

THE EFFECT OF FALLS ON QUALITY OF LIFE IN THE ELDERLY

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The thesis entitled “**The Effect of Falls on Quality of Life in The Elderly**” which was prepared and presented as a thesis, was written by myself and in accordance with the scientific, academic rules and ethical conduct. The idea/hypothesis of my thesis solely belongs to my supervisor and to me. The research pertaining to the thesis was conducted by myself and therefore, all of the used sentences and interpretations within the work belongs to me.

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ÖZET

THE EFFECT OF FALLS ON QUALITY OF LIFE IN THE ELDERLY

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Bu çalışmanın amacı, yaşlılarda düşmelerin yaşam kalitesine etkisini belirlemektir. Çalışma tasarımı tanımlayıcı bir kesitseldi. Bu çalışmada amaçlı örnekleme yöntemi kullanılmıştır. Çalışmaya Irak'ın Anbar kentindeki Al-Ramadi Eğitim Hastanesi'nde bir ortopedi, cerrahi ve acil servise, düşen ve tedavi için başvuran 65 yaş ve üzeri toplam 90 yaşlı hasta dahil edildi. Veriler, Ocak 2021 ile Haziran 2021 arasında yüz yüze görüşme yoluyla toplanmıştır. Araştırmada katılımcılara sosyodemografik verilerinin yanı sıra düştükten sonra yaşadıkları tıbbi sürece ilişkin soruları içeren ve yaşam kalitelerini belirleyen anketler uygulanmıştır. Sonuçlar betimsel ve çıkarımsal istatistik yöntemiyle analiz edildi. Araştırmanın sonuçlarına göre; ortalama ve standart sapma ($3,17 \pm 0,473$) ile yaşlı katılımcıların %58,9'u kabul edilebilir bir yaşam kalitesi değerlendirme düzeyine sahipken, yaşlıların %27,8'i iyi düzeydeydi. İleri yaşta olan, düşük eğitim düzeyi ve düşük ekonomik düzeye sahip katılımcılarda düşük yaşam kalitesi puanları belirlendi. Katılımcılar arasında; kırık yaşayanlar, hastanede tedavi görenler ve ameliyat olanlar daha düşük yaşam kalitesi puanlarına sahipti. Katılımcıların hastanede kalış süresi ne kadar uzun olursa yaşam kalitesi puanlarının o kadar düşük olduğu belirlendi. Düşme sonrası kalıcı sakatlık yaşayanlarda yaşam kalitesi düşüktü. Şaşırtıcı bir şekilde, çalışmada; düştükten sonra rehabilitasyon hizmeti alanların yaşam kalitesi almayanlara göre daha düşüktü. Kronik hastalığı olan katılımcıların yaşam kalitelerinin olmayanlara göre daha düşük olduğu, katılımcıların günlük kullandıkları ilaç sayısı arttıkça yaşam kalitesi puanlarının düştüğü belirlendi.

2022, VI sayfa

Anahtar Kelimeler: Düşme, yaşam kalitesi, yaşlı

SUMMARY

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The purpose of this study was to determine the effect of falls on quality of life in the elderly. The study used a descriptive cross-sectional design. The purposive sampling method was used in this study. A total of 90 elderly patients, aged 65 years and over, who had fallen and presented for treatment at an orthopedic surgical and emergency unit at Al-Ramadi Teaching Hospital in Anbar, Iraq, were included in the study. Data were collected between January 2021 and June 2021 with face-to-face interviews. In the study, questionnaires including questions about the medical process they experienced after falling, in addition to their socio-demographic data and determining their quality of life were applied to the participants. The results were analyzed with the descriptive and inferential statistics method.

According to the results of the study, while 58.9% of elderly participants had an acceptable level of assessment of quality of life in terms of mean and standard deviation (3.17 ± 0.473), 27.8% of the elderly had good level of quality of life. Low quality of life scores were determined in participants with advanced age, low education level, and low economic level. Among the participants, those who had fractures, those who had to be treated in hospital, and those who had an operation had lower quality of life scores. It was determined that the longer the hospital stay, the lower the quality of life scores of the participants. The quality of life was low for those who experienced permanent disability after a fall. Surprisingly, in the study, the quality of life of those who received rehabilitation services after falling was lower than those who did not. The quality of life of the participants with chronic disease was lower than those without, and the quality of life scores of the participants decreased as the number of drugs they used daily increased.

2022, VII pages

Key Words: Falls, quality of life, elderly

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ABBREVIATIONS AND SYMBOLS

QOL	: Quality of life
HR-QOL	: Health Related Quality of life
BMI	: Body Mass Index
CD	: Chronic Diseases
WHO	: World Health Organization
HTN	:Hypertension
DM	:Diabetes Mellitus
One-Way ANOVA	: One-Way Analysis of Variance
M.S	: Mean Score
SD	:Standard Deviation
F	:F- Computed
P	:Significance of Probability
FOF	: fear of falling

INTRODUCTION

Aging is a natural process that happens to everyone from birth to death. Biological changes that occur with the aging process raise the risk of falling, either alone or in combination with other variables (Karadakovan,2017). The process of aging now spans more than three decades, more than a generation. The terms "young-old," "old," and "old-old" are commonly used to describe various older adult populations. Individuals in their 60s and early 70s who are well and fit are considered "young-old". Individuals in their 70s and 80s who have chronic diseases and are slowing down due to various irritating symptoms are considered "old".The "old-old" or "oldest-old" are frequently unwell, crippled, and maybe dying.Sensory changes, cognitive deficits, and frailty may be mild or severe in the diverse population of persons over 85years.Falling, heart disease, and difficulty with daily activities are very common, but they are not universal (Jaul and Barron, 2017).

Falling, which is defined as an accidental act that results in a change in the individual's position from their initial position to a lower level, is a common occurrence and an increasing problem during the aging process. The frailer the elderly person is, the higher their risk of falling, which is a major cause of illness, institutionalization, and mortality (Nicolussi *et al.*, 2012).

Falls are unintentional events that occur when a person's center of gravity is lost without effort made to regain equilibrium, or if this effort is inefficient. Falls are the most common cause of injury at older ages. Falls comprise 40% of traumatic injury-related hospitalizations. The most common fall-related complications are pain, bruises, lacerations, fractures, including upper extremity and hip fractures, and cerebral bleeding in severe cases.Falls among the elderly can have serious health consequences, so efforts to reduce their frequency are critical. Every year between 28 and 35% of those aged 65 and older die, and between 32 and 42% of those aged 70 and older die linked to falls.Furthermore, independent of injury, 20 to 39% of people who fall have anxiety about falling, which leads to functional impairment(Sharif *et al.*, 2018). The World Health Organization (WHO) (2021) defined a fall as an incident that results in a person landing on the ground, floor, or other lower level. Falls can lead to fatal or non-fatal accidents, with non-fatal injuries being the most common. Falling raises the risk of mortality and disability, and it can also result in the loss of freedom. In the United States, an estimated 29 million falls were recorded in 2014. Twenty-seven thousand older individuals died as a result of falls, and seven million were injured. Falls were

estimated to cause 68% of hospitalizations among injured older people, and this percentage rose to 86% for those aged 85 years (Değer *et al.*, 2019).

Age is one of the most significant risk factors for falls. The elderly are at the highest risk of death or serious injury from falls, and the risk increases with age. For example, in the United States, 20–30% of elderly adults who fall suffer moderate to severe injuries such as bruising, hip fractures, or head trauma. This amount of risk may be due in part to physiological, sensory, and cognitive deficiencies associated with aging, as well as surroundings that are not suitable for an aging population (WHO, 2021). The population of the earth becomes more elderly with each new day as human life expectancy increases, and the elderly population grows rapidly, in tandem with lower birth rates and higher living standards. According to 2015 estimates, the older population accounts for 8.5% of the global population (Hacıdursunoğlu Erbaş *et al.*, 2021).

According to a United Nations report in 2009, the percentage of people aged 60 and over in Iraq was 3.9% for men and 5.6% for women, with a sex ratio of 70 males for every 100 women. Over the last few years, some older Iraqis have lost all of their relatives and are now completely reliant on them selves. Because they are unable to work due to their age or poor health, some have turned to begging on the streets and have become homeless, while others are supported by their neighbors and relatives (Abdal Qader *et al.* 2013). Unintended injury deaths related to falls are the second highest reason for death worldwide. Each year, an estimated 684,000 people die from falls about the world, with over 80% of these deaths occurring in low- and middle-income nations. Adults above 60 years are individuals who have the highest risk of death. A total of 37.3 million injuries are severe enough to require medical attention each year (WHO, 2021). The global elderly population is rapidly increasing, with the incidence of non-communicable diseases expanding in lockstep. While falls can happen at any age, the frequency and severity of fall-related injuries rises as people get older. People over the age of 65 are more likely to fall; the annual incidence of falls rises from 25% at 70 to 35% at 75 (Amin *et al.*, 2019). Falls are a prominent cause of sickness and disability among the elderly. Every year, more than one-third of persons aged 65 and up fall, with half of these falls occurring more than once (Tinetti and Kumar, 2010). The risk rises or triples if there are cognitive deficits or a previous history of falls. Falls are a risk factor for injury-related hospital admissions among individuals 65 and older in Canada (85%). Many people consider falls to be a risk factor only for fractures, ignoring the fact that they can have

permanent health, social, and psychological ramifications, as well as significant economic consequences (Al-Aama, 2011).

Every year, around one-third of all adults aged 65 and up fall, with half of those falling multiple times. Even low-energy trauma, such as a fall, might result in physical harm. Approximately 10% of all falls result in serious injuries that necessitate hospitalization. Hip fractures (50%), arm breaks (13%), and head injuries (10%) are the most common reasons for elderly individuals to be admitted to hospital after a fall. Falls not only cause physical injuries, but they can also have a significant influence on the elderly person's quality of life and health-care costs (Hartholt *et al.*, 2010). As an individual gets older, their chances of falling grow considerably. According to the prognosis, a third of older adults living in the community will fall within a year, and this number rises to 50% among institutionalized older adults. When the elderly fall, roughly 5% of them require hospitalization, mostly for hip fractures, and one out of every three patients dies within a year (Gama and Gómez-Conesa, 2008).

The recognition and adjustment of the risk factors involved in the incidence of falls, which are separated into intrinsic and extrinsic factors, is the first step in preventing falls. Age, the existence of various chronic diseases, polypharmacy, depression, diminished cognition, and reduced functional capacity, among other intrinsic characteristics, are all linked to physiological changes in the aging process. Extrinsic factors, on the other hand, are tied to the environment and have a significant influence in episodes of institutionalization and increased health and social care expenses (Nicolussi *et al.*, 2012).

Falls can result in fractures and a persistent fear of falling, reducing the elderly person's ability to participate in regular activities. Frequent falls in the elderly are linked to a higher risk of morbidity and mortality, as well as deficits in functional and cognitive capacities. Education, training, building safer settings, emphasizing fall-related research, and implementing successful regulations should all be part of any prevention strategy (WHO, 2021). Falls are accidents that may be avoided, and they are a promising subject for preventive medicine to address. As a result, public health specialists should actively investigate this preventive concern involving falls among the elderly. To lessen the burden of falls on the community, more study is needed. It goes without saying that a lack of understanding of risk factors and how to avoid them contributes to the high prevalence of falls. As a result, a deficient understanding of the problem will result in inadequate

preventative measures that should be implemented, resulting in further falls (Abdal Qader *et al.*, 2013). Because of rising health-care expenses, public health officials have begun to pay more attention to the consequences of falls and accompanying morbidities, as well as enhancing quality of life (QOL) in old age. The evaluation of the impact of treatment and care provided by health services on the well-being of clients requires the assessment of QOL. QOL metrics were created to better understand the types of impacts that health care interventions have on clients' lives, as well as their cost-effectiveness in comparison to other health-care initiatives (Nicolussi *et al.*, 2012).

It is vital to comprehend this and learn what it means for the elderly in order to develop health care policies, initiatives, and interventions focusing on increasing their quality of life. In health, there are two strands to the concept of QOL: one proposed by the WHO, which states that "quality of life is the personal perception of a person's status in life, within the framework of the culture and values they live in, and in relation to their aims, expectations, norms, and concerns," and the other strand which is widely used in the literature establishes more direct relationships with illnesses or health interventions. Health-related quality of life (HRQOL) is defined as a high level of mental, physical, social, and role in life functions, which includes partnerships, health perception, abilities, degree of satisfaction with life, and feeling of well-being, as well as prospects for the future and patient satisfaction with their therapies, results, and health status. In terms of the elderly person's understanding of QOL, a study of three groups found that the first group conceptualized it by associating it with interpersonal relationships, emotional balance, and good health; the second group associated it with healthy habits, leisure, and material goods; and the third group related it to spirituality, work, righteousness and charity, knowledge, and favorable environments; that is, QOL was linked to incorporating your life and your ideas. Understanding the impact of falls on the elderly and on their notions of quality of life is a necessity to implement policies and plan elderly care actions (Nicolussi *et al.*, 2012). Severe fall accidents exacerbate the elderly person's HRQOL by limiting their mobility, prompting admissions to nursing homes, and raising health-care expenditure (Chang *et al.*, 2010).

1.2. Objectives of the study:

To determine the effect of falls on the quality of life in the elderly.

1.3. Statement of the problem:

Statement of the problems can be summarized with the following question: what is the effect of falling on the quality of life in the elderly ?

1.4. Hypothesis of the study:

The main hypotheses of the research are

H0: There is no effect of falling on the quality of life in the elderly.

H1: There is an effect of falling on the quality of life in the elderly.

1.5.Limitations of the study:

1.The basic research limitation is that data from the sample cannot be generalized.

2.The lack of adequate studies about the effect of falls on quality of life in elderly people in Iraq, especially in al Anbar Province.

1.6.Assumptions of the study:

The aim was to determine the effects of falls on the elderly population to understand how to care for them. The logic is that older people who fall have both physical and mental problems. Therefore, we believe that a fall has severe effects on the elderly in terms of severity and mental health, as well as on their life style and the health care system.

LITERATURE REVIEW

2.1. Historical Background:

Ageing and senescence study has a long history, dating back to the dawn of philosophical and medical thought in ancient Greece and the Roman Empire. From Hippocrates to deoxyribonucleic acid (DNA), the history of ageing ideas is amazingly complex and full of disciplinary interactions, presenting such a range of viewpoints that it would be hard to chronicle it without identifying a few continuous lines of conjecture. These reoccurring subjects were grouped chronologically and separated into three primary periods: (1) classical to medieval ideas; (2) Renaissance to early modern times; and (3) nineteenth to twentieth century speculations (Grignolio and Franceschi, 2012).

Humans have been fascinated by the process of aging for millennia, dating back to the days of Aristotle and Plato. Plato, a Greek philosopher who lived around 400 B.C., distinguished between age and sickness. While Plato's beliefs are a little aristocratic, he believed that we all age. One can achieve harmony between the movement of the spirit and the movement of the body by living a healthy lifestyle. Plato's student Aristotle believed that age caused mental capacity to deteriorate. Aristotle, unlike Plato, did not distinguish between aging and sickness; rather, he maintained that aging was a natural disease that is accompanied by a natural loss of intelligence. While early philosophers were intrigued by the concept of aging, it was not until recently that the concept of aging became popular (Colorado State University, 2022).

Since the 1980s, researchers have attempted to come up with a universal definition of a fall. Tinetti et al. defined a fall as "an occurrence that results in a person coming to rest inadvertently on the ground or other lower level, not as a consequence of a large intrinsic event (such as a stroke) or overpowering hazard" (Tinetti *et al.*, 1986).

2.2. Theoretical Perspectives on Aging:

Aging is characterized as a complex mix of physical, emotional, and social changes that contribute to an increased risk of health and functioning difficulties from the standpoint of geriatric care. Aging is a gradual loss of function that occurs over time and is not caused by disease, though the effects of aging may increase the risk of disease in older people. Up to 300 theoretical views were developed to explain how and why aging occurs. In general, these

perspectives can be divided into three categories: biological perspectives, psychological perspectives, and social perspectives.

Biological theories postulate that aging is a phenomenon experienced by all members of a species, that it is a process of physical deterioration, that it is progressive and gradual, and that it is irreversible. Examples include the neuroendocrine hypothesis, proliferative aging hypothesis, oxidative damage/free radical hypothesis, and rate living theory (Clark, 2015).

Scientists have attempted to explain why humans age since the dawn of humanity. Aging is explained by a variety of scientific and behavioral hypotheses. Questions about aging are answered by biological theories, which seek to find answers to questions like "how do cells age?", "what sets off the actual event?" and "how does the aging process work?" (Miller, 2009).

2.2.1. Biological Theories of Aging:

2.2.1. Stochastic Theories

2.2.1.1. Error Theory: According to the error theory, a build-up of errors in protein synthesis accumulates over time, culminating in cellular dysfunction. Defective cells are created, causing biological function to be disrupted.

2.2.1.2. Somatic Mutation Theory: This idea is related to the error theory in that it suggests that when cells are exposed to x-ray radiation or chemicals, DNA is altered, resulting in an increase in chromosomal abnormalities and a decrease in cellular and organ function. The negative consequences emerge later in life .

2.2.1.3. Free Radical Theory: Free radicals are extremely reactive molecules with an additional electron that can damage protein membranes, enzymes, and DNA. Antioxidants are produced by the body to scavenge free radicals.

2.2.1.4. Cross-Link Theory: According to this idea, aging causes cross-linking of bodily substances (proteins, lipids, nucleic acid, and carbohydrates). This results in aberrant metabolic activity and the accumulation of waste products in the cells. As a result, body tissues and structures perform poorly.

2.2.1.5.Wear-and-Tear Theory:The human body, like a machine, ultimately wears out due to reduction in cellular function, cell death, and mechanical injury and use, according to this idea (Nies, M. A., and McEwen, M. 2011).

2.2.2. Non-stochastic Theories:

2.2.2.1.Programmed Theory:Normal cells divide a specific number of times, according to this idea. The number of cell divisions is inversely proportional to the species' lifespan. Human cells duplicate 40 to 60 times before losing their ability to proliferate and then die.

2.2.2.2. Immunologic Theory:B and T cells are altered, resulting in the loss of a self-regulatory pattern between the body and the cell. Auto aggression occurs when the body's immune system misidentifies normal cells as alien and attacks them (Nies, M. A., and McEwen, M. 2011). The psyche is at the center of psychological theories of aging. Age-related changes show that aging is a process. It takes more time to establish good coping mechanisms. Jung's idea of individuality, in which the individual's mental attention shifts from the outer to the inside world, and developmental world theories are two major theories about this topic. Eric Erikson's theory of development claimed that a person needed to go through eight stages of life, completing particular development tasks that will make tasks easier to complete in the future (Harder, 2012).

2.3. Overview of Aging:

Aging is a normal part of life for all living organisms. The term "aging" is always used in a chronological sense. The amount of years a person has lived is referred to as chronological age. In the United States, an adult is considered to be a person who is the older than 18 or 21 years. A person who is 65 years or older is defined as being elderly. As a result, the elderly cannot be categorized as a single population subgroup. They are a diverse collection of elites who are young old (65 to 74 years old), middle old (75 to 84 years old), older old (85 to 99 years old) and oldest old (more than 100 years) in four different cohort groups (Ebersole *et al.* 2008).

Aging is a normal part of life that occurs as a result of progressive changes in organ metabolic activity and a reduction in cell regeneration capability. People's average life duration has been increasing around the world. Heredity, life style and a good diet, as well as quitting smoking and engaging in physical exercise, all have an impact on life expectancy.

Due to diminished physical and mental functioning, the elderly are more likely to suffer from a variety of health problems. Loneliness, a lack of sexual engagement, and chronic metabolic diseases are just a few of the factors that can lead to mental distress. These issues might have a negative impact on the elderly person's quality of life (Khaje-Bishak *et al.*, 2014). Because of physical changes that occur with age, such as decreased muscular strength and balance, as well as factors connected to quality of life, the aging process has increasingly become a focus of attention and concern. Loss of self-esteem and physical fitness, joint restrictions, muscular weakness, limitations in everyday activities, lack of balance when walking, social isolation, increasing dependency on others, and fear of falling are some of the repercussions of falling at this age. Aging and the gradual loss of function of numerous bodily systems cause many changes in health-related variables and situations that contribute to falls among the elderly (Mishra *et al.*, 2017). Typical changes associated with old age include declines in physical performance and cognitive function, which might limit one's ability to live independently. Falls, in particular, are a major concern (Ikegami *et al.*, 2019).

2.4. Overview of Falls:

Adult falls are a serious health concern, a well-known public health issue, and the leading cause of injury, hospitalization, disability, poor quality of life, depression, and death among older individuals (Vennu and Bindawas, 2014). Falls are a serious public health concern and one of the top causes of morbidity and death among the elderly in many countries. Falls and their repercussions have a negative influence on people's quality of life, particularly in the elderly. Each year, about 424,000 individuals die as a result of falls, according to the WHO (an average of 1160 people per day). Falls have become a significant public health concern because they cause physical harm, disability, and mortality, as well as affecting the quality of life of older persons (Kantow *et al.*, 2021).

2.4.1. Causes of Falls among the Elderly:

1. Any degree of sarcopenia or other motor dysfunction, as well as associated falls, pose significant challenges for institutionalized older persons (Tanimoto, 2014).
2. Falls occur in the general population as a result of decreases in lower-limb muscle strength and balance deterioration.

3. Cognitive impairment is also a danger to senior HRQOL and is thought to contribute to falls (Ikegami,2019).

2.4.2. Complications of fall:

1. Falls are the leading cause of unintentional mortality among the elderly.

2. Fractured bones

3. Phobia of falling

4. Long-term deterioration of physical, psychological, and functional capacities, which may have a significant influence on perceived health and QOL (Vaapio *et al.*, 2009).

5. Falls cause physiological and psychological consequences, such as a loss of confidence in one's ability to do everyday tasks, as well as social withdrawal or depression (Chang *et al.*, 2010).

2. 5.Quality of life in the elderly:

In the context of the aged population, QOL is becoming increasingly important. Given the significant prevalence of chronic diseases and their influence on lifestyle independence, it is critical to focus on quality of life rather than death rates (Bornet *et al.*, 2017). Due to the rise in the number of older people in many nations, it is critical to consider their basic requirements, related to physical, mental, social, emotional, and spiritual well-being, and to improve their quality of life (Cheraghi *et al.*, 2016). The quality of life in the elderly is influenced by a range of circumstances; for example, physical disability in older people causing limits to their everyday lives may be referred to as a negative event. Psychosocial resources can also have a significant impact on life quality, such as a loss in functionality. Although depressive illnesses can lower QOL, functional disability and other health problems can also lower it, while social support and communication can improve it (Bornet *et al.*, 2017).

According to most research, communities are not always arranged in a way to meet the needs of the elderly in order for them to remain socially engaged and active. Community health care facilities that integrate the six dimensions of health, on the other hand, will sustain a healthy older population. As a result, providing programs that engage and serve the elderly

will enhance extra health opportunities (Kang and Russ, 2018). "Health" is defined by the WHO as "a condition of complete physical, mental, and social well-being, rather than simply the absence of sickness or infirmity" (WHO, 2017). The domains of health are classified into six basic elements for healthier elderly which include: mental, physical, social, spiritual, environmental, and emotional health.

2.5.1. Physical health:

Health is a condition of well-being, but it also represents the complex interactions that occur in the aged, such as genetics, environment, and lifestyle. In general, the physical health of the elderly is influenced by two basic concepts. The first is the determinants of health. The second is interventions, which includes taking measures to improve one's health and providing all of the resources needed for these interventions (Barnett *et al.*, 2018).

The growth and maintenance of healthy behaviors are also influenced by the environment. Maintaining optimal health can be accomplished by eating a well-balanced diet, exercising regularly, and refraining from smoking, all of which assist in reducing the risk of chronic diseases and improving physical and mental capacities. Many diseases affect men and women due to gender differences and working circumstances. Elderly people who do a variety of jobs are healthier than those who do not. Clean water, air, housing, roads, healthy workplaces, and communities are all vital parts of the physical environment that contribute to excellent health in the elderly. Furthermore, health care services influence health through the usage of services that treat and prevent diseases (Barnett *et al.*, 2018).

When people reach the age of 65 or older, they can maintain an active lifestyle and improve their health and longevity. Furthermore, high levels of physical activity and fitness can help to improve bodily health. Some studies found that 150 minutes of moderate-intensity aerobic activity per week, such as walking 5-7 days per week, has a positive effect on longevity of roughly 4 years, as well as a lower chance of decreased mobility and disability among the elderly (McPhee *et al.*, 2016). Physical inactivity, which is equal to the consequences of consuming alcohol, smoking, or obesity, is the primary cause of poor physiological health in the elderly, which leads to aging (Sirlunpli *et al.*, 2014).

2.5.2. Emotional health:

An emotion is an internal cognitive reaction that involves different feelings like love, happiness, fear, hatred, or anger, and can be caused by behavioral responses such as bodily expressions, or physiological responses of heart rate or blood pressure, or cognitive responses such as thoughts, or as an outcome of other factors like retirement, death of friends, or being

widowed, all of which can affect the health status of the elderly in one way or another (Yadav and Chanana, 2018).

2.5.3. Mental health:

Mental health has an impact not just on the development of the aged, but also on the growth of most societies. In other words, this element of health often refers to the elderly person's ability to comprehend reality and cope with the demands of daily life by putting in place preventive measures to decrease or avoid the onset of mental problems (Wing-man, 2017). WHO defined mental health as "a state of well-being in which each individual fulfills their own potential, is able to cope with everyday challenges, is able to work productively and fruitfully, and is able to contribute to their community" (WHO, 2004)? Natural aging, according to several studies, causes physiological changes in the brain that affect some areas of cognitive perception, working memory, and especially executive function speed. This deterioration is caused mostly by a deficiency in the frontal cortex of the brain, which leads to premature atrophy in normal aging (Joubert and Chainay, 2018). The high prevalence of chronic sensory impairment, cognitive decline, and social isolation are all variables that might lead to cognitive impairment in the elderly, making them reliant on others for daily care (Melo *et al.*, 2017).

At the same time, there is a surge in interest among the elderly in cognitive activities and interventions aimed at improving and maintaining brain function. Many recent studies focused on social participation for the purposes of maintaining or improving cognition, as well as lifestyle independence. Lifestyle strategies, which include appropriate mental and physical activities, have made social participation for the purposes of maintaining or improving cognition and lifestyle independence the focus of many recent studies (Shah *et al.*, 2017). In healthy senior people, regularly engaging in mentally challenging activities such as leisure time activities is linked to a lower incidence of moderate cognitive impairment. According to the findings of a study conducted in Minnesota, those who reported doing leisure activities twice a week were 22% less likely to do so after a four-year follow-up period than those who reported doing them twice a month (Krell-roesch *et al.*, 2018). Physical activity increases blood flow in the body, which increases pulse rate and activates hormones that improve mood according to several studies. Resistance training affects insulin function and helps to raise bone density and metabolic rate (Harris, 2018).

2.5.4. Social health:

The connection between individuals and their social-relationship or interpersonal networks with others is known as social relationships. In this context, social activities may be classified based on where they occur, such as job- or community-related activities through paid or unpaid employment (Saito *et al.*, 2018). The transition in living settings from late adulthood to elderly age is followed by a change in how people work as they reach legal retirement age, which may include the relinquishment or disruption of former employment and social duties (Vozikaki *et al.*, 2018).

The research backs up the social interaction that exists between people's health, working conditions, and the character of their lives, which shapes their social communication. These interactions protect the elderly from health problems by strengthening psychological resources like self-efficacy, improving physiological function like the immune system, and improving health behaviors like quitting smoking (Saito *et al.*, 2018). The elderly carrying out daily activities improves their physical ability to carry out these activities and enjoy free time, both of which are important components of their lives at this stage (Rondón Garcla and Ramirez Navarro, 2018). The determinants of social health, such as socioeconomic status, emotional suffering and stress as a result of the death of a family member or friend, and the resulting loss of identity, are likely to have an impact on aged health. Most cultures require power and social support as a result of these determinants that promote or impair the health of individuals and communities (Barnmett *et al.*, 2018).

Furthermore, the social aspect of the elderly person's quality of life is a significant and useful component. The results of a study conducted to assess the health and functional status in general of 500 elderly people in Granada, Spain, revealed statistical significance for the following variables: health (0.001), functional activity (0.0021), leisure (0.002), and environmental quality (0.0026), but no significance for income status. These significant variables had the greatest influence on the elderly in both the experimental and control groups. As a result, social ties and social contacts can be linked to the development of health and well-being of the elderly (Randon Garcia and Ramirez Navarro, 2018).

2.5.5. Environmental health:

After the age of 65, a complex process begins in the body of the elderly, which is influenced by both environmental and personal factors. The urban environment and its dimensions are becoming increasingly important as the world becomes more urbanized. The

physical, biological, and socioeconomic characteristics of the urban environment that affect the health of the elderly can be divided into three categories (Alidoust ,*et al.*, 2014).

The term "physical environment" refers to all parts of the natural and built environment that impacts the health of the elderly. People, as is well known, are constantly exposed to the environment in which they work and live. If the environment is bad, it can have a detrimental influence on the community's quality of life. Water and air quality, green space, food safety, and exposure to harmful and toxic compounds such as lead are all important factors to consider (Casey ,*et al.*, 2017). Air pollution can worsen chronic lung and heart problems, resulting in increased visits to health care providers, drugs usage, and recurring hospitalizations in emergency rooms and hospitals, as well as mortality(Wallman,2016). Green spaces are important features of the current world that have a big impact on the various workouts by the elderly (Benton ,*et al.*, 2018).

We aimed to investigate the influence of the physical environment in promoting older people's social lives. The utilization of green areas by the elderly was found to increase physical activity and improve other elements of their well-being, according to the study. People restrict their actions in general because they are insecure. Safety is a component of the interactive environment that helps the elderly participate in social communication and has a greater influence on their social life. This mistrust is frequently connected with others, and the dread of criminality can isolate the elderly, limiting their social connection and involvement in society (Alidoust ,*et al.*, 2014) .

2.5.6. Spiritual health:

Religion and spirituality in the elderly are important topics, especially because they can help people stay well and recover from disease. Based on this premise and its significance in the lives of the old, gerontology experts have spent the last 30 years studying the link between spirituality, religion, and health (Agli ,*et al.*, 2015). Adherence to religion can make elderly individuals feel comfortable and content in their lives. As a result, this issue is vast since it encompasses activities such as meditation, prayer, and the formation of bonds outside of the family via the association of elderly people with greater spiritual circles (Zimmer ,*et al.*, 2016). Indeed, most research revealed that various parts of spirituality and religion might improve cognitive performance, protect physical health, lower risk of depression and psychological distress, and reduce morbidity and mortality (Agli ,*et al.*, 2015).

The elderly are particularly affected by the change and complexity involved in spirituality, religion, or belief. According to some studies, many elderly people have a

stronger faith or are more interested in religious rituals that enrich their emotional and psychological aspects. For example, when the elderly are eager to pray on a regular basis, it gives them more health and vitality than others and allows them to live longer (Malone and Dadswell, 2018). In the same way, one study found that spirituality and religion had a statistical association with lower blood pressure, cholesterol, heart disease, stroke, myocardial infarction, and decreased pain in cancer patients (Chaves and Gil, 2015). Most religious organizations, such as mosques, temples, and churches, play an important role in integrating the elderly into society and fostering an active lifestyle across the world. Places of worship, in particular, are frequently used as a starting point for community-building activities such as volunteer work, religious celebrations, and memorial services for people who have died (Zimmer, *et al.* 2016).



MATERIALS AND METHODS

This chapter deals with design, administration, sample and setting, instrument, pilot, data collection, and data analysis of the research.

3.1. Design of the Study:

A descriptive cross-sectional design was carried out from December 2020 to May 2022. This study design was chosen as it provides measurement of current status of quality of life without intention of follow up. This study design enables collection of data about exposure and outcome at the same time.

3.2. Study population:

3.2.1 Inclusion criteria:

- This study includes elderly patients aged 65 and above
- Of any gender
- Those who fell and came to receive treatment in the orthopedic consultant, orthopedic surgery and emergency unit.
- Our time interval in determining the patient's quality of life starts with the application to the hospital and continues for six months.
- There is no distinction between indoor and outdoor falls, covers all falls

3.2.2 Exclusion criteria:

Patients with mental illness that affects their comprehension ability or who were unable to read the questionnaire were excluded.

3.3. Sample and Setting:

A universal sampling method was adopted in this study. All elderly patients who applied to attend Ramadi Teaching Hospital in Al Anbar, Iraq, due to a fall in the last 6 months were included in the sample. At the beginning of the study, the universe size was determined as the number attending in 1 month x 3 month = total number.

The number of elderly people who were admitted to hospital due to falls in October 2020 were counted and it was 30.

30 patients x 3 months = 90; the total universe

As the universe consisted of 90 elderly people, the sample size was calculated as 86 with a 95% confidence interval and a 5% margin of error.

Although the number of samples was calculated as 86, as many participants as the universe were reached in order for the study to have higher power.

Table 3.1: Study Setting (n=90).

Months	number of samples
January	20
February	15
March	10
April	20
May	15
June	10
Total number of samples	90

Question number 23 was included in the questionnaire; “when were you discharged from the hospital?” and the answers were between 1 week to 6 months.

Through the web sat found in the two sources, the geographical location of Al-Anbar Governorate is an Iraqi governorate located in western Iraq. It is one of the largest governorates of Iraq by area, as it constitutes the equivalent of a third (1/3) of the area of Iraq. It has an area of 138,500 square kilometers, and a population of 1,600,000 (Anbar Governorate Office, 2022). It is bordered to the north by the governorates of Salah al-Din and Nineveh, and the Syrian Republic to the northwest. Jordan from the west. Baghdad province from the east. To the south is the Kingdom of Saudi Arabia, and to the southeast are the governorates of Karbala and Najaf. Its elderly population is 39,476 (2.41%) the number of hospitals (public + private) is 15, and there are 185 primary health care centers (Central Statistical Organization, 2018).

3.4. Instrument:

A closed questionnaire was used to complete this stage of the study. The questionnaire was adopted from a previously-published study. Permission was obtained from the main author to use the questionnaire in the current study.

3.4.1 Questionnaire :

Section 1: In the first part of the questionnaire, there are a total of 25 questions about demographic, economic, social and falling.

There are questions about the medical processes of the participants after experiencing a fall. Questions were designed by researchers in this section.

Section 2: Covers Quality of life: The measure of QOL includes General Life, Physical health, Emotional and Psychological, Social relations environment, and Spiritual. The validity and reliability study of this scale was performed and Alpha Cranach was found as 0.88 in Iraq (Al Abedi and Naji, 2020).

This part occurs with questions from question number 26 to question number 56.

3.4.2 Reliability of the Questionnaire:

Reliability is concerned with the consistency and dependability of the research instrument. Determination of reliability of the questionnaire was based on Cranach's Alpha reliability (Table 3.2). The degree of reliability is usually determined by the use of correlation procedures. Reliability coefficients normally range from (-1.00) through (0.00) to (+1.00), and reliability coefficients above 70 are considered satisfactory (Polit and Hungler, 1999).

Table 3.2. Reliability coefficients for the questionnaire (pilot study, n=10):

Reliability Coefficients		Standard lower bound	Actual values
Alpha (Cranach)	Pilot Study	0.70	0.842
	Study Sample	0.70	0.911

This table statistically shows the reliability coefficient for the instrument in the present study. The results show that the Cranach's alpha correlation value for the questionnaire was acceptable, and there was very good acceptance level of reliability for all of the scales. The results of the pilot study revealed that the questionnaire is acceptable and reliable to study the phenomenon in the same population at any time in the future.

3.3.3 Validity of Questionnaire:

The questionnaire was considered valid and reliable based on the published report for the original study that used the questionnaire.

3.4. Data collection method:

The researcher approached patients during their regular visits to the outpatient or specialist clinic. Some of the patients were interviewed at their homes after they provided their residential address, as well as their voluntary consent to participate in the interview. The purpose of the study was explained to the participants. They were informed that participation was voluntary. After obtaining written informed consent, the questions were introduced to the participant and collected on the spot. The investigator remained close to the participant in case clarification was needed.

3.5. Research variables in the questionnaire:

Dependent Variable: Quality of life

Independent Variable(s): socioeconomic conditions that determine the impact of the fall on elderly

3.6. Data Analysis:

3.6.1. Statistical Analysis:

Data were analyzed by using Statistical package for Social Sciences (SPSS) version 24.0 statistical analysis system and Excel.

The following statistical data analysis approaches were used in order to analyze and assess the results of the study:

3.6.2. Descriptive data analysis:

1. Statistical tables (frequencies and percent).

2. Arithmetic mean and Mean of score: (MS).

3. Standard Deviation: Standard deviation is used to measure variability when interval or ratio data are obtained. This statistic describes how values vary about the mean of the distribution.

Evaluation of quality of life was rated according to the mean of score to five levels:

Very Poor: (1.00 – 1.80)

Poor: (1.81 – 2.60)

Fair: (2.61 – 3.40)

Good: (3.41-4.20)

Very Good: (4.21-5.00) (Al Abedi and Naji, 2020).

3.6.3. Inferential data analysis:

This was used to accept or reject the statistical hypotheses, which included the following:

1. Pearson's correlation coefficient was measured to determine the relationship between the studied scales and the different socio-demographic characteristics and the correlations between quality of life and clinical characteristics.

2. Alpha Cranach reliability coefficient (RC) for the pilot study was used to estimate the internal consistency of the study instrument.

3. Student t-test for equality of means of two independent groups and equality of means of paired sample t-test for equality of variances (testing coincidences for the difference of variance's parameter).

4. Levine's test to test the homogeneity of variances for equality of variances (testing coincidences for the difference of variance of parameters).

5. Analysis of variance (ANOVA) for equality of means (testing of coincidence for the different of mean's parameter).

6. Multiple Regression to determine the impact of the independent variable (injury after falling and hospitalization) upon the dependent variable (quality of life).

3.7. Ethical Dimension:

Ethical approval was obtained from the Ethics Committee of the Scientific Research Committee of the Ministry of Health of Al Anbar to carry out the research (No: 2, date 11-1-2021) (Appendix 1). Additional approval was obtained from Cankar Karate in University Ethics Committee on January 5th, 2021.

RESULTS

This chapter presents the findings of the data analysis systematically in tables and their correspondence with the objectives of the study.

Table (4.1): Distribution of socio-demographic characteristics of the elderly in the study sample (N=90 elderly)

Socio-demographic characteristics		Frequency	Percent
Age of Elderly person	65-74 years	51	56.7
	75-84 years	29	32.2
	≥ 85	10	11.1
Gender	Male	42	46.7
	Female	48	53.3
Marital status	Married	67	74.4
	Widowed	15	16.7
	Divorced	5	5.6
	Single	3	3.3
Educational status	Illiterate	28	31.1
	Literate	23	25.6
	Primary School	15	16.7
	Middle School	5	5.6
	High School	10	11.1
	University	9	10.0
Body mass index (BMI)	Underweight ≤ 18.5	4	4.4
	Normal weight = 18.5–24.9	35	38.9
	Overweight = 25–29.9	17	18.9

	Obesity ≥ 30	34	37.8
Lives at home	Alone	1	1.1
	Wife/Husband	9	10.0
	Wife/Husband and children	59	65.6
	Children	19	21.1
	Other	2	2.2
Economic situation	No income	37	41.1
	Elderly pension	3	3.3
	Disabled pension	3	3.3
	Receiving salary from spouse	3	3.3
	Pension	43	47.8
	Other	1	1.1
Do you have any other income?	No	52	57.8
	Rent	34	37.8
	Assistance	4	4.4
Is your income sufficient to meet your needs?	Yes	35	38.9
	Sometimes	24	26.7
	Not Enough	31	34.4

N=Sample size

Table (4-1) revealed that half of elderly (51; 56.7%) in the study sample were within the 65-74-year age group, while 48(53.3%) participants in the sample were female. Almost three quarters of the study sample were married, as the number reached 67(74.4%). Concerning the educational level, half of elderly were illiterate and literate (51; 56.7%). Body mass index showed one third of participants had normal weight (35; 38.9%) and another third (34; 37.8%) of the elderly were obese.

In relation to people living at home, two thirds of the elderly in the study sample (59; 65.6%) lived with spouse and children. The economic situation of elderly found that 43 people in the study sample (47.8%) had pension, 37(41.1%) had no income, and more than

half of them (52; 57.8%) did not have any other income. Regarding whether income was sufficient to meet needs, 35 participants stated it was (38.9%) and 31(34.4%) did not have enough income.

Table (4.2): Distribution of clinical characteristics of the elderly in the study sample (N=90 elderly):

Clinical characteristics		Frequency	Percent
Do you have a chronic disease that you are constantly being treated for?	Yes	59	65.6
	No	31	34.4
Types of chronic disease	Hypertension	33	36.7
	Diabetes	4	4.4
	Parkinson	1	1.1
	Asthma	4	4.4
	Hypertension & Diabetes	11	12.2
	Hypertension & Asthma	2	2.2
	Hypertension & Breast cancer	1	1.1
	Hypertension , Diabetes and Asthma	1	1.1
	Diabetes and Asthma	1	1.1
	Other	1	1.1
How many drugs do you use regularly?	None	31	34.5
	One	4	4.4
	Two	26	28.9
	Three	16	17.8
	Four	13	14.4
Have you fallen in the last 6	Yes	90	100.0

months?	No		0	0.0
Where did you fall?	Inside home		65	72.2
	Outside home		25	27.8
Have you had any problems/injuries due to falling?	Yes		90	100.0
	No		0	0.0
What kind of problem/injury did you experience?	Fracture		35	38.9
	Dislocation		8	8.9
	Sprain		19	21.1
	Swelling		20	22.2
	Tendon damage		8	8.9
Did you go to the doctor because of the fall you experienced?	Yes		90	100.0
	No		0	0.0
Which service or clinic?	Orthopedic Consulting Clinic		16	17.8
	Orthopedic Surgery		22	24.4
	Emergency		52	57.8
	Other			
Have you been in the hospital?	Yes		41	45.6
	No		49	54.4
	If yes How many days?	(1-3days)	16	17.8
		(4-6 days	6	6.7
		(8-10 days)	18	20.0
		(≥ 2weeks)	1	1.1
Have you had an operation or	Yes		40	44.4

cast?	No	50	55.6
What operation did you have?	Cast for bone fracture	16	17.8
	Open reduction, and internal fixation	14	15.6
	Open reduction, and external fixation	10	11.1
When were you discharged?	Not	3	3.3
	One week	14	15.6
	Fifteen days	19	21.1
	One month	14	15.6
	Three months	25	27.8
	Six months	15	16.7
Any injury after falling?	Yes	13	14.4
	No	77	85.6
Have you received post-injury rehabilitation services?	Yes	19	21.1
	No	71	78.9

N=Sample size

Findings in Table (4-2) revealed that two thirds (59; 65.6%) of elderly in the study sample had a chronic disease that required constant treatment and one third of them were suffering from hypertension (33; 36.7%). Elderly used two drugs regularly (26; 28.9%), the majority of participants (88; 97.8%) had fallen within the last 6 months, and most of them fell inside the home (65; 72.2%). All of the elderly (90; 100%) had problems/injuries due to falling, and the kinds of problem/injury they experience included fractures (35; 38.9%), swelling (20; 22.2%), and sprains (19; 21.1%). They all went to the doctor because of the fall (90; 100%). Concerning the service or clinic, half of the elderly were admitted as emergency cases (52; 57.8%). Among the elderly, 41 were hospitalized (45.6%), and durations of hospitalization were 1-3days, 4-6days, 8-10 days, and ≥ 2 weeks with numbers of 16(17.8%), 6(6.7%), 18(20%) and 1(1.1%), respectively. The number of elderly who had an operation or casting was 40(44.4%). These patients had the following operations; 16(17.8%)

had casting bone fractures, 14(15.6%) had open reduction and internal fixation, and 10(11.1%) had open reduction and external fixation. Regarding discharge of the elderly, most stayed in hospital for three months (25; 27.8%). The majority of study sample did not have any injury after falling (77; 85.6%), while 71(78.9%) received post-injury rehabilitation services.

Table (4.3): Overall evaluation of quality of life score for the elderly:

Quality of Life score	Frequency	Percentage
Very Poor: (1.00 – 1.80)	0	0.0
Poor: (1.81 – 2.60)	12	13.3
Fair: (2.61 – 3.40)	53	58.9
Good: (3.41-4.20)	25	27.8
Very Good: (4.21-5.00)	0	0.0
Total	90	100
$\bar{x} \pm \text{Std. Dev.}$	3.17 ± 0.473	

$\bar{x} \pm \text{Std. Dev.}$, =Arithmetic Mean ($\bar{x}$)and Std. Dev. = Standard Deviation;

This table shows that more of half of participants among the elderly had fair level of quality of life (53; 58.9%), with arithmetic mean and standard division 3.17 ± 0.473 , while 25(27.8%) of the elderly evaluated their quality of life as being at good level.

Table (4.4): Evaluation of main domains related to quality of life:

Main Domains Related To Quality Of Life	Mean	Std. Deviation	Eva.
General Life	3.30	0.736	F
Physical health	2.62	0.362	F
Emotional and Psychological	3.20	0.619	F
Social relations	3.45	0.698	G
Environment	2.66	0.619	F
Spiritual	3.80	0.674	G

Std. = Standard; Eva. =Evaluation, Evaluation Levels: Very Poor: (1.00 – 1.80); Poor: (1.81 – 2.60); Fair: (2.61 – 3.40); Good: (3.41-4.20); and Very Good: (4.21-5.00).

Results in the table above showed domains of quality of life were evaluated at fair level by participants in the study sample (general life, physical health, emotional and psychological, and environment), while facets of quality of life were evaluated at good level by the elderly in the sample(social relations & spiritual).

Table (4.5): Evaluation of all items related to quality of life for the study sample :

Main Domains	Items Related Quality of Life* No=90	M.S.	S.D.	Eva.
General Life	1. How would you rate your quality of life?	3.28	0.750	F
	2. Does life give you optimism?	3.44	0.809	G
	3. How satisfied are you with your health?	3.18	0.919	F
Physical Health	4. Do you feel that physical pain prevents you from doing what you need to do?	2.52	1.220	P
	5. Do you need medical care to get on with your life?	2.09	0.882	P
	6. Do you have enough energy for life every day?	2.84	0.860	F
	7. How well can you navigate?	2.64	0.878	F
	8. How satisfied are you with your sleep?	2.99	0.954	F
	9. How satisfied are you with your ability to perform activities of daily living?	2.78	0.832	F
	10. How satisfied are you with your physical activity level?	2.50	0.951	P
Emotional and Psychological	11. How many opportunities do you have to be loved?	3.02	0.807	F
	12. To what extent do you feel a sense of friendship in your life?	3.28	0.735	F
	13. To what extent can you simply focus your mind?	3.04	0.820	F
	14. Can you accept your bodily appearance?	3.27	0.897	F
	15. How satisfied are you with yourself?	3.48	0.796	G
	16. To what extent do you experience love in your life?	3.13	0.657	F
Social Relation	17. How satisfied are you with your relationship with family members?	3.79	0.786	G
	18. How satisfied are you with your sex life?	3.01	0.966	F

	19. How satisfied are you with the support you receive from your friends?	3.54	0.737	G
Environment	20. How safe do you feel in your daily life?	2.71	0.811	F
	21. How healthy is your physical environment, such as eating healthy or exercising?	2.64	0.812	F
	22. Are you able to meet your daily needs such as shopping?	2.41	1.004	P
	23. What is the suitability of your healthcare environment for a better life?	2.57	0.794	P
	24. To what extent do you have opportunities for leisure activities?	2.51	0.864	P
	25. How satisfied are you with the conditions where you live?	2.86	0.801	F
	26. How satisfied are you with your access to healthcare?	2.91	0.932	F
	27. How satisfied are you with your transport?	3.02	0.749	F
spiritual	28. Do your personal beliefs add meaning to your life?	4.01	0.757	G
	29. How meaningful do you feel your life is?	3.98	0.764	G
	30. To what extent do your personal beliefs give you the strength to face challenges?	3.91	0.681	G
	31. To what extent do your personal beliefs help you understand life's challenges?	4.01	0.645	G

No: number of sample, M.S. =Mean of score, Std. Dev. = Standard Deviation, Eva. = Evaluation, Evaluation Levels: Very Poor: (1.00 – 1.80); Poor: (1.81 – 2.60); Fair: (2.61 – 3.40); Good: (3.41- 4.20); and Very Good: (4.21-5.00).

Table(4– 5) shows that most items were evaluated at fair level for quality of life of the elderly, while item(2) which related to general life; item (15) about emotional and psychological aspects; items (17&19) concerning social relations; and items (28, 29, 30, &31) regarding the spiritual facet were evaluated at good level. While items (4, 5&10) which related to physical health and items (22, 23& 24) concerning the environment were evaluated at poor level for quality of life.

Table (4.6): Relation between the quality of life and socio-demographic characteristics:

Socio-demographic characteristics		Freq.	Mean	Std. Dev.	df	F	Sig.
Age of Elderly	65-74 years	51	3.34	0.485	87	9.314	0.000
	75-84 years	29	3.02	0.364			
	≥ 85	10	2.79	0.330			
Gender	Male	42	3.09	0.454	88	t=1.517	0.133
	Female	48	3.24	0.484			
Marital status	Married	67	3.25	0.477	86	2.679	0.052
	Widowed	15	2.91	0.346			
	Divorced	5	2.93	0.616			
	Single	3	3.14	0.161			
Education status	Illiterate	28	2.97	0.390	84	5.376	0.000
	Literate	23	3.18	0.531			
	Primary School	15	3.01	0.375			
	Middle School	5	3.27	0.439			
	High School	10	3.42	0.309			
	University	9	3.72	0.387			
Body mass index (BMI)	Underweight = <18.5	4	3.14	0.345	86	1.328	0.270
	Normal weight=18.5–24.9	35	3.28	0.494			
	Overweight = 25–29.9	17	3.19	0.527			
	Obesity = BMI ≥ 30	34	3.06	0.425			
Live at home	Alone	1	3.00	0.0	85	3.096	0.020

	Wife/Husband	9	3.38	0.736			
	Wife/Husband and children	59	3.24	0.437			
	Children	19	2.86	0.333			
	Other	2	3.21	0.152			
Economic situation	No income	37	3.07	0.394	84	4.408	0.001
	Elderly pension	3	3.19	0.408			
	Disabled pension	3	2.34	0.240			
	Receiving salary from spouse	3	3.08	0.396			
	Pension	43	3.34	0.474			
	Other	1	2.45	0.0			
Do you have any other income?	No	52	3.19	0.487	87	1.179	0.312
	Rent	34	3.18	0.464			
	Assistance	4	2.82	0.260			
Is your income sufficient to meet your needs?	Yes	35	3.32	0.466	87	4.752	0.011
	Sometimes	24	3.22	0.372			
	Not Enough	31	2.98	0.497			

$\chi^2_{\text{obs.}}$ = chi-square observed, χ^2_{crit} = chi-square critical, F: frequency, DF= degree of freedom, p = probability value, $P \leq 0.05$ = significant, $P > 0.05$ = no significant.

Table (4-6) shows there was a significant relationship between elderly quality of life and their socio-demographic characteristics (age, educational status, residency, economic situation, & income sufficient to meet your needs) at $P < 0.05$. Some variables (gender, marital status, body mass index & other income) did not have significant relationships with elderly quality of life at $P > 0.05$, when analyzed by ANOVA and t-test.

Table (4.7): Correlation between quality of life and clinical characteristics:

Clinical characteristics	Correlations		
	N	Pearson Correlation	Sig. (2-tailed)
Do you have a chronic disease that you are constantly being treated for?	90	0.391**	0.000
Types of chronic disease	90	-0.352**	0.001
How many drugs do you use regularly?	90	-0.485**	0.028
Have you fallen in the last 6 months?	90	0.060	0.574
Where did you fall?	90	0.102	0.337
What kind of problem/injury did you experience?	90	0.509**	0.000
Which service or clinic?	90	0.181	0.087
Have you been in the hospital?	90	0.497**	0.000
If yes, how many days?	90	-0.484**	0.000
Have you had an operation or casting?	90	0.564**	0.000
What operation did you have?	90	-0.538**	0.000
When were you discharged?	90	-0.373**	0.000
Any injury after falling?	90	0.356**	0.001
Have you received post-injury rehabilitation services?	90	0.263*	0.012

When data in the table above are analyzed, there was a high statistically significant association between quality of life and clinical characteristics related to elderly at $P < 0.01$. Some clinical characteristics (have you fallen in the last 6 months? where did you fall? & which service or clinic?) had insignificant correlation with quality of life at $P > 0.05$.

Table (4.8): Difference in quality of life based on kind of problem/injury:

Kind of Problem or Injury	Descriptive statistic			ANOVA		
	N	Mean	Std. Deviation	Df	f	Sig.
Fracture	35	2.85 ^a	0.341	85	10.239	0.000
Dislocation	8	3.43 ^b	0.289			
Sprain	19	3.32 ^b	0.488			
Swelling	20	3.35 ^b	0.442			
Tendon damage	8	3.56 ^b	0.366			

Total	90	3.17	0.473			
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ANOVA: Analysis of Variance; N: Number of frequencies; Std.: Standard; df: degree of freedom; f: f-test; Sig.: Significant

ANOVA was used in order to identify if there were any differences in quality of life based on kind of problem/injury). Results indicated that there was a high significant difference in quality of life based on kind of problem or injury. The mean of quality of life of people with fracture problems has a lower mean than other types of problems ($p < 0.05$).

Table (4.9): Difference in quality of life based on discharge duration:

Discharged	Descriptive statistic			ANOVA		
	N	Mean	Std. Deviation	Df	f	Sig.
None	3	3.78 ^b	0.257	84	3.397	0.008
One week	14	3.30 ^b	0.585			
Fifteen days	19	3.35 ^b	0.419			
One month	14	3.10 ^b	0.518			
Three months	25	3.10 ^b	0.403			
Six months	15	2.89 ^a	0.323			
Total	90	3.17	0.473			

ANOVA: Analysis of Variance; N: Number of frequencies; Std.: Standard; df: degree of freedom; f: f-test; Sig.: Significant

Results in Table (4 -9) indicated that there was a high significant difference in quality of life based on discharge. People with a discharge period of more than 6 months have a lower mean of quality of life than those with a discharge time of less than 6 months ($p < 0.05$).

Table (4.10): Difference in quality of life based on service rehabilitation:

Service Rehabilitation	Descriptive statistic			t-test for Equality of Means		
	N	Mean	Std. Deviation	Df	T	Sig.
Yes	19	2.93	0.443	88	6.556	0.012
No	71	3.24	0.463			
Total	90	3.17	0.473			

N: Number of frequencies; Std.: Standard; df: degree of freedom; t: t-test; Sig.: Significant

ANOVA was used in order to determine if there were any differences in quality of life based on service rehabilitation. Results showed that there was a statistically significant difference in quality of life based on service rehabilitation.

Table (4.11): Difference in quality of life based on hospitalization:

Hospitalization	Descriptive statistic			t-test for Equality of Means		
	N	Mean	Std. Deviation	Df	T	Sig.
Yes	41	2.92	0.355	88	5.369	0.000
No	49	3.39	0.456			
Total	90	3.17	0.473			

N: Number of frequencies; Std.: Standard; df: degree of freedom; t: t-test; Sig.: Significant

Analysis of data in the above table showed a high significant difference between quality of life and hospitalization related to elderly at $P < 0.01$, when analyzed with ANOVA and t-test.

Table (4.12): Difference in quality of life based on having an operation:

Have you had an operation	Descriptive statistic			t-test for Equality of Means		
	N	Mean	Std. Deviation	Df	t	Sig.
Yes	40	2.88	0.342	88	6.399	0.000
No	50	3.41	0.430			
Total	90	3.17	0.473			

N: Number of frequencies; Std.: Standard; df: degree of freedom; t: t-test; Sig.: Significant

Table (4-12) displays the high statistically significant difference between quality of life and having an operation for the elderly at $P < 0.01$, when analyzed with ANOVA and t-test.

Table (4.13): Impact of the independent variable (injury after falling and hospitalization) on the dependent variable (quality of life) according to regression:

Dependent Variable	Independent Variable			Model		ANOVA		
Quality of Life Y	Coefficients value	Injury After Falling X ₁	Hospitalization X ₂			df	F	Sig.
B Unstandardized	2.007	0.293	0.403	R	0.538	87	17.732	0.000
T-test	8.466	2.290	4.466	R ²	0.290			
Sig.	0.000	0.024	0.000	R ² ₂	0.273			

R: Sample regression, df: Degree of Freedom, sig: Significant, F: F- Test, Y: Quality of Life, X₁: injury after falling, X₂: Hospitalization, R²: Regression Square, R²₂: Adjusted Regression Square

Regression equation $\longrightarrow Y = 2.007 + 0.293X_1 + 0.403X_2$

Y (quality of life) = Error (Residual) + Injury after Falling (X₁) + Hospitalization (X₂)

This table shows a statistically significant difference between dependent variable of quality of life and independent variable of injury after falling and hospitalization when analyzed by t-test and ANOVA. The regression coefficients were 0.538, R Square was 0.290 and Adjusted R Square was 0.273. The effect of the independent variable (injury after falling and hospitalization) on QOL was 27% and the remaining 73% is due to other factors, such as health status, age, economic status, monthly income, culture and religion.

Table (4.14): Difference in quality of life based on number of drugs used regularly:

Number Drugs use	Quality of Life			ANOVA					
	N	Mean	Std.Devia tion	S.O.V.	Sum of Squares	Df	Mean Square	F	Sig.
None	31	3.43 ^b	0.358	Between Groups	7.281	4	2.427	7.49 7	0.000
One	4	3.40 ^b	0.351						
Two	26	3.16 ^b	0.499	Within Groups	27.841	85	0.324		
Three	29	2.83 ^a	0.339						

or more				Total	35.112	89			
Total	90	3.17	0.473						

The results of Table (4-14) indicate that there was a high significant difference between quality of life of the elderly and the number of drugs used regularly ($P < 0.05$). The results in the table also indicate that the elderly who did not use drugs had a better quality of life than those who used drugs when analyzed by ANOVA. People who use three or more drugs have a lower mean of quality of life than those who use less than three drugs ($p < 0.05$)

Table (4.15): Difference in quality of life based on duration of hospitalization:

Duration of Hospitalization	Quality of Life			ANOVA					
	N	Mean	Std.Deviation	S.O.V.	Sum of Squares	Df	Mean Square	F	Sig.
None	49	3.39 ^b	0.456	Between Groups	8.322	4	2.774	8.901	0.000
(1-3days)	16	3.04 ^b	0.380						
(4-6 days)	6	2.76 ^a	0.371	Within Groups	26.801	85	0.312		
(8-10 days or more)	19	2.84 ^a	0.375						
Total	90	3.17	0.473	Total	35.122	89			

Results in Table (4-15) showed there was a highly significant difference among duration of hospitalization ($p < 0.01$). The results indicate that the shorter the hospitalization period, the better the quality of life when analyzed by ANOVA. The mean quality of life of people who were hospitalized for 4 days or more had a lower mean than those who used less than 4 days ($p < 0.05$).

Table (4.16): Difference in quality of life based on chronic diseases:

Chronic diseases	Descriptive statistic			t-test for Equality of Means		
	N	Mean	Std. Deviation	Df	T	Sig.
Yes	59	3.04	0.475	88	3.981	0.000
No	31	3.43	0.358			
Total	90	3.17	0.473			

N: Number of frequencies; Std.: Standard; df: degree of freedom; t: t-test; Sig.: Significant

ANOVA and the Independent Sample T test were used in order to identify if there were any differences in quality of life based on chronic diseases. Results showed that there was a high statistically significant difference in quality of life based on chronic diseases.

Table (4.17): The Chronic diseases Frequency and Percent:

chronic diseases		Frequency	Percent
What is chronic disease you have	None	36	40,0
	Hypertension	33	36,7
	Diabetes	4	4,4
	Parkinson	1	1,1
	Asthma	4	4,4
	Other	1	1,1
	Hypertension & Diabetes	11	12,2
	Total	90	100,0

Table (4.18): Impact of the independent variable (chronic diseases) on the dependent variable (quality of life) according to regression:

Dependent Variable	B Unstandardized	T-test	Sig.	Model		ANOVA		
Independent Variable						Df	F	Sig.
Intercept	3.194	3973.00	0.000					
Age	-0.190	1.870	0.065	R	0.712	65	2.79	0.000
Economic situation	0.017	0.446	0.657	R ²	0.508			
How many drugs do you use regularly	-0.121	-0.967	0.337	R ⁻²	0.498			
When were you discharged?	-0.024	-0.453	0.652					
If yes How many days?	0.134	1.190	0.239					
Education status								
literate – illiterate	-0.017	-0.103	0.918					

primary school – illiterate	-0.076	-0.391	0.697	
Middle School – illiterate	-0.277	-0.847	0.400	
High school – illiterate	0.060	0.233	0.817	
University – illiterate	0.498	1.750	0.084	
Who do you live with				
Wife/ Husband – Alone	-0.168	-0.255	0.800	
Wife / Husband and children – Alone	-0.156	-0.248	0.805	
Children – Alone	-0.291	-0.461	0.646	
Other – Alone	-0.556	-0.730	0.468	
Is your income sufficient to meet your needs				
Sometimes – Yes	0.147	0.858	0.394	
Not Enough – Yes	0.027	0.156	0.877	
What kind of problem/injury did you experience?				
Dislocation – Fracture	0.071	0.228	0.821	
Sprain – Fracture	-0.135	-0.464	0.644	
Swelling – Fracture	-0.166	-0.585	0.560	
Tendon damage – Fracture	0.098	0.335	0.739	
Have you received post-injury rehabilitation services?				
No – Yes	0.144	0.856	0.395	
Have you been in the hospital?				
No – Yes	0.305	1.130	0.261	
Have you had an operation?				
No – Yes	0.431	1.590	0.116	

Do you have a chronic disease that you are constantly being treated for				
No – Yes	-0.063	-0.189	0.850	

R: Sample regression.**df:** Degree of Freedom. **sig:** Significant. **F:** F- Test. **Y:** Quality of Life. **X:** Chronic diseases.**R²:** RegressionSquare.**R²:** Adjusted Regression Square

When the table is examined, the model in which the effect of demographic characteristics on the quality of life is examined is statistically significant ($F=2.79$ $p=0.000$). Independent variables affect 50.1% of quality of life in a statistically significant way.

While the effect of the constant on the quality of life of 3,194 units in the model was statistically significant, Age, Economic situation, How many drugs do you use regularly, When were you discharged?, If yes How many days?, Who do you live with, Is your income sufficient to meet your needs, What kind of problem/injury did you experience?, Have you received post-injury rehabilitation services?, Have you had an operation? and Do you have a chronic disease that you are constantly being treated for are not statistically significant.

Discussion

This chapter presents the methodical analysis and explanation of the study's findings. In terms of applicability, supporting evidence available in the literature for the study findings is discussed.

More than half of the elderly participants had an acceptable level of assessment of their quality of life, with 53 (58.9%) having mean and standard deviation of 3.17 and 0.473, respectively, and 25 (27.8%) of the elderly having an excellent level for assessment of quality of life.

There was a significant association between elderly quality of life and socio-demographic variables (age, educational status, domicile, economic condition, and income sufficient to meet your demands) ($P < 0.05$). Individuals aged 75 years or older who fell had worse scores on the physical functioning, physical role, emotional role, and mental health domains, as well as the physical component and mental health domains, according to a study in Brazil (Paiva, 2020). Individuals with less education (up to four years) exhibited poorer scores on the physical functioning, physical role, bodily pain, emotional role and mental health domains, as well as the physical component, when the impact of falls on HRQOL was analyzed (Paiva, 2020). The results of that study are consistent with our current study.

Another study showed the impact of falls on HRQOL was obvious in the physical functioning, physical role, and body pain domains, as well as the physical component, in the group with lower income. There were no significant connections detected among people with higher incomes (Guimarães Rodrigues, 2013). The results of that study are consistent with the current study.

Based on question number 7 on the questionnaire (Do you have a chronic disease for which you are continually treated?), we may define the link between the two groups. As a consequence, 59 patients with one or more chronic diseases were identified, with some having three chronic diseases such as diabetes, hypertension, and bronchial asthma. The quality of life of a group of 31 participants who did not have chronic conditions was higher than the QOL for those who did.

Another result was the statistically significant difference between older subjects with chronic disease above 71 years who had lower perception (or bad perception) about QOL(3.75) compared to those who did not have chronic disease (4.06) (Linden Jr. and Trinidad, 2013). The results of this study are consistent with the current study.

Inoue et al. (2015) found the prevalence of chronic diseases was 39.27% (n=1032) in a survey of Japanese people. Of these, 592 were over the age of 60. Chronic disease prevalence increased with age, rising from 22.2% to 52.6% in those over 90 years old, followed by 50.9% in those between 81 and 90 years old, and 46.6% in those between 71 and 80 years old. The incidence of chronic diseases was linked to mental health issues, a decrease in QOL, and social isolation, all of which had a substantial influence on the lives of the aged (Inoue ,*et al.* 2015).

According to Table (4.8), analysis of variance (ANOVA) was conducted to see if there were any changes in quality of life based on the type of condition or injury. Results indicated that there was a highly significant difference in quality of life based on the kind of problem or injury. A study similar to the current study was conducted by the researcher Chang and colleagues in 2010. This study found the lowest quality of life for those with fractures. This is understandable because fractures limit a patient's movement and induce discomfort, which lowers the patient's quality of life. Falls have physiological and psychological consequences, such as a lack of trust in one's capacity to complete everyday tasks, social disengagement, and grief.

Our research showed that 50 elderly people who fell and were admitted to the hospital did not have operations or splinting, but 40 of them underwent either a surgical intervention or casting. Twenty-four patients underwent surgeries to repair and connect the broken bones of two types: open reduction with internal fixation and open reduction with external fixation. A total of 16 patients had fixation splints in the emergency unit. When ANOVA and t-test was used, a difference was present between the two groups (those who underwent operations or splints, and those who did not). The quality of life of patients who underwent surgery (operations or splints) decreased ($P < 0.01$). The surveillance system for the Dutch population aged 65 years or older, which records injuries treated at the emergency department, and a patient follow-up survey conducted between 2003 and 2007, estimated 67,300 Dutch people aged 65 years or older (i.e. 2.9% of the older population) visited the emergency department because of a fall incident annually. Falls mainly caused fractures (59.6%), superficial injuries (20.9%), and head injuries (8.7% head wounds and skull-brain injuries). A more detailed analysis revealed that fractures of the hip (27.5%), wrist (19.8%), upper arm (7.2%), and

clavicle (7.0%) represent the most frequently diagnosed fractures. Fall incidents led to high numbers of injuries and resulted in a major public health problem in older adults with large financial consequences. Injury patterns due to falls were gender- and age-related and resulted mainly in fractures, superficial injuries, and open wounds. A substantial loss in quality of life was found after a fall-related injury for patients who were admitted and not admitted. Injuries resulting in a long-term reduction of quality of life were accompanied by high healthcare costs (e.g., hip fractures) and by large increases in problems with self-care and usual activities compared with the general older population (Hartholt, 2011). Similar to this result, in our current study, experiencing a fracture after falling was a very important factor reducing quality of life.

When data about the difference in quality of life based on hospitalization was evaluated by ANOVA and t-test, there were significant differences between quality of life and hospitalization. There were highly significant differences related to duration of hospitalization. The results indicate that the shorter the hospitalization period, the better the quality of life, when analyzed by ANOVA. The length of stay in the hospital depends on the patient's condition. Minor injuries may not require the patient to stay in the hospital except for a few hours; however, there are cases that require the patient to stay in the hospital for up to two weeks. In cases that required surgical intervention, the patient needed to stay in the hospital for a longer period. Lengths of hospital stay were less than 24 hours for 49 patients, 1-3days for 16, 4-6 days for 6, 8-10 days for 18, and ≥ 2 weeks for 1 case.

Globally, at least 4 out of 10 patients are harmed while accessing primary health care and outpatient care services, and at least 80% of this harm is preventable. The majority of harmful errors result from diagnoses, prescriptions, and use of medications (Auraaen *et al*, 2018).

Based on other research estimates, low- and middle-income countries account for about two-thirds of all adverse events related to unsafe care, disability-adjusted life years (DALY) and death (Jha *et al.*, 2013). These results of studies were consistent with our current study.

ANOVA was performed to see if there were any changes in quality of life based on service rehabilitation. The findings revealed that based on service rehabilitation there was a statistically significant difference in quality of life. But another study observed that falls can be reduced through rehabilitation that includes balance, gait, and strength training exercises (Intiso, *et al.*, 2012), different to the result in our current study. The reason may be that the

patients who were referred to the Rehabilitation Services Unit were more seriously injured in the present study. The questionnaire included injuries on a wide range, starting from mild injuries such as swelling to major injuries such as fractures.

With regard to drugs used by elderly people who suffer from chronic diseases, the results of Table (4.14) indicate that there was a significant difference between quality of life for the elderly and the number of drugs used regularly. The results of the table also indicate that the elderly who do not use drugs have a better quality of life than those who use drugs, when analyzed by ANOVA. This result is realistic because one of the causes of falls is medicines. The use of benzodiazepines in older people is associated with a 44% increase in risk of hip fracture and night falls. There is a significantly increased risk of falling when using medications such as psychotropic, antiarrhythmic drugs, digoxin, diuretics, and sedatives. The degree of prescription of medicines has increased in chronic disease management. According to almost all studies, the risk increases significantly if more than four medications are taken, regardless of the type of drug (Dionyssiotis, 2012). Other studies also found that comorbidity plays a critical role in falls among older adults and that drug interactions can also be a factor in falls. Chronic conditions increase dosing frequency, which can lead to adverse drug events and drug interactions, which can increase the chance of falling (Njeru, 2021). Several studies reported a strong relationship between the use of three or more medications and risk of falls. These reports and the present study are further supported by earlier findings that the risk of falls increases significantly when more than four medications are taken regardless of the type of drugs taken (Freeland *et al*, 2012; Geriatr Soc. 2012). All of the results of these studies are consistent with our current study.

CONCLUSION AND RECOMMENDATIONS

6.1. Conclusion:

According to the results of the study,

While 58.9% of elderly participants had an acceptable level of assessment of quality of life in terms of mean and standard deviation (3.17 ± 0.473), 27.8% of the elderly had good level of quality of life.

Low quality of life scores were determined in participants with advanced age, low education level, and low economic level.

Among the participants, those who had fractures, those who had to be treated in hospital, and those who had an operation had lower quality of life scores.

It was determined that the longer the hospital stay, the lower the quality of life scores of the participants.

The quality of life was low for those who experienced permanent disability after a fall.

The quality of life of those who received rehabilitation services after falling was lower than those who did not.

The quality of life of the participants with chronic disease was lower than those without, and the quality of life scores of the participants decreased as the number of drugs they used daily increased.

From this point of view, the solution to the problem of falls cannot be handled by pharmacological treatment only. Elderly subjects should be informed about the benefits of exercise and home safety.

6.2 .Recommendations:

6.2.1. Policy implications:

We advise the Anbar Health Department to pay attention to the development of possible programs to reduce falls or prevent their causes through training workshops (for primary health care workers) or awareness leaflets for the elderly.

6.2.2. Research implications:

Conducting more research related to the impact of falls on quality of life and how to prevent it is necessary. Working to promote the health of the elderly is another topic that requires study.

6.2.3. Practice implications: Immediate action is required to adopt professional knowledge generated by nurses based on their experience working with older adults into fitness programs, medication reviews, and fall prevention education. This will allow the elderly to live in a safer environment and reduce the risk of falling.



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EXENDED TURKISH ABSTRACT

Düşme, görme bozukluğu, kas zayıflığı, osteoporoz ve stres, diyabet ve astım gibi kronik hastalıklar gibi yaşa bağlı değişiklikler nedeniyle yaşlı erişkinlerde yaygın bir sağlık sorunudur. Düşmeler kırıklara, sakatlıklara ve ek bakım ihtiyacına neden olabilir ve mortalite ve morbiditeyi artırabilir. Bu çalışmanın amacı, yaşlılarda düşmelerin yaşam kalitesine etkisini belirlemektir.

Çalışma tasarımı tanımlayıcı bir kesitseldi. Bu çalışmada amaçlı örnekleme yöntemi kullanılmıştır. Çalışmaya Irak'ın Anbar kentindeki Al-Ramadi Eğitim Hastanesi'nde bir ortopedi, cerrahi ve acil servise, düşen ve tedavi için başvuran 65 yaş ve üzeri toplam 90 yaşlı hasta dahil edildi. Veriler, Ocak 2021 ile Haziran 2021 arasında yüz yüze görüşme yoluyla toplanmıştır. Araştırmada katılımcılara sosyodemografik verilerinin yanı sıra düştükten sonra yaşadıkları tıbbi sürece ilişkin soruları içeren ve yaşam kalitelerini belirleyen anketler uygulanmıştır. Sonuçlar betimsel ve çıkarımsal istatistik yöntemiyle analiz edildi.

Araştırmaya katılanların %56,7'si 65-74 yaşları arasında, %46,7'si erkek, %74,4'ü evli, %65,6'sı kronik hastalığı olan, %45,6'sı hastanede tedavi altına alınmış ve %38,9'u düşme sonrası kırık yaşamıştır. Ortalama ve standart sapma ($3,17 \pm 0,473$) ile yaşlı katılımcıların %58,9'u kabul edilebilir bir yaşam kalitesi değerlendirme düzeyine sahipken, yaşlıların %27,8'i iyi düzeydeydi.

Araştırmanın sonuçlarına göre; ileri yaşta olan, düşük eğitim düzeyi ve düşük ekonomik düzeye sahip katılımcılarda düşük yaşam kalitesi puanları belirlendi. Katılımcılar arasında; kırık yaşayanlar, hastanede tedavi görenler ve ameliyat olanlar daha düşük yaşam kalitesi puanlarına sahipti. Katılımcıların hastanede kalış süresi ne kadar uzun olursa yaşam kalitesi puanlarının o kadar düşük olduğu belirlendi. Düşme sonrası kalıcı sakatlık yaşayanlarda yaşam kalitesi düşüktü. Şaşırtıcı bir şekilde, çalışmada; düştükten sonra rehabilitasyon hizmeti alanların yaşam kalitesi almayanlara göre daha düşüktü. Kronik hastalığı olan katılımcıların yaşam kalitelerinin olmayanlara göre daha düşük olduğu, katılımcıların günlük kullandıkları ilaç sayısı arttıkça yaşam kalitesi puanlarının düştüğü belirlendi.

Fitness programları, ilaç incelemeleri ve düşme önleme eğitimi, hemşireler tarafından yaşlı yetişkinlerle çalışma deneyimlerine dayalı olarak oluşturulan mesleki bilgileri benimsemek için acil eylem gereklidir. Bu, yaşlıların daha güvenli bir ortamda yaşamasını sağlayacak ve riski azaltacaktır.

APPENDIX

APPENDIX 1.1: Approval of Thesis Sample (in language Arabic)

APPENDIX 1.2: Approval of Thesis Sample (in language English)





APPENDIX 2: Approval of Using the questionnaire (by Email)

APPENDIX 3: Questionnaire of the study

ELDERLY PROMOTION FORM	
1. age ?	1. Age 65-74 2. Age 75-84 3. 85 and over
2. Gender	1. Female 2. Male
3. Your marital status?	1. Married 2. Widowed 3. Divorced 4. Never married
4. Education status?	1. Illiterate 2. literate 3. primary school 4. Middle School 5. High school 6. University
5. Body mass index (BMI)	1. Underweight = <18.5 2. Normal weight = 18.5–24.9 3. Overweight = 25–29.9 4. Obesity = BMI of 30 or greater
6. Who do you live with?	1. Alone 2. Wife/ Husband 3. Wife / Husband and children 4. Children 5. Other
7. Do you have a chronic disease that you are constantly being treated for?	1. Yes 2. No
8. What is chronic disease you have ?	1. Hypertension 2. Diabetes 3. Parkinson 4. asthma 5. Prostate cancer 6. breast cancer
9. How many drugs do you use regularly?	1.(1) 2.(2) 3.(3) 4.(4 and more)
10. Economic situation	1. No income 2. Elderly pension 3. Disabled pension 4. Receiving salary from spouse 5. Pension 6. Other
11. Do you have any other income?	1. No 2. Rent 3. Field-garden 4. Bank 5. Assistance
12. Is your income sufficient to meet your needs?	1. Yes 2. Sometimes 3. Not Enough
13. Have you fallen in the last 6 months?	1. Yes 2. No
14. Where did you fall?	1. Inside home 2. Outside home
15. Have you had any problems/injuries due to falling?	1. Yes 2. No
16. What kind of problem/injury did you experience?	1. Fracture 2. Dislocation 3. Sprain 4. Swelling 5. Tendon damage
17. Did you go to the doctor because of the fall you experienced?	1. Yes 2. No
18. Which service or clinic?	1. Orthopedic Consulting Clinic 2. Orthopedic Surgery 3. Emergency 4. other
19. Have you been in the hospital?	1. Yes 2. No
20. If yes How many days?	1. (1-3days) 2. (4-6days) 3. (8-10days) 4. (2week and more)
21. Have you had an operation or casting ?	1. Yes 2. No
22. What operation did you have?	1. casting bone fracture 2. Open reduction, and internal fixation 3. Open reduction, and external fixation

23. When were you discharged?	1. One week 2. Fifteen days 3. One month 4. Three months 5. Six months
24. Any injury after falling?	1. Yes 2. No
25. Have you received post-injury rehabilitation services?	1. Yes 2. No
i. QUALITY OF LIFE MODULE FOR THE ELDERLY	
General Life .b	
26. How would you rate your quality of life?	1. Too bad 2. Bad 3. Intermediate 4. Good 5. Very good
27. Does life give you optimism?	1. Very bad 2. Bad 3. Moderate 4. Good 5. Very good
28. How satisfied are you with your health?	1. Extremely dissatisfied 2. Dissatisfied 3. Somehow dissatisfied 4. Satisfied 5. Very Satisfied
Physical health .a	
29. Progress on your age , you cannot work due to the causes pain?	1. No 2. Alittle 3. Intermediate 4. very 5. Rather than
30. Do you need medical care to get on with your life?	1. No 2. Sometimes 3. most of the time 4. all the time 5. Rather than
31. Do you have enough energy for life every day?	1. No 2. alittle 3. Intermediate 4. very 5. Rather than
32. How well can you navigate?	1. Never 2. alittle 3. Intermediate 4. Very 5. Rather than
33. How satisfied are you with your sleep?	1.very dissatisfied 2. little 3. Intermediate 4. Very 5. Rather than
34. How satisfied are you with your ability to perform activities of daily living?	1.very dissatisfied 2. Alittle 3. Intermediate 4. Very 5. Rather than
35. How satisfied are you with your physical activity level?	1.very dissatisfied 2. Alittle 3. Intermediate 4. Very 5. Rather than
Emotional and Psychological .a	
36. How many opportunities do you have to be loved?	1.never 2. Little 3. Intermediate 4. Very 5. Rather than
37. To what extent do you feel a sense of friendship in your life?	1.never 2. Little 3. Intermediate 4. Very 5. Rather than
38. To what extent can you simply focus your mind?	1. Not at all 2. A little 3. Moderately 4. A lot 5. Quite a lot
39. Can you accept your bodily appearance?	1. Not at all 2. A little 3. Moderately 4. A lot 5. Quite a lot
40. How satisfied are you with yourself?	1. Not at all satisfied 2. Not satisfied 3. Neither satisfied nor dissatisfied 4. Satisfied 5. Very Satisfied
41. To what extent do you experience love in your life?	1. Not at all 2. A little 3. Moderately 4. A lot 5. Quite a lot
Social relations .a	
42. How satisfied are you with your relationship with family members?	1. Not at all satisfied 2. Not satisfied 3. Neither satisfied nor dissatisfied 4. Satisfied 5. Very Satisfied
43. How satisfied are you with your sex life?	1. Not at all satisfied 2. Not satisfied 3. Neither satisfied nor dissatisfied 4. Satisfied 5. Very Satisfied
44. How satisfied are you with the support you receive from your friends?	1. Not at all satisfied 2. Not satisfied 3. Neither satisfied nor dissatisfied 4. Satisfied 5. Very Satisfied
Environment .a	
45. How safe do you feel in your daily life?	1. Never 2. Little 3. Intermediate 4. Very 5. Rather than
46. How healthy is your physical environment, such as eating healthy or exercising?	1. Never 2. Little 3. Intermediate 4. Very 5. Rather than
47. Are you able to meet your daily needs such as shopping?	1. Not at all 2. A little 3. Moderately 4. A lot 5. Quite a lot
48. What is the suitability of your	1. Not at all 2. A little 3. Moderately 4. A lot 5. Quite a lot

healthcare environment for a better life?	
49. To what extent do you have opportunities for leisure activities?	1. Not at all 2. A little 3. Moderately 4. A lot 5. Quite a lot
50. How satisfied are you with the conditions where you live?	1. Not at all satisfied 2. Not satisfied 3. Neither satisfied nor dissatisfied 4. Satisfied 5. Very Satisfied
51. How satisfied are you with your access to healthcare?	1. Not at all satisfied 2. Not satisfied 3. Neither satisfied nor dissatisfied 4. Satisfied 5. Very Satisfied
52. How satisfied are you with your transport?	1. Not at all satisfied 2. Not satisfied 3. Neither satisfied nor dissatisfied 4. Satisfied 5. Very Satisfied
Spiritual .a	
53. Do your personal beliefs add meaning to your life?	1. Not at all 2. A little 3. Moderately 4. A lot 5. Quite a lot
54. How meaningful do you feel your life is?	1. Not at all 2. A little 3. Moderately 4. A lot 5. Quite a lot
55. To what extent do your personal beliefs give you the strength to face challenges?	1. Not at all 2. A little 3. Moderately 4. A lot 5. Quite a lot
56. To what extent do your personal beliefs help you understand life's challenges?	1. Not at all 2. A little 3. Moderately 4. A lot 5. Quite a lot

APPENDIX4: Ethical Committee:

APPENDIX5:Language Editing Certificate

APPENDIX 6 : Certificate of IGSCONG22

CURRICULUM VITAE

EK1. ÖZGÇMİŞ

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