

# Chapter 1

## TOWARDS A NEW SOCIAL ORDER IN ELDERLY CARE: SOCIETY 5.0 AND ELDERLY CARE TECHNOLOGIES FROM A SOCIOLOGICAL PERSPECTIVE

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### INTRODUCTION

In the 18th and 19th centuries, the processes of paradigmatic change in the political, social and economic spheres of the world are referred to as the Industrial Revolution. This process, which started with the Renaissance and Reform movements, reached its highest level in the 18th century with the intensive use of steam engines and steel in industry. This revolution first started in Europe and then rapidly spread across the world (Hobsbawm, 2008, p. 11). It is a matter of debate in the social sciences that this process still continues at different stages in different countries of the world (Febvre, 1973, p. 32). The general acceptance in social sciences is that human beings first came from a hunter-gatherer society (Society 1.0). Later, the agricultural society (Society 2.0), in which agriculture was considered a vital source of livelihood, was followed by the industrial society (Society 3.0). In the last quarter of the 20th century, the industrial society was replaced by the information society (Society 4.0). The definition of information society has started to be made as a result of the effectiveness of information technologies in daily life. With the widespread use of mass communication devices in the world, the increasing value given to information in social life has created important variables of the transition to Society 4.0. In defining these variables, social scientists have defined the process called Society 4.0 with different concepts such as “post-bourgeois society”, “post-industrial society”, “post-industrial socialist society”, “super-industrial society”, “third wave”, “post-capitalist society” and “information society”. Although the assumptions put forward by social scientists in this regard are quite different, their basic arguments about the basic dynamics and direction of social transformation are similar (Aron, 1967, p. 117).

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The concept of Society 5.0 or Super Smart/Creative/Digital Society was first officially announced in the 5th Science and Technology Basic Plan approved by the Cabinet of Ministers in Japan on January 22, 2016 (Fukuda, 2019). Prime Minister Shinzo Abe, a member of the Liberal Democratic Party of Japan, announced this concept to the whole world at the CeBIT Fair held in Hannover, Germany (CeBIT Welcome Night, 2017). Founded on August 16, 1946, the Japan Business Federation (Keidanren), one of the most important NGOs in Japan with 1682 members, prepared a brochure in 2018 that defines the comprehensive evaluation and conceptual content of Society 5.0. According to this brochure, it is assumed that digital transformation, big data, artificial intelligence, the Internet of Things and 3D technology will significantly change and transform human life, and as a result of these changes, new social processes will emerge. At the same time, while societies' lives are made easier with big data and artificial intelligence, it is also discussed sociologically what kind of threats and risks artificial intelligence will pose for societies (Nakanishi and Kitano, 2018, pp. 5-6).

The concept and philosophy of Society 5.0, developed by the Japanese, suggests that technology aims not only to transform the economy, but also to deliver health, education, employment and social services in the social sector from a new and different perspective. In Society 5.0, the Internet of Things, big data, artificial intelligence and human services are fully integrated and various aspects are combined to build a social infrastructure that allows every individual to develop value in a trusted environment that is environmentally compatible, anywhere and anytime. The ultimate way to achieve this is through digitalization (Japan Cabinet Office, 2015).

The issue of old age, which until recently concerned only developed countries, has now managed to attract our attention as a country. Although most of the elderly population still lives in developed countries, the rate of increase in the elderly population in developing countries is also considerable. In Türkiye, the phenomenon of elderly population, which has been neglected for years, has started to attract a lot of attention in the last decade and is expected to become even more important in the future. Today, there are not as many elderly people in Türkiye as in developed countries, but considering the fact that the rate of elderly population is increasing rapidly, it is a sociological reality that there is an urgent need to establish a national social policy based on universal principles that will affect the coming decades. Experts argue that the ultimate goal of this old age policy is to ensure that the elderly population in Türkiye live a quality life within

a human-oriented social service system that is compatible with technological innovations based on social inclusion.

## **THE PHENOMENON OF AGING IN THE WORLD AND TÜRKIYE**

Aging is an irresistible process that begins in the womb and continues until death, affecting the life of the individual through physiological, biological, psychological and sociological changes (Tomanbay, 2002, p. 250). When the phenomenon of aging is analyzed from a theoretical framework, four aspects come to the fore: sociological, biological, temporal and psychological. The sociological dimension of aging defines the changes in the individual's habitus, social status and roles acquired during his/her lifetime (Durgun and Tümerdem, p. 1997). The biological dimension is the functional and structural change of the human body (Kalkan, 2008, p. 4). Temporal aging is the definition made on the sum of one-year time periods that can only be explained by the birth date of the individual. Finally, when we look at the psychological dimension of aging, aging is the changes and transformations that occur in the individual's memory, learning status and mental state (Dölek, 2011, p.17).

Significant advances in science and technology in the 20th century brought about changes in the demographic field. These developments can be listed as early diagnosis, development of preventive health services, reduction of infant mortality and diversification of birth control tools. All these developments contribute to the increase in the aging rates of societies (Öz, 1999, p. 20-25). Thanks to public health, medical advances and socioeconomic developments, it can be said that humanity has won a victory over diseases, injuries and premature deaths that have limited human life span throughout history. People around the world are living longer than in the last century. According to the United Nations, by 2030, 1 in 6 people in the world will be 60 years of age or older. By 2050, the world's population of people aged 60 and over will double to 2.1 billion. Between 2020 and 2050, the number of people aged 80 and over is expected to triple to 426 million. Looking at the ranking of the elderly population, there is a parallelism between the proportion of the elderly population in the world and the level of development of countries. According to the United Nations, the proportion of the elderly population in the world's total population in 2022 is 9.8%. The countries with the highest proportion of elderly people are Japan, Italy, Finland, Portugal and Greece. Türkiye ranks 66th among 184 countries (Table 1).

<b>Table 1. Elderly Population Ranking of Countries</b>		
<b>Country Ranking</b>	<b>Country</b>	<b>Elderly Population Ratio</b>
1	Japan	29,9
2	Italy	24,1
3	Finland	23,3
4	Portugal	22,9
5	Greece	22,8
6	Germany	22,4
7	Bulgaria	22,4
8	Croatia	22,4
9	Latvia	21,9
10	France	21,7
	...	
66	<b>Türkiye</b>	9,9
67	Lebenon	9,9
68	Brazil	9,9
	<b>World Average</b>	<b>9,8</b>
	...	
180	Chad	2,0
181	United Arab Emirates	1,8
182	Zambia	1,7
183	Uganda	1,7
184	Qatar	1,5

**Source:** TÜİK, İstatistiklerle Yaşlılar, 2022

According to the literature, societies are classified in four groups in terms of elderly population (Güleç, 1997):

- a. Young Societies with less than 4% elderly population
- b. Adult: Societies with an elderly population rate between 4% and 7%
- c. Elderly: Societies with an elderly population rate between 7% and 10%
- d. Very old: Societies with a proportion of elderly population above 10

According to this classification, according to 2022 data, 73 of the 184 countries in the world are in the category of young, 22 in the category of adult, 24 in the category of old and 65 in the category of very old society. Türkiye, with a rate of 9.9%, is in the category of elderly society above the world average (9.8%). Within Türkiye, 52 out of 81 provinces are very old, 17 are elderly, 11 are adults, and 1

province (Şırnak) is in the category of young society with an elderly population rate of 3.5% (TÜİK, 2022). While the elderly population in Türkiye was 1,565,696 people in 1970, it has increased approximately 5.5 times in the last fifty years and reached 8,451,669 people in 2022. The proportion of the elderly population in the total population increased from 4.4% in 1970 to 9.9% in 2022. According to TurkStat's elderly population projections, Türkiye is expected to age more and more, with the proportion of elderly population reaching 25.6% in 2080. The rapid aging of Türkiye's population can be better understood by looking at the population pyramids below (Figure 1).

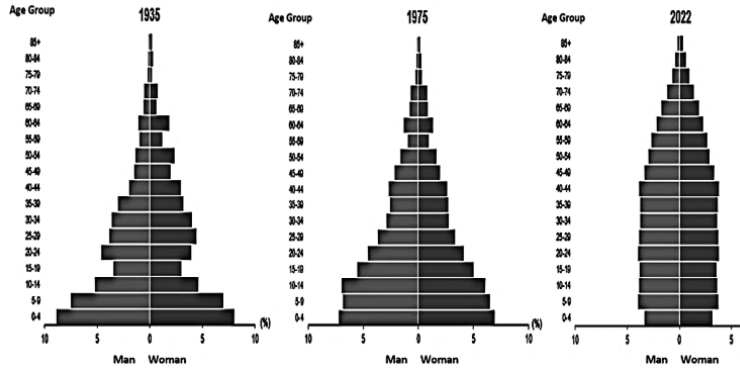


Figure 1. Türkiye Population Pyramid 1935, 1975, 2022

Source: TÜİK, İstatistiklerle Yaşlılar, 2022

Türkiye's demographic structure is changing rapidly due to declining fertility and mortality rates, improved medical care, improved living standards and increasing levels of social assistance. While the proportion of children and young people in the total population is decreasing, the proportion of the elderly in the total population is increasing. Between 1935 and 1985, the proportion of the 0-14 age group in the total population decreased from 40% to 20% in 2022. Türkiye's population is still demographically young compared to relatively older countries, but numerically, it has a sizable elderly population, equivalent to the population of 23 countries.

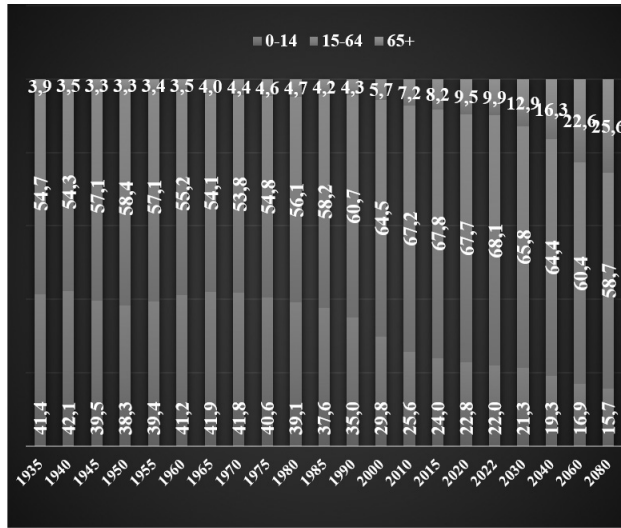


Figure 2. Elderly Population Statistics and Projections by Years in Türkiye  
Source: TÜİK, İstatistiklerle Yaşlılar, 2022

Looking at the data above, 1 in 10 people will be elderly in 2022. This rate is expected to double in the next 40 years (Figure 2).

Table 2. Elderly Population Ranking of Provinces in Türkiye

Provincial Ranking	Province Name	Elderly Population Ratio (%)
1	Sinop	20,2
2	Kastamonu	19,3
3	Giresun	18,0
4	Artvin	17,9
5	Çankırı	17,0
6	Balıkesir	16,5
7	Çorum	16,3
8	Edirne	16,2
9	Çanakkale	16,1
10	Burdur	16,0
	....	
52	Bursa	10,1
	<b>World Average</b>	<b>9,9</b>
	...	
72	Muş	5,8

**Table 2. Elderly Population Ranking of Provinces in Türkiye**

Provincial Ranking	Province Name	Elderly Population Ratio (%)
73	Mardin	5,7
74	Ağrı	5,4
75	Siirt	5,4
76	Diyarbakır	5,2
77	Batman	4,8
78	Van	4,6
79	Şanlıurfa	4,1
80	Hakkari	4,0
81	Şırnak	3,5

**Source:** TÜİK, İstatistiklerle Yaşlılar, 2022

The provinces with the highest proportion of elderly population in Türkiye are Sinop, Kastamonu, Giresun, Artvin and Çankırı. The provinces with the lowest proportion of elderly population are Batman, Van, Şanlıurfa, Hakkari and Şırnak. In Türkiye, there are 52 provinces with an elderly population size above the world average (9.8%) (Table 2). As the number of elderly in the country increases, it becomes more important to implement various social policies and practices to address the problems that may arise in the social lives of the elderly (Kurt et al., 2010, p. 38). Although the proportion of the elderly in the country's population increases linearly, it is seen that academic studies on the problems of people in this age group are insufficient. Compared to the past, it is essential to take a multidisciplinary approach to the problems that will arise in the lives of the elderly, who will have an insignificant population in society (Altan and Şişman, 2003, p. 4).

In Türkiye, according to data for 2022, 164 nursing homes with a capacity of 17,064 under the Ministry of Family and Social Services provide services to approximately 12,800 people. In addition, 11,467 elderly people are cared for in 268 private nursing homes with a capacity of 17,606 and 1735 elderly people are cared for in 20 nursing homes belonging to other public institutions with a capacity of 2,889. A total of 452 nursing homes affiliated to the Ministry and belonging to private and other public institutions provide active services, housing 26,002 people. According to the investment plan of the Ministry of Family and Social Services for 2023, 23 more nursing homes with a total capacity of 2,320 people are planned to be put into service. In addition, home care support is provided to

127,000 fully dependent elderly people so that they can live with their families and social environment (Ministry of Family and Social Services, 2023). Considering the numbers mentioned above, it is seen that the existing elderly care capacity (3 per thousand) is not sufficient in Türkiye, which has a total elderly population of 8,451,669 as of 2022. Considering that this number will increase even more under the current conditions, it is important to accelerate the necessary R&D studies to produce smart tele-health, tele-care and tele-medicine applications in a mass and low-cost manner in order to provide services to the increasing elderly population.

## **CONCEPTUAL AND THEORETICAL FRAMEWORK**

### **Towards Society 5.0**

In order to identify the stages through which humanity has reached Society 5.0, it is useful to briefly discuss the defined models and historical characteristics of these societies. Keidanren defines this classification as versions ranging from Society 1.0 to Society 5.0 (Figure 2) (Nakanishi and Kitano, 2018, pp. 5-6).

After the 1970s, due to the rapid spread of information technologies, the use of information at the global level has become widespread. In Society 4.0, where information has become an important commodity, concepts such as differentiation, individualization and localization have gained importance thanks to the development of information communication technologies (Vlev et al., 2016, p. 91). The development of computer and web technologies day by day has led to the emergence of Society 4.0 (Lyon, 2006, p. 62). Unlike Society 3.0, the rapid integration of information technologies into all areas of life has led to the inability of social structures to adapt to this pace of change, resulting in anomic (Durkheim) situations in social value systems. In this period, as a result of the integration of information and network technologies, an information network that is open to change and transformation has emerged in the world (Castells, 2004, pp. 141-142). The developments in Society 4.0 have led to a major transformation that the whole world is struggling to keep up with (Kongar, 1985, pp. 228-35). This transformation enables the formation of a cultural superstructure, especially in Western developed societies, and enables societies to evolve in the direction indicated by technology (Zijderveld, 1985, pp. 131-32).

The concept of Society 5.0 was first officially announced in the 5th Science and Technology Basic Plan approved by the Cabinet of Ministers in Japan on January 22, 2016 (Fukuda, 2019). Prime Minister Shinzo Abe, a member of the Liberal Democratic Party of Japan, announced this concept to the whole world



at the CeBIT Fair in Hannover, Germany (CeBIT Welcome Night, 2017). This new model of society focuses on the liaison between the real world and the cyber world, as defined in Society 4.0, to solve existing social problems more effectively and efficiently. The creators of the concept of Society 5.0 argue that the goals of Society 5.0 are similar to the Sustainable Development Goals of the United Nations Development Program. This similarity causes countries and regions to include the concept of Society 5.0 in the development and urban plans they are preparing in the new period (Nakanishi and Kitano, 2018, pp. 16-17). The best example of this situation is the 2024- 2028 Regional Plan prepared by the South Aegean Development Agency (GEKA, 2023), which provides services in the TR32 Region in Türkiye, and establishes goals and measures related to what needs to be done in the context of being ready for Society 5.0.

Society 5.0 envisions a new societal model by enhancing the interaction and use of cyber technology, digital technology, physical technology and social concepts to improve people's quality of life (Serpa et al., 2020). Society 5.0 is a concept of society based on the previous information network society. According to Castells (2003, pp. 1-4), dominant functions and processes in the information age are increasingly organized around networks, defined as a series of interconnected nodes. Castells' view of the network society, especially information and data flows, has led to the idea of Society 5.0 based on the information society 4.0 (Castells, 2003, p. 58). According to Keidranren, this model of society focuses on the connection between the real world and the cyber world as defined and developed in Society 4.0 to solve existing societal problems more effectively and efficiently. The concept of Society 5.0, developed mainly in Japan, defines an ideal state in which every country should evolve to take full advantage of the continuous technological transformations and thus commit to benefit all its citizens (Serpa, 2018).

The main promise of the Society 5.0 philosophy is to transform people's lives and industries. The initiative, which aims to realize such a transformation ecologically, focuses on the United Nations' Sustainable Development Goals and addresses this transformation by matching it with 17 sustainable development goals under 9 main headings (Nakanishi and Kitano, 2018): 1. Cities and Regions, 2. Energy, 3. Disaster Prevention and Mitigation, 4. Health, 5. Agriculture and Food, 6. Logistics, 7. Manufacturing and Services, 8. Finance, 9. Public Services.



Figure 3. Sustainable Development Goals  
Source: United Nations, 2023

Society 5.0 aims to create different concepts of urban and rural living to facilitate diverse lifestyles and business success. Access to high standards of education, health and social services will be guaranteed in every region of urban and rural settlements, and cities dominated by decentralized management systems that are self-sufficient in energy are planned to be established. In Society 5.0, it is envisioned to guarantee access to high-quality healthcare services from anywhere by promoting next-generation high-speed communication networks, AI-based medical and health support services, as well as systems for individuals to actively use and manage their own life-stage data. This will ensure a healthy life for all (Figure 3).

### Tele-Medicine

Tele-medicine aims to contribute to or enable the diagnosis and treatment process from long distances by connecting patients, physicians and healthcare organizations using information and communication infrastructure. Tele-medicine applications collect information obtained with various devices and report it to the healthcare organization and physician, and in this way, it is the first application that acts as a decision support system. Tele-health, telecare, mobile health and e-health applications are built on the developments in telemedicine technology.

Today, many elderly patients prefer to continue their treatment at home. Long hospitalizations negatively affect the mental health of patients. For this purpose, many studies are carried out in our country and in the world. In this regard, for

example, Germany predicts that if the aging population is cared for in hospitals, it will face capacity shortages and high costs and encourages the development of remote treatment methods. The devices used in telemedicine are similar or identical to those used in the hospital environment. In a study conducted in Australia, it was concluded that tele-medicine applications in the field of geriatrics positively affected patients' quality of healthy life and overall patient care satisfaction (Host et al., 2018, pp. 129-134).

It is also reported that the use of the telemedicine system is increasing during the pandemic period due to the benefits and conveniences it provides, especially in patients with high risk of transmission. Since these systems also provide institutions with the opportunity to provide cost-effective service delivery, it is recommended that they should be considered and expanded as methods that can be preferred primarily outside the pandemic period (Sonagli, 2021, pp. 371-374). While telemedicine technologies have the possibility of enabling easier and democratic access to healthcare services, it should also be kept in mind that problems such as lack of infrastructure, uneven distribution of technology-health literacy in different segments of society, and incomplete and unqualified political intervention may deepen inequalities from a different angle.

### **Tele-Health**

Tele-health is a network of health care services where distance is a critical factor, by all health care professionals using information and communication technologies, the exchange of valid information for diagnosis, treatment and prevention of diseases and injuries, research and evaluation, and education of health care providers to improve the health of individuals (World Health Organization, 2010, p. 93). All remote access applications include online conferencing, messaging, internet-based computer, tablet and phone applications. The critical point in all these services is patient satisfaction and the effectiveness of the service provided. Tele-health is a type of service that aims to help the patient by intervening on a daily basis. This system includes patient interfaces (mobile and web), physician interfaces and peripheral devices (Alam et al., 2020).

In the next five years, it is predicted that telehealth applications will become more widespread and will be an integral part of service processes in the face of increasing demand in order to utilize manpower correctly (Topol, 2015, pp. 921-924). In the literature, it is frequently emphasized that the simultaneous implementation of telehealth in online environments provides more positive results than physical applications (Reay et al., 2020). Today, it is stated in

many studies that the main benefits of telehealth applications are eliminating transportation difficulties, reducing costs and providing flexible time (Solomon and Soares, 2020).

Tele-health can solve some of the health-related problems caused by physical disabilities, especially for the elderly living in rural areas. It is an efficient system for coordinating care services (Ertem, 2013, pp. 383-87). Health inequalities can be reduced by providing access to health information in rural areas (Schulz, 2014, pp. 123-144). Internet-based video conferencing systems can be used to reduce loneliness and social isolation of disadvantaged groups and elderly individuals (Savolainen et al., 2008, pp. 79-82). Even if elderly and rural caregivers are not familiar with information and communication technologies, new technologies can be taught with the support of health professionals. It can make a significant contribution to supporting daily and instrumental life activities of elderly individuals (Blusi et al., 2013, pp. 191-199). Despite the advantages of telehealth, older individuals have difficulties in adopting and using telehealth technology widely (Foster et al., 2014, pp. 523-533). It has been reported that older adults are 2.4 times less likely to prefer telehealth to face-to-face services compared to younger adults. One of the biggest challenges of not using telehealth tools for the elderly is limited digital literacy (Reed et al., 2020, p. 3).

The technical problems experienced in telehealth applications are low internet speed, hardware deficiencies, lack of experience in using software and support for technology training, difficulty in sharing large files, internet connection problems, freezing and blurred images in training videos, low sound quality and inability to synchronize the sound, and lack of internet ports in the region (Lerman et al., 2020).

### **Tele- Care**

Tele-care is a risk-reducing service that aims to help patients live independently through remote monitoring. Tele-care procedures include calls for help, medication and exercise reminders, and emergency calls. In addition, stoves, fuses, boilers, air conditioners and water valves can be monitored through sensors to prevent accidents. Tele-care is seen as a way to meet the future care needs of the elderly in developed and developing societies. The development of these care systems goes hand in hand with policies aimed at 'ageing in place' and aims to support the perceived care needs of older people who need care at home. According to the British Society of Gerontology, the expansion of telecare services will lead to better and less costly solutions in health care. However, infrastructure requirements are

still the most important barrier (Brownsell and Bradley, 2003, p. 8).

## **THE IMPORTANCE OF TECHNOLOGICAL APPLICATIONS FOR SOCIAL INCLUSION IN ELDERLY CARE**

In developed western countries, the concept of smart health has become more and more widely used in social services in the last decade. With these applications, individuals and organizations aim to manage their own health or the health of the elderly they serve by using wearable devices or mobile applications. Private health insurance, which is compulsory in Western countries, also plays a major role in this. When we look at the scope of health insurances, it is known that in the base model, payments are made only in emergencies, and in other cases, all health expenditures are paid by individuals. In this case, the fewer visits to health institutions, the more financial profit will be made. Thanks to these smart technologies, people can receive some health data at home without going to the hospital, send it to their doctor when necessary, or get an idea about their disease/condition with artificial intelligence applications or create an appointment from the hospital/doctor. These smart technologies are used under the headings of smart elderly home systems, socially interactive robots, mobile health and wearable applications.

The smart elderly home monitoring system consists of three modules: tele-health system, telecare system and monitoring system. The tele-care system consists of presence detectors and panic buttons, and panic buttons are mounted in areas where the elderly person can easily reach in case of emergency. Presence detectors are positioned under or around the bed to determine the presence of the elderly person. The monitoring system is seen as the heart of the overall system. When telecare devices alert, a warning can be sent via phone, e-mail or SMS to previously notified close friends or emergency care team (Lee et al., 2013)

Socially interactive robots, which are developing day by day, are divided into two as service-type robots and friend-type robots. Service-type robots are robots that are used to support the daily activities of the elderly such as eating and bathing. They are also used in areas such as security and mobility. Friend-type robots have been developed to ensure the psychological well-being of the elderly. Such robots are designed in the form of pets to relieve the loneliness of the elderly and are designed to protect and improve psychosocial health (Broekens et al., 2009).

However, despite all these developments, artificial intelligence robots, which are considered to be operated independently in the field of health and care, are

automated devices that have been produced in many models within the scope of research and development projects, but are still prototypes and are still in the trial phase in many countries due to the high standards of patient health and safety in health/care services (Klein, 2011, p. 87). Research conducted by the Japan Medical Research and Development Agency has shown that robot care improves elderly autonomy, social skills, mood and communication, along with a better quality of life. Despite the high costs of production and maintenance, Japan continues to develop various robots to assist in elderly care. Robots that help with the physical care of the elderly are created to help the elderly maintain their physical abilities, while robots that help with psychological problems try to maintain the psychological stability of the elderly. At the same time, thanks to the developing fast communication technology, doctors perform long-distance medical services. In elderly care facilities such as nursing homes, robots have begun to assist physically and psychologically working care workers (Fukuyama, 2018). Most of the social robots that can communicate with the elderly and patients in need of care are still under development. A significant number of them can respond with the same sensitivity to the facial expressions, gestures and tones of their interlocutors. “Social” robots can act as companions for both guests and patients, taking them wherever they want in a hospital environment and providing them with the necessary information. “Social” robots, which can also be used for therapeutic purposes, can provide calming verbal approaches, especially to dementia patients (Daum, 2017, pp.25-26).

Today, not everyone has the same access to and benefits from the health system. The nature of illness and mortality in contemporary societies is explained by Turner (1995, p. 167) in terms of the nature of capitalist production and Cockhergam (2007, p. 75) in terms of social class or socioeconomic status. As the social classes of individuals diverge, the rates of mortality and exposure to changing risk factors also diverge (Calnan and Johnson, 1985, p. 55), and therefore, where inequalities are widespread, diseases are observed to increase in parallel. Inequality caused by unequal access to health and social services has become more evident in extraordinary situations such as pandemics.

Smart health and care applications are emerging as a technology that eliminates these inequalities in the social sphere and at the same time deepens them through different aspects, and whose contradiction is inherent in its nature. Factors such as residing in geographically inconvenient places, not having sufficient socioeconomic opportunities, being old, and the psychological burden of going to the hospital, combined with the psychological burden of going to the

hospital, cause various inequalities in access to health care. It can be argued that such situations will affect individuals who want to receive healthcare services to turn to smart health and care applications. These applications can not only enable patients and health care providers to overcome the distance and time barriers that separate them (Bashshur, 1995, p. 87), but also to eliminate various social inequalities that make access difficult. These systems can significantly improve the assessment, treatment and coordination of urgency in health care, while providing specialized care for patients, especially in resource-poor and hard-to-reach areas, thus contributing to the transfer of resources to patients who really need them (Rockwell & Gilroy, 2020). Therefore, various inequalities caused by physical distance can be partially eliminated through a virtual interface. In addition, smart health and care applications are seen as one of the most important ways to prevent inequalities between rural and urban areas caused by differences in resource availability (Ricketts, 2000, p.647).

Lack of internet access and infrastructure in rural areas (Mossberger, 2009, p. 149) and limited access to medical care for patients, as well as physicians who are unable to use technology competently, are other factors that may increase inequality (Zhai, 2020, p.65). As tele-medicine, which started as a telecommunication augmentation for medical care and turned into an integrative process of information technology and health services (Bashshur et al., 2000, p. 635), becomes more widely used by individuals who avoid going to hospitals at risk during the pandemic and especially by individuals who have limited access to a physician, it can be argued that inequalities in the utilization of health services will be greatly reduced. On the other hand, it should be kept in mind that remote patient assessment may not be a service that will provide adequate and best treatment under all circumstances. These inadequacies and barriers include factors such as patient resistance to change in the face of a new practice, patient age, educational status, limited knowledge of technology and computer literacy, and lack of awareness of various telemedicine services (Kruse et al., 2018). When such factors are considered together with deficient governance practices and policies, there is a risk of deepening social inequalities through a different facet. Not only the infrastructural problems caused by the unbalanced and inadequate distribution of resources, but also the unbalanced distribution of patients' technological literacy, i.e. the disposition required by this new reality, perpetuates inequality in different ways. These inequalities encompass all three types of capital (economic, cultural and social) mentioned by Bourdieu (1979).

The gradual infiltration of technology into more and more social life and

its transformation into a matrix of determining units of action transforms the structure-agent tension in sociological theory from opposition to integration, shaping a pluralist logic of action organized on the basis of relationality or a space of positioning within a universe of possibilities (Bourdieu, 1998, p. 379). Moreover, this relationality ceases to be anthropocentric due to the increasing tendency of autonomization of technical objects and uses, transforming individuals into multi-conductors (Latour, 2005, p. 250). Thus, the ability to mobilize capital that guides agency crystallizes in symbolic capital (Bourdieu, 2003, p. 347) by concentrating all three types of capital as a holistic social compass that is both a weapon of negotiation and a guarantee of compromise (Bourdieu, 2000, p. 355), and establishes actor connections that are restructured in terms of the logic of relationality. Tele-medicine practices constitute a champ - field where this relationality can be strikingly observed. However, this restructuring on the axis of flexibility and relationality, as with every major change in the mode of production and its technological transformation, has the effect of accelerating the emergence of a new form of differentiation.

Those who do not have the aforementioned capitals may face difficulties while trying to benefit from telemedicine services; therefore, social inequalities may reproduce themselves. According to Çıtak (2020, p. 454), who defines this situation as a cycle of inequality, “class inequality creates unhealthiness, while unhealthiness ensures the maintenance and reproduction of inequality”, thus the effects of the disease in the COVID-19 Pandemic show class differences. The fact that the pandemic is a period of crisis and the accelerating effect of ongoing social changes is evident in the increase in individuals turning to this system to receive health services.

Schwab (2016, p. 92), who says that we are on the verge of a radical system change that will require people to constantly adapt themselves, emphasizes that we will witness an increasing polarization between those who embrace the change in the world and those who resist it. This will cause an inequality far beyond social polarization, allowing us to distinguish between those who adapt and those who oppose (winners and losers). All of this illustrates the dilemma of social inequality that arises as a consequence of telemedicine (creating it on the one hand and neutralizing it on the other). Hans Jonas speaks of the importance of envisioning the long-term effects of technological interventions as the first task of future ethics (1997). Therefore, it is crucial to discuss all the prejudices inherent in practices such as telemedicine at a time when the technology is not yet generally accepted and widespread in order to prevent various ethical problems in the future before



they occur.

## **CONCLUSION AND EVALUATION**

The use of ICT in hospitals and nursing homes is still low even in developed countries such as Japan. However, the use of technology for elderly care is expected to increase in the coming years. If the cost-benefit ratios of these technologies improve, reduce the burden on caregivers and make robots, which are still being evaluated within the scope of projects, more useful and effective, it is thought that the demand for patient and elderly care technologies will increase even more. Expectations such as prolonged life expectancy, increasing number of elderly individuals and chronic diseases, socio-cultural changes and an increase in the number of elderly individuals living alone due to loss of spouses bring the use of technology in elderly care to the agenda at a more intensive rate. Those who envision Society 5.0 are committed to building a human-centered society that can provide both economic development and the solution of social problems. According to them, the key to creating such a society lies in the fusion of cyberspace and the physical world to create high-quality data (Harayama, 2017).

Today, with the transition from Society 4.0 to Society 5.0, the transition to smart health studies has begun. According to those who form the philosophy of Society 5.0, the quality of life of the elderly can be improved, independence can be supported, self-care capacity can be increased and individual needs can be met by receiving better care. According to them, the use of technology in the follow-up and nursing care of elderly individuals will contribute to the creation and monitoring of a safe home environment and sending the elderly to the nearest health institution without losing time in emergencies. It is thought that monitoring and evaluating the elderly in their natural environment using technology may also be useful in reducing frequent hospital admissions and controlling the stress that may occur due to reasons such as waiting in line at the hospital, transportation and hospital environment. These technological developments may be a pioneer in the development of technology-oriented health policies for elderly individuals, whose proportion is increasing day by day in the world and in our country.

Although it is known as a sociological fact that technological tools and applications cannot completely replace interpersonal communication and interaction, it is thought that technological developments are very advantageous in terms of supporting the daily life activities of elderly individuals, especially those who live alone at home, who have conditions such as dementia, Alzheimer's

or functional disabilities, increasing their quality of life and self-care capacities, creating safe home environments, and directing alerts to a specific center in emergency or health-threatening situations. With the transition to Society 5.0, there will be a need to give patient care staff, nurses and doctors new powers and tasks to cope with information and communication technology. In the near future, telehealth systems will become more widespread, allowing doctors in specific centers to provide medical services to the elderly from anywhere. The feasibility and efficiency of this system is being tested both in the world and in Türkiye during the Covid-19 Pandemic, and the deficiencies are being addressed.

In parallel with these developments in the field of elderly care, it will be necessary to update the content of vocational education programs for students who want to become medical specialists with technology, information and communication issues. More economical products designed for technological purposes, the development of policies regarding the payment of technological devices, the creation of health and social policies for institutions and organizations where warnings will be directed and interventions will be standardized, and the inclusion of these services within the scope of social security will be beneficial for the functioning and continuity of the system. Technological care practices for elderly individuals, which seem like a luxury in today's conditions, are thought to be inevitable in the future lives of the new generation growing up with technology. However, the legal and ethical framework of certain rules, authorizations, duties and responsibilities that must be followed when using these technologies will need to be specifically defined. On the other hand, the extent to which robots can be used in social and moral services other than as auxiliary workers in jobs and processes that require physical strength should be addressed with a multidisciplinary approach by disciplines such as sociology, gerontology, theology and psychology.

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