries (WHO, 2021). This exclusion can introduce biases, particularly in AI technologies designed for multiple age groups but not explicitly classified as gerontechnology. And even when sufficient data on older people exist, they may not be appropriately disaggregated for use, partly due to the perception of later life as a homogeneous life stage, disregarding the diverse skills and interests of older individuals (WHO, 2021).

Studies on innovative technologies in long-term care reveal a prevalent portrayal of older individuals as passive or lacking digital skills, reinforcing age-based stereotypes. This bias is perpetuated by the exclusion of older people in the design and testing processes of AI technologies, leading to inflexible designs and predetermined approaches that may not meet their needs. And not only is there a general bias against elderly people's ability to operate robots or use digital technology for developers and gerontology professionals, but even elderly people themselves are not confident in their ability to use them.

4. Conclusion

Ageism in long-term care settings is a multifaceted issue that affects both older people and caregivers. Research has highlighted ageist patterns of communication, neglect of needs, inaccurate diagnoses, and discriminatory allocation of medical procedures as indicative of ageism in the care provided to older people. Age discrimination is not limited to caregivers, as family members and society at large may also hold ageist attitudes and engage in discriminatory practices.

The introduction of artificial intelligence (AI) and robocare in long-term care settings presents both opportunities and challenges for addressing age discrimination. This article was initially intended to explore the possibility of addressing ageism in relation to the development of AI, but after research, it was found that the development of AI and the application of robocare could lead to new forms of ageism. On the one hand, through the design and implementation of AI technology, robocare could reduce ageism due to caregiver bias, inherent impressions, and so on, by reducing caregiver work hours and replacing the caregiver. On the other hand, it may also create new forms of ageism, as many innovations designed for long-term care settings portray older people as passive or lacking digital skills, reinforcing negative perceptions of ageing and contributing to ageism. The exclusion of older persons from the development and testing process of AI technologies further exacerbates these prejudices.

Furthermore, addressing age discrimination in the long-term care sector requires a comprehensive approach within the framework of international human rights law. While there is currently no universal convention specifically addressing age discrimination, efforts have been made to recognize age as a prohibited ground for discrimination and to promote the rights of older persons. Including age discrimination as a keyword in international law and creating a comprehensive treaty on the rights of older persons would help combat age discrimination globally.

In summary, ageism in long-term care settings is a complex issue that requires attention and action. There are challenges and risks associated with the integration of AI and robocare, and even though the development of AI and robocare can mitigate ageism to some extent by reducing the involvement of caregivers, AI and robocare are accompanied by new, digitally dependent ageism, while the lack of international human rights laws that resist ageism reinforces the age discrimination suffered by older people who are receiving robocare in long-term care settings.

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