

Active Ageing and Game

Abstract

Active aging is a concept about maintaining and sustaining cognitive and functional abilities during the process of aging and in old age. To ensure that human beings are not detached from life, continue their societal roles, and have an effective and productive life as they age, it is important that human beings keep performing the activities that they enjoy and take pleasure in. However, it was found that no study adequately addressed the importance of the game, which is one of these activities, to active aging. Therefore, the article aims to examine the concepts of active aging and game, the contributions of the game to active aging, and the use of digital games in active aging. Hence, raising awareness about the importance of the game in the process of active aging and spreading the use of the game in this process are targeted.

Keywords: Active aging, Game, Elderly

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Introduction

There are four main demographic agenda topics, the importance of which increase with each passing day on a global scale across the world. These topics are population growth, migration, urbanization, and population aging.¹ The population aging occurs rapidly along with the effect of factors such as the increase in the average life expectancy and the constant development of technology and medical sciences.² The World Health Organization (WHO) estimated that one in five people would be aged 60 years or above and the old population would reach two billion people by 2050.³ For the first time in 2018, the total old population exceeded the population of children aged below five years throughout the world.¹ Likewise, in Turkey, the statistical data showed that the old population increased. According to the data obtained from the Turkish Statistical Institute, 9.1% of the overall population in Turkey was made up of old population in 2019, while the old population was 9.5% of the overall population in Turkey in 2020.^{4,5} As per the report that was issued by the Turkish Statistical Institute and indicated the population projections for 2018-2080, the population aged 65 years or above would reach 10.2% of the overall population (8867951) by 2023 and 25.6% of the overall population (27413359) by 2080 in Turkey.⁶ The population aging that occurs in both developed and developing countries brings forward the need to address old age as a societal public health issue going beyond the individual level.⁷ The population aging becomes a global issue and this situation requires that, by acting presciently, the countries take measures such as novel policies, age-friendly practices, and comfortable accommodation spaces.¹ The Sixty-Ninth World Health Assembly adopted the global strategy and action plan about aging and health in 2016, and this strategy emphasized the planning of societal and political actions necessary to assure that everyone would have the opportunity to experience both a long and healthy life.⁵ The basis of these activities is formed by the concept of “active aging,” which is essential to ensure that human beings continue to experience the aging process comfortably and productively, and the practices relevant to this concept.⁸ This article aims to examine the concept of active aging, the effects of the game on aging, and the use of digital games, which replace conventional games, in the process of active aging.

The Concept of Active Aging, Its Components, and the Determining Factors

Aging is “a process of change that starts and has a continuity as of birth for each living being.”⁷ This process is a natural and inevitable situation for all living beings.⁹ The concept of active aging was adopted by the WHO in the late 1990s and was described as “the process of optimizing human beings’ health, security, and societal participation opportunities to enhance the quality of life as the human beings age.” According to this definition, the main components of active aging are health, participation, and security.⁸ In the Active Aging Conference held in 2010, “lifelong learning” was added to these components and defined as the fourth component.¹⁰

These four components designated for active aging are the concepts that generally affect each other in human life.¹¹ Health is acknowledged as a universal requirement that increases the quality of life for each human being.¹² The participation in all areas of activity such as business, game, love, friendship, and culture depends on the physical and mental state of health. In return, participation helps to affect health positively.¹⁰ In the case of active aging, the purpose is not only to ensure being active physically and economically but also to make participation possible in terms of social, cultural, spiritual, and societal aspects.¹¹ Lifelong learning is explained as a source that helps the old individuals remain healthy and interested in their surroundings and assures their personal security by constantly updating their knowledge

and skills.¹³ Regardless of age, the healthier and more knowledgeable the individuals are, the higher chance they will have for full participation in society. Therefore, health and knowledge are the key factors that add strength to human beings and society.¹⁰ The security as the fourth component of active aging represents the skill in being protected from neglect, abject poverty, abandonment, and the lack of care, which are situations encountered frequently in old age.¹¹ Active aging is a life investment that has continuity and is pertinent to the entire life. Thus, it is underlined that the earlier the elements of health, lifelong learning, participation, and security are set to be optimized in life, the higher the chance of spending the aging process with high quality of life and enjoying this period blissfully will be.

Active aging is associated with a variety of determinants surrounding individuals, families, and societies. In the report published by the WHO in 2002, the determinants of active aging are exhibited via a figure (Figure 1).⁸ According to the figure in the WHO report, culture and gender are defined as the comprehensive determinants that shape the individual and the individual's environment during the lifetime. Besides, it is asserted that the personal determinants (genetic and psychological factors) and behavioral determinants (physical exercise, diet, and so on) can differ for each individual.⁸ The physical environment covers basic needs such as accommodation, security, and clean water. The social determinants include the individual's circumstances such as social support, violence, abuse, and education. The economic determinants are made up of income level, social services, and the individual's employment status. The determinants of health and social services cover the factors such as the advancements and developments in the health system, curative services, and long-term patient care.^{8,9}

The word "active" in the concept of active aging does not only refer to the working and labor force but also covers societal and social participation. Therefore, it is put forward that, to support the component of societal participation in Turkey as well, the activities in which the old individuals would participate voluntarily and which would help the old individuals socialize and enjoy their time should be planned.^{10,14} A variety of activities performed in old age are needed to uphold that the old individual can sustain a more productive, active, and happy life in this process even if such activities cannot necessarily guarantee a long life. Thus, it is predicted that supporting active aging will have positive effects such as reducing chronic diseases and unexpected sudden deaths, ensuring the enjoyment of life in old age, preventing the withdrawal from societal roles, and lowering medical expenses.

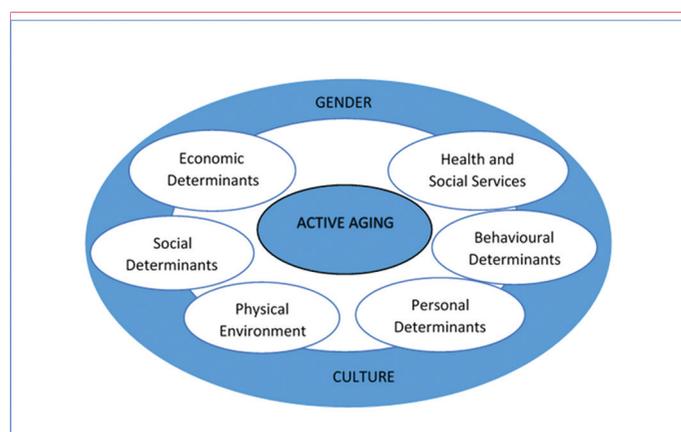


Figure 1. The determinants of active aging.⁸

The Concept of Game and Its Evolution from Past to Present

According to psychoanalytic theory, the game is defined as a type of universal behavior that is of importance to the maintenance and elevation of health and welfare levels.¹⁵ For Winnicott (1971),¹⁶ the game is "an area in the space of transition between the internal and external realities, which makes the creative action possible." It is stated that this area helped human beings combine the qualities of objective reality and imagination.

The presence of the game in our lives dates back to very ancient times.¹⁷ The oldest tool used in the games was the stone and the oldest game played with stones was the "Five Stones." It is asserted that, among the gaming tools changing from culture to culture, the ball and rope were the materials used most frequently besides the stone. It is set forward that the games preferred by the children in Turkey in the past were in general the ball games, the stone-related games, and the running and tagging games.¹⁸ Along with the expansion of the place of technology in our lives, these relatively simple games played in the past were replaced by computer games. In view of this situation, today, individual and indoor games are preferred instead of games played outdoors in groups.¹⁷

The game is an activity that is utilized to help children express themselves, develop their skills, solve the conflicts in their inner worlds more easily, and cope with the problems effectively. Moreover, it is put forth that the games were also quite effective in facilitating socialization and enhancing interaction with the environment.¹⁹ Therefore, it is highlighted that the game is a type of activity to be performed in every setting by all human beings who are interested in having entertainment and enjoying their spare time and, at the same time, benefiting from the positive effects of the game.²⁰ Playing games as an act attributed solely to children from past to present is not an activity performed commonly by other groups of age despite its positive effects. However, it is stated that the game had therapeutic effects on every age group and produced positive outcomes for health and well-being.¹⁵

The game is an activity that human beings perform by including themselves entirely in the process. As a human being plays a game, both hemispheres of the brain are actively used. While the left hemisphere plans the move supposed to be made to win a game by developing a strategic approach toward the game, the right hemisphere makes the human being enjoy the game by supporting the use of imagination.²¹ Considering the effects of the game on the brain, it is put forward that the game was a strategic and experimental act that enhanced the human being's creativity.¹⁵

The game is an activity that affects not only the nervous system but also other body systems. It is stated that the emotions such as smiling, positive-thinking, and feeling busy, which come forward as the individuals perform these activities, lead to deep and regular breathing routines and hence, a better oxygen exchange. The game contributes also to relaxation in the digestive system activities. It is asserted that the complaints related to musculoskeletal disorders such as muscle hardness, body pain, and general fatigue decreased.²¹ Besides, it is set forth that the game helped old individuals recover from postural disorders, reduced coordination and reflex problems, and enhanced vitality in all groups of age. It is put forward that even the simplest forms of traditional games contributed to the development of interpersonal relations and socialization.²² Thus, it can be said that the game had numerous positive physical, social, and psychological effects on individuals as of the childhood period.

The Role of the Game in Active Aging and the Relevant Studies

It is stated that the acquisition of new hobbies and participation in activities were elements that were important to have and sustain active aging as they promoted continuous learning.²³ This situation ensures that the game activities, which make it possible to learn, to have fun while learning, and to socialize while having fun, come to the forefront in the process of active aging.¹⁵

There are a limited number of studies about the place of the game in old individuals' lives, old individuals' outlooks toward the game, and the effects of the game on these individuals.^{15,19-21,24-27} It is asserted that the game helped adult individuals promote creativity, sustain biopsychosocial health, and develop the skill of establishing communication.²¹ By virtue of the game that smooths the way for old individuals to cope with psychosocial obstacles, the challenges which are connected with these obstacles are averted.¹⁵ It is put forward that, whatever age group the individual was placed, the games selected and played freely enabled the individual to move away from the problems, be freed from the societal restrictions and responsibilities, and get pleasure.¹⁹

The game is accepted as a supportive tool to help the old individuals adapt to their surroundings more easily,²⁴ lower their absentmindedness levels,^{24,28} develop their interpersonal relations, and be protected from depression.²⁹ Additionally, it is set forth that mental activities such as the puzzle and game protected individuals from Alzheimer's disease by 30%.²⁸ In the study by Trizinski and Higgins (2001),²⁴ it is asserted that the physical games requiring the individual to move increased the attention level and the feeling of relaxation in old individuals whilst the symbolic games developed skills such as self-knowledge, self-awareness, and self-expression. By indicating that the development had continuity, the study by Ward-Wimmer (2003)²¹ emphasizes that the game was an important tool as it supported several domains in the case of adults, such as creativity, ability to act a role, and integrity of body and mind. Thus, it is stated that, in the process of aging with the support of game activities, the individuals are supported to fulfill themselves and develop skills in terms of active aging.^{19,24} Furthermore, the study by Leeuwen and Westwood (2008)¹⁵ puts forth that the game helped old individuals have an independent and more active life and also the active aging affected the quality of individuals' lives positively.

In a study that analyzed the personality characteristics of old individuals who played games, it is stated that, psychologically, these individuals were happy, optimist, funny, enthusiastic, and easy-going people.²⁵ By referring to the relationship of old individuals' game perceptions with psychological states such as life satisfaction, loneliness, and happiness, the study by Tse and colleagues (2016)²⁰ upholds the view that the game was an effective tool for the solution of psychological problems. Moreover, another study that researched old people's game-related definitions showed that the game meant mental and physical work, role continuity, competition, and the sense of belonging, and furthermore, the study emphasized that the game was a therapeutic activity important to individuals from all groups of age.²⁷ Thus, considering also the positive effects of the game on old individuals, it can be stated that the game can be used as an activity likely to contribute to the process of active aging.

The Future of the Game in Active Aging

The development of technology and the growth of the old population both continue simultaneously. Thus, in the case of old individuals, the developing technology constitutes a crucial source for ensuring security, supporting mobility, sustaining an independent living, and

continuing social participation.³⁰ Today, efforts are made to benefit from the advantages of technology in all domains during old age, and several advanced technology applications such as robotic applications, age-friendly mobile phones, sensor technology for fall prevention, and smart devices for elderly care are adopted. Besides these applications, digital games are produced for old individuals.³¹

The researchers and software developers attach importance to assuring that the digital games developed for old individuals had content aimed at supporting the abilities and skills likely to deteriorate particularly in old age.³² The studies show that digital games in old age have the potential to support active aging in terms of physical health,^{33,34} social participation,^{34,35} and cognitive ability.^{34,36,37} It is asserted that the computer-supported game software generally targets the negative effects of cognitive aging.³⁸

One of the software products created for old individuals by using technology and combining the game and exercise is the exercise games ("exergames"). These games offer the opportunity to do exercise by having entertainment. The study conducted by Velazquez and colleagues (2017)³⁹ about exercise games with the participation of old individuals puts forward that the games enhanced the self-care competence in old people and also, an increase was observed in the participation of old people who reported that the activities were useful and entertaining. In the study carried out by Kahlbaugh and colleagues (2011)²⁶ to analyze old individuals who played digital games and watched TV, it is asserted that the loneliness levels of the group that played digital games decreased in comparison to the group that watched TV, and playing games had a positive effect on the mental state by enhancing socialization.

On a par with the developing technology, the place and the presentation styles of the games changed considerably, and the use of games for purposes of learning and education became more common. These games called "serious games" aim to offer education about different areas and lead to behavior changes while they are being played by the individuals. The serious games used in the area of health are digital games that can be played also by old individuals and offer the opportunity of lifelong learning and accordingly active aging.³¹ These games are digital health games that can be programmed to include health communication, health informatics, health development, health education, and public health practices as well. It is set forward that the serious games that are the digitized means of developing health can be used in the process of active aging.^{32,40,41} Thus, considering the last stage attained by the games alongside the development of technology, it can be said that the positive effects of digital games on health can be enjoyed more by integrating the digital games into the process of old age and also, the digital games will have positive effects on the promotion of the adaptation of old individuals to technology.

Active aging is a multidimensional concept with certain components and determinants. Therefore, the health policies and programs to be created to support active aging should be produced by taking all features of the concept into consideration. Ensuring that the old individuals spend their spare time having fun and establishing communication to support active aging is as crucial for health professionals as providing healthcare. Therefore, the game activities, which would support active aging and lifelong learning especially in institutions such as nursing homes and aged care homes in which old individuals spent a significant part of their lives away from their families in an unusual setting, should be organized by health professionals, and the old individuals should be encouraged to participate in these activities. It is recommended as follows: first, the health professionals and politicians support the digital health games considered to contribute significantly to the improvement of health and the promotion of active aging

in old individuals; second, the use of activities such as digital health games be popularized; and third, more studies be performed to analyze the short-term and long-term effects of the games on health.

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