



Review

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PUBLIC HEALTH ISSUES OF GLOBAL POPULATION AGEING

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Abstract


Population ageing is a global phenomenon of modern society, especially pronounced in Europe, where those aged 65 or over made up almost a fifth of the total population. Multiple geriatric morbidities eventually lead to the functional disability of the older people and that represent not only clinical but also very important public health problem. The existence of cognitive and other mental disorders, which happens usually in the elderly population, can also significantly affect the potential for self-care activities and may be an indication for the institutional care of the elderly. Contrary to the image of ageing marked by illness and disability, modern society is developing a concept of active ageing. The goals of that concept are reducing the risk of disease and disability, preserving functional and cognitive potentials, as well as actively involving the elderly in everyday social activities. To assist this concept, forming an adequate state policy that can meet the demands of a demographically altered social structure and supports active, healthy ageing, is one of the biggest public health challenges in the 21st century.


Keywords: Ageing, Elderly population, Health, Active ageing


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1. Introduction

Population ageing is a global demographic transformation of modern society that can be seen in almost every

country around the world. The main reason for this phenomenon is a decrease in the mortality rate due to chronic non-communicable diseases, but also a decrease

in the fertility rate globally. According to a World Health Organization (WHO, 2017), the representation of the elderly in the general population increased from 9.2% in 1990 to 11.7% in 2013, with an expected growth of 21.1% by 2050. Population ageing is especially pronounced in the Old continent, where people aged 65 or over made up almost a fifth of the total population of European Union (EU). Based on current demographic trends, some experts estimate that the population of older people will increase more than double by 2080 globally (WHO, 2017; Eurostat, 2020). Change of the population' age structure and a higher percentage of the elderly can be seen in countries characterized by a long-term decline in birth rates and the final phase of their demographic transition (Raduški, 2015).

The 2030 Sustainable Development Agenda clearly states that the right for health and healthy life, and the availability of health care does not begin, nor it ends at a certain age. One of the biggest public health challenges in 21st century is forming an adequate state policy that can meet the expectations of a demographically altered social structure and support active, healthy ageing (WHO, 2017; Raduški, 2015). There is no doubt that extended life expectancy is one of the greatest achievements of modern society, bringing many new opportunities and challenges in the life for each individual. However, given that the rate of disability and dependence on another person' help for everyday activities increases significantly beyond the age of 75, the process of older population' health care planning must be based on the fact that an extended life without improvement of its quality is not a sufficient benefit for either the individual or society (Puljiz, 2000; Ač Nikolić and Šušnjević, 2009). In an era of unpredictable health challenges, global climate change, the emergence of new infectious diseases and the problem of microbial resistance to antibiotics, the ageing of the global population is commonly unrecognized, or completely neglected public health problem, having the great potential for making health, economic, and politic consequences.

2. Demographic Ageing as a Global Social Phenomenon

Although the phenomenon of ageing and various aspects of senility have intrigued many researchers in the fields of medical, socio-humanistic, and many other theoretical and applied sciences for hundreds of years, the definition of the age and ageing concept has often been the subject of numerous discussions and changes in official scientific views. The reason for this is probably the fact that extending the human lifespan has always led to more or less visible changes in different spheres of human and community life, as well as in the entire society. According to the actual United Nations (UN) criterion, the elderly are considered to be persons after the age of 60 (WHO, 2020). Since various studies have shown that the biological, chronological and social concept of ageing does not

always have to be the same, even in the same society and especially in differently developed regions of the world, Organization for Economic Co-operation and Development (OECD) has more tolerably determined the old age limit at 65 or more, which is widely accepted today in most societies (Kowal and Dowd, 2001). Because of its applying simplicity, especially in the administrative sense, bureaucratic-chronological determination of old age at early (so-called "young elderly", aged from 65 to 75 years), middle ("old elderly", aged from 76 to 85 years) and late ("very old", more than 85 years of age) is probably the most widely used today, but it should be noted that chronological age is not always the best indicator of the changes that accompany the ageing process, regardless of considered old age limit (Čanković, 2017; WHO, 2002).

Ageing of population has been reported as a sporadic phenomenon in the mid-20th century in economically developed countries of the world, later in some developing countries, and shortly afterwards it has developed into a global social phenomenon. Adverse trends in the age structure of the population simultaneously affect the biological and overall development of a society. The high percentage of the elderly in the population has a number of negative effects in different social spheres: demographic, economic, social and political trends, as well as for the level of development of a particular region or country as a whole. Population ageing has significant economic consequences as well, primarily due to the reduction of the working and productive part of population. However, one should be very careful in making scientific judgments about this aspect of ageing, because older people can often have very active working functions in society, despite their chronological age (Raduški, 2015; Čanković, 2017) (Figure 1).

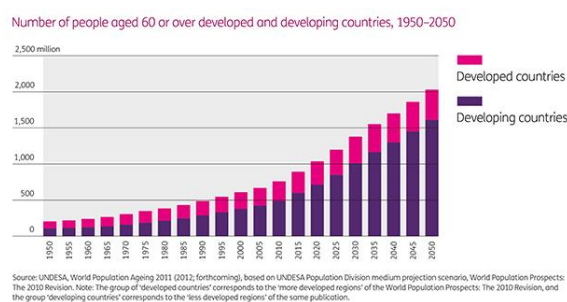


Figure 1. Neural Representation of older people in developed and developing countries, 1950-2050 (WHO, 2002).

According to most researchers of ageing process, there are three key reasons of the global ageing trend:

1. Increasing longevity – in almost every country in the world, people have been living much longer nowadays than in the past few decades; globally, life expectancy has increased by two decades from 1950 to 2010 (from 48, to 68 years), noting that the UN Population Division predicts a further increase in life expectancy

- at the age of 76 by the end of the first half of this century;
2. Global reduction in fertility – the number of children born per woman has fallen from the five in 1950 to the present two on average, with an expected further decline by 2050; considering that families have an decreasing number of children, it is inevitable that the proportion of the elderly in the general population is continuously increasing;
 3. Ageing of so-called “baby-boom” generations, the large number of people born after World War II in almost all parts of the world, has naturally led to a significant representation of the elderly in the general population of the modern world (Bloom et al., 2011).

Overall, in Serbia, one fifth of females in the general population make those over 65 years of age, as well as a total of 15% of the male population. With an average age of the population of 41.8 years (2011), Serbia is one of the demographically oldest countries in Europe and the whole world, and according to experts, the percentage of older people in our country will be as high as 32.2% by 2050. Demographically, the oldest region is south-eastern Serbia, with 25% of the population over 60 years of age. Between 2002 and 2011, the average life expectancy in Serbia has been extended by 1.8 years (from 69.7 to 71.6 years in men, and from 75 to 76.8 years in women). In the same period, the birth rate decreased from 10.4 to 9‰, and the representation of women in the fertile period of life declined from 24.1 to 22.9% in the general population. Between the last two censuses (2002 and 2011), the Belgrade region is the only region in the country that has registered an increase of its total population, primarily due to constant immigration; at the same time, the Belgrade region has a slightly lower average age than the rest of Serbia (41.6 years). In Vojvodina, the representation of people over 65 was 17.9% in 2015, which makes this Serbian province a very old region in demographic terms. This claim is supported by the fact that the average age of the inhabitants of Vojvodina at the same time was 42.4 years, which is significantly higher than the set limit value of 30 years (Raduški, 2015; Čanković, 2017).

2.1. Biomedical Aspects of Ageing and the Prevention of Health Disorders in Old Age Population

Ageing is an irreversible process that begins with fertilization of the ovum and ends with the death of the individual. In the literature, the biologists suggest two types of ageing: primarily or physiologically ageing is biologically determined, as the result of the maturation of the organism over time, while secondary ageing involves the occurrence of pathological changes in the human body, originating from the various internal and external factors that affect our organism over time, such as: environmental and workplace conditions, various diseases, individual habits and behaviors that are negatively correlated with health status (Booth et al.,

2011). Multimorbidity is a common problem in the elderly population that is directly associated with a high risk of injury, disability and death, with a prevalence of more than 60% in the global elderly population (Nunes et al., 2016). In addition, chronicity, unusual clinical manifestations of some diseases, altered responses of the body to therapy in terms of absorption, effects and elimination of the drug, as well as frequent association of multiple disorders in two or all three dimensions of health, represent all extremely important factors affecting the quality of life of the elderly. The existence of cognitive and other mental disorders, which are not uncommon in the elderly population, can also significantly affect the potential for self-care activities, discrimination and social marginalization (so-called “ageism”), as well as the emergence of an objective indication for institutional care of the elderly (Čanković, 2017; Drag and Bieliauskas, 2010).

Multiple geriatric morbidity eventually leads to the functional disability of the older persons; there are 4 frequent problems that have been identified in the health care of people over the age of 65 which represent not only clinical, but also very important public health problem: immobility, instability, independence and incontinence, creating clinical form of Multifactorial geriatric, or 4I syndrome. However, although this syndrome has been identified as one of the leading causes of mortality in the elderly population, a lot of clinical researches show that it can be effectively disabled through focused programs of primary, secondary and tertiary prevention, whose effectiveness is confirmed by study conducted in Croatia (Tomek et al., 2005). Use of The Basic preventive program for the elderly persons (blood pressure measurement, palpation of the peripheral circulation, determination of Body Mass Index (BMI), measurement of waist circumference, identification of risky behaviors and habits, assessment of functional ability, glycaemia measurement, vitamin-mineral status assessment, the fecal occult bleeding testing, determination of total serum cholesterol values, assessment of the eyesight and hearing capacities, digitorectal examination of the prostate and determination of the Prostate Specific Antigen (PSA values), assessment of urinary function, taking care of dental problems, preventive chest radiography, mammography and breast ultrasound, osteodensitometry, seasonal influenza and anti-pneumococcal vaccination), effectively facilitates the implementation of primary and secondary prevention of pathological ageing, and thus preserves the functional capacity that underlies the quality of life of older people. By public health analysis of this common health problem in old age, it is possible to properly assess the needs and opportunities for its effective prevention by multidisciplinary approach, as well as to make a reliable evaluation of the health care effectiveness of the elderly at any given country (Puljiz, 2000; Perko et al., 2005).

2.2. The Right to Effective Health Care and Quality of Life of the Elderly

Considering multidimensional sensitivity of this population group, older people are marked as an extremely vulnerable in the domain of health and social care, whose human rights are regulated by the UN Principles for Older Persons, formed and approved at the UN General Assembly in 1991 (UN, 1991). In addition to legally regulating the social status of the elderly, this document also defines the essential elements of a quality life in old age: independence and active participation of older people in society, community care for the elderly and self-actualization as an important prerequisite for a dignified life. At the Second World Assembly on Ageing, held in Madrid in 2002, The Madrid International Plan of Action on Ageing (MIPAA) was adopted, focusing on three priority and public health aspects of elderly health and social care: the elderly and development, advancing health and well-being into old age, and the provision of a supportive and enabling environment for the older persons (Čanković, 2017). Good health is a basic precondition for a quality life in old age, so it is clear that both of these documents offer a solid basis for providing comprehensive and integrated health care for the elderly, starting with health promotion and disease prevention through primary health care services, up to the treatment of acute and chronic diseases, rehabilitation and palliative health care. Besides that, one of the most important goals of the Madrid declaration is the elimination of discrimination against the elderly people in relation to social or economic status, gender, sexual orientation, national and religious affiliation, or anything else, clearly stating that this part of the population must be actively involved in the social life and development of their community (UN, 2002). Serbian Health and Social Care Law (Zakon o zdravstvenoj i socijalnoj zaštiti Republike Srbije) also recognize persons older than 65 years as a vulnerable, so health and social care of this population group is planned and realized from the state budget funds (Službeni glasnik RS, 2014).

Without adequate quality of life, life extension by itself is objectively of little importance. Quality of life is a reliable indicator of the healthcare system effectiveness, which is the main reason for the significant increase in interest for researching and assessing the quality of life of older people worldwide. While some authors point out that no rule can be established between the quality of life level and age, others state that there is a negative relationship between these two variables, meaning that younger people are always more satisfied with their life than older people (Brajković, 2010). Although closely related to physical health and functional capacity, the quality of life of the elderly is not determined only by health factors, but also by socioeconomic status, financial independence level, position in society, and availability of social and relatives' support and assistance. Recognizing the need for creating strategies for safer and supportive social environment that could enhance the quality of life of the

elderly population, WHO Regional Committee for Europe formulated a fifth goal under The 21 Goal for 21st Century Strategy - Healthy ageing, suggesting that "all persons 65 years of age and older should be given the opportunity to achieve their full health and social potential by playing an active role in society" until 2020, focusing primarily on qualitative, and then quantitative extension of the lifespan (WHO, 1999).

Following the recommendations of the UN and WHO, as well as positive examples from countries in the region and the world, the Government of the Republic of Serbia adopted in 2006 a National Ageing Strategy, with the aim of aligning education, labor markets, health and social care system with the emerging demographic changes, but also to create a social environment without discrimination based on age, which rationally use potentials of the elderly in order to create a better and healthier society. This document sets as a priority activities aimed for preserving and improving the health and quality of life of the elderly, as well as providing factors that will contribute to a quality and independent life of this population category (Vlada RS, 2006). In addition to regulating social care for the elderly, the Government of Serbia in 2017 also adopted a Decree on a National Program for Preserving and Improving the Health of the Elderly, pointing out the need for individual health responsibility development, social support for the elderly, the promotion of health and healthy lifestyles in relation to health, as well as the preservation of functional ability in old age. In this document, targeting health care towards the primary sector and ensuring the availability of health services in an integrated health care system that is tailored to the needs of the elderly population, is defined as short-term and long-term expected results by 2020 (Čanković, 2017).

2.3. Active Ageing Concept

The concept of active aging is interpreted as "the process of optimizing the living conditions of the older persons, which contributes to achieving a better quality of life for individuals in old age" (Domazet et al., 2017). At the end of the last century, this concept was created in developed countries as a response to the global social marginalization of the elderly and the prejudice that old age should be viewed only in the context of illness and functional disability. The term "active" in this sense means the comprehensive participation of the elderly in social, economic and the cultural life of the community. The concept of active ageing itself has three components: reducing the risk of disease and disability, preserving functional and cognitive potentials and actively involving the elderly in productive social activities. Essentially, the concept of active aging is only achievable if the elderly person is actively socially engaged, with the prerequisite of preserved health and functional independence (Domazet et al., 2017; Službeni glasnik RS, 2017). The Concept of healthy ageing, an important public health goal of contemporary society, is defined by the US Center for Disease Control and Prevention (CDCP), as "developing

and maintaining an optimal level of physical, mental, social well-being and functionality in the elderly population” (Satariano et al., 2012). Based on this definition, recommendations for active and healthy aging have been formulated, including:

- Regular practice of moderate physical activity;
- Practicing continuous mental activity, lifelong learning and acquiring new skills and knowledge;
- Balanced and healthy nutrition;
- Prevention of diabetes and nutrition-related diseases;
- Non-smoking, prevention of drug, psychoactive substances and alcohol abuse;
- Continuous work (professional) activity in compliance with the objective health limitations;
- Communication with people in the social environment, transferring acquired knowledge and skills to younger people;
- Enjoying love and sexual activities;
- Active participation in all aspects of community life;
- Regular maintenance of personal and residential hygiene;
- Accidental falling and injury prevention;
- Rejection of social and personal prejudices about ageing;
- Consistent adhering to given health advice;
- Consistent adhering to recommended advices regarding to weather and natural disasters (URL1).

3. Conclusion

One of the biggest public health challenges of today is to create reliable and effective strategies for promoting, preserving and promoting health in the growing and, by many characteristics, highly diverse population of the elderly in the world. Effective health care, prevention of discrimination and marginalization of the elderly is an important aspect of modern society that recognizes importance and the potentials of active social contribution in the elderly population. Achieving these goals requires forming and adoption of national active-ageing strategies that define and guide the implementation of activities to improve all dimensions of health and well-being, social position, and quality of life of an ageing population in a demographically changed society.

Conflict of interest

The authors declare that there is no conflict of interest.

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