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Elderly Knowledge and Attitude toward Fall Prevention at Primary Health Care Centers

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Partial Fulfillment of Requirement for the Degree of Master in Nursing Science

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بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

((اللَّهُ الَّذِي خَلَقَكُمْ مِّن ضَعْفٍ ثُمَّ جَعَلَ مِن بَعْدِ ضَعْفٍ قُوَّةٍ ثُمَّ جَعَلَ مِن بَعْدِ قُوَّةٍ ضَعْفاً وَشَيْبَةً يَخْلُقُ مَا يَشَآءُ وَهُوَ الْعَلِيمُ الْقَدِيرُ))

صدق الله العلي العظيم

سورة الروم الآية(٥٤)

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Dedication

To

Those who Enlighten the World with their light, my masters Fatima, her Father, her Husband and her Sons (peace is upon them)…

My Mother and Father with love and respect

My Brother and Sisters for their love, support, and encouragement

My Wife with all love and respect who supports me to continue my study….

My Uncle and Aunt with love and respect

Dear friends and every person who gave me opportunity to go on the right way...

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Abstract

The aging process brings many health and social problems, and in aging societies, meeting these challenges becomes an obligation. One of the challenges for elderly health is falling and its consequences. Falls among the elderly population cause frequent morbidity and mortality. That most of the causal risk factors are preventable.

A cross-sectional design was used in this study to assess the elderly's knowledge and attitude about fall prevention and find out the association between the elderly's knowledge and attitude and their demographic characteristics. A convenient sample of 200 elderly individuals who were attending the primary health care centers at Center Sector in Kerbala, Iraq. The study was conducted during the period from 9th October 2022 to 12th July 2023.

The questionnaire format was adopted and composed of four parts: socio-demographic, the elderly's medical history, the knowledge domain, and the attitude domain.

The reliability of the questionnaire was determined through a pilot study, and its validity was determined by a panel of 12 experts.

The study shows that less than half (43%) of the sample has fair-level knowledge, while (78 %) has negative attitudes toward fall prevention. The study shows there is a significant association between the elderly's knowledge and their socio-demographic characteristics (sex, level of education, marital status, and occupational status), and there is a significant association between the elderly's attitudes and their socio-demographic characteristics (age, level of education, and occupational status).

The study recommends a health educational program that should be applied to increase public knowledge and enhance attitudes about the fall

prevention through mass media, booklets, and primary health care center staff. Ministry of Labor and Social Affairs should provide financial support to the unemployed elderly to meet the necessary needs. A manual booklet about fall prevention should be written in simple words useing attractive pictures given to the elderly in primary health care centers.

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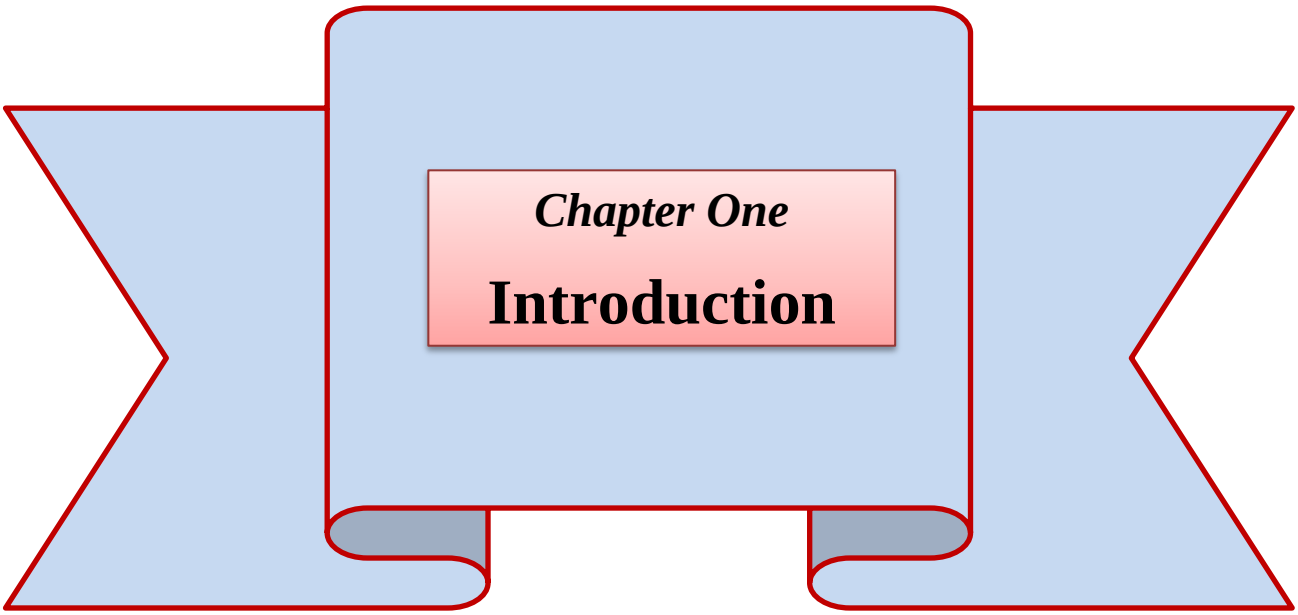
List of Abbreviations Table

Items	Meaning
ACE	Angiotensin-converting enzyme
BBS	Berg Balance Scale
BCE	Before the Christian Era
BESTest	Balance Evaluation Systems Test
BMD	Bone mineral density
CDC	Communicable disease center
CHN	Community health nursing
DALYs	Disability-adjusted life years
DHEA	dehydroepiandosterone
ET	Exercise therapy
F	Frequency
H.S	High significant
HBM	Health Belief Model
IU	International unit
Kg	Kilo gram
LTC	Long-term care
M	Mean
Mg	Milligram
NCDs	non-communicable diseases
ng/ml	Nanograms per milliliter
No.	Number
NS	Non –Significant
OH	Orthostatic hypotension
P	Probability
PA	Physical activity
PHCs	Primary Health Care Centers
PIM	Potentially inappropriate medicine
POMA	Performance Oriented Mobility Assessment
SD	Standard Deviation
Sig	Significance
SPPB	Short Physical Performance Battery
SPSS	Statistical Package for Social Sciences
SSRIs	Selective serotonin reuptake inhibitors
STEADI	Stopping Elderly Accidents, Deaths, and Injuries
TBI	Traumatic brain injury
Tug	Up-and-Go
UK	The United Kingdom
WHO	World Health Organization

List of Symbol Table

Symbols	Meaning
r_{pb}	point biserial correlation coefficient
r_S	Spearman correlation coefficient
%	Percentage
<	Less than
>	More than
>=	More than or equal


Chapter One
Introduction

Chapter One:

Introduction

1.1. Introduction:

The elderly are a part of the population that requires special care and is characterized by fragility and vulnerability due to a decline in the body's physical capacity and physiological system related to the multiple problems facing this segment of the population(AlAbedi and Naji, 2020).

A fall is characterized as an occurrence that causes a person to unintentionally come to rest on the ground, a floor, or another lower level. Fall-related injuries may be fatal or non-fatal though most are non-fatal. The second most common reason for unintentional injury fatalities globally is falls(World Health Organization, 2021).

Elderly individuals' health is at risk from falls, which can also make it harder for them to maintain their independence. However, falls don't have to be inevitable as age. Every year, one in four elderly fall(Centers for Disease Control and Prevention, 2022).

Globally, falls are an important threat to health public. The second greatest cause of unintentional injury mortality, behind road traffic accidents, is projected to be 684 000 fatal falls per year. A head injury or broken bone result from one out of every five falls (WHO, 2021).

The World Health Organization (WHO) has released data showing that between 2015 and 2050, the percentage of elderly people would rise from 12 to 22%, translating to an increase from 900 million to 2 billion elderly persons who over the 60 years(Esain et al., 2017).

Additionally, the population of the elderly is growing as a result of several significant changes in social, cultural, and demographic factors. According to the annual statistics report of the Ministry of Health, the percentage of the population in Iraq that is 60 or older is predicted to increase from 3.4% in 2010 to 5% in 2015 and be forecast to reach 7.2% in 2050(Republic of Iraq Ministry of Health, 2014).

More than 80% of fall-related fatalities take place in low- and middle-income nations, with 60% of these deaths taking place in the Western Pacific and South East Asia. Adults over the age of 60 have the highest mortality rates around the globe. There are around 37.3 million falls each year that are serious enough to need medical treatment but are not deadly. Fall-related injuries cause more disability-adjusted life years (DALYs) to be lost globally each year than transportation injuries, drowning, burns, and poisoning combined(WHO, 2021).

People 60 years of age and above should get health care, although data on the incidence of falls and the financial cost of falls in this age group are inadequate. A major injury occurs in around 20–30% of falls, and treating such injury is expensive. About 30 to 45 and 24 percent of elderly persons limit their daily activities, respectively, to indoor, outdoor, and combined indoor and outdoor activities(Goh et al., 2021).

Restriction may cause further falls and injuries. Additionally, the danger is significantly higher for older people whose homes have not undergone any changes(Uymaz and Nahcivan, 2015).

Environmental risk factors include risks in the house and in the community, as well as the interaction between a person's physical health and their surroundings. Hazards in the home include slanted staircases, loose carpets, and inadequate lighting. Injurious falls are made more likely by poor building design, slick floors, uneven or broken pathways, and insufficient lighting in public areas. One of the most frequent places for falls is the bathroom(Clark, 2015).

Elderly people frequently utilize walking aids (such as walking sticks or walkers) to help them move around and maintain their balance, which has caused them to move more slowly and cautiously in order to avoid falling(Bilik et al., 2017).

Risk factors for falls recognized that falls occur for a variety of reasons. They may result from interactions between environmental hazards,

medical conditions, and physiological risk factors. Foot problems, which affect one in three community-dwelling people aged ≥ 65 years, have been associated with reduced walking speed and difficulty performing activities of daily living(Goh et al., 2021).

Inappropriate footwear can lead to poor balance and a higher risk of falling in addition to creating foot issues. Higher heels, soft soles, and insufficient slide resistance are all regarded to be harmful to balance when it comes to footwear features. Prospective studies have demonstrated that there is an increased risk of falling while going barefoot, when simply wearing stockings indoors, and when donning shoes with a higher heel and a smaller contact surface(Cockayne et al., 2017).

One of the most important extrinsic risk factors for falls is medication usage. Potentially inappropriate medicine(PIM) lists are frequently used to lower the risk of falls and the incidence of adverse drug responses(Bor et al., 2017).

Although falls are a significant issue for elderly people, it is crucial to note that the majority of the main risk factors may be avoided. One of the most practical and economical methods to avoid falls among older individuals in the community is to encourage suitable physical activities or exercises to increase strength, balance, and flexibility(Abdulsaheb and Fadhil, 2019).

Exercise is seen as a crucial component of fall prevention programs, with an emphasis on improving balance in particular. Counting the number of falls is difficult, necessitates long-term tracking, and frequently depends on participants' subjective comments. As a result, balancing tests rather than longitudinal monitoring are more frequently used as markers of the risk of falls(Low et al., 2017).

Perform Balance assessments can be used dynamically (such as the Berg Balance Scale and Tinetti’s Gait and Balance Assessment) or statically (such as single leg stance, tandem stance). The ability for exercise

interventions to improve static balance performance in frail elderly is inconsistent. Exercise therapies' capacity to enhance static balance performance in elderly who are fragile is inconsistent(Giné-Garriga et al., 2014).

Balance deficit is commonly multifactorial as it may be caused by malfunction in the visual, sensory, vestibular, musculoskeletal, and cerebral processing systems, or by a combination of more than one of these causes (Alsaif and Alsenany, 2018).

Implementing preventive and comprehensive interventions with a focus on the unique risk factors shouldn't restrict people's rights to freedom, respect, or an elevated level of living(Campani et al., 2021).

1.2. Importance of the study:

The elderly frequently have falls and fractures caused by falls, which significantly increases morbidity and raises costs for both individuals and society. Globally, every year almost one-third of those under the age of 65 and half of those over the age of 80 will fall. Although not every fall will have an effect on the person, around one-fifth of falls will need medical treatment, and 5% of falls will cause a fracture, frequently a hip fracture(Cockayne et al., 2021).

The effects of a fall can be terrible for a person, their family, and their caregivers, and they can put a strain on the health and social care systems. Other earlier research found that frailty and falls were more common in elderly people who had inadequate muscular strength, weight loss, slowed gait, and high levels of fear of falling(Cardon-Verbecq et al., 2017).

Meanwhile, poor activity of daily life function and low dual-task performance were associated with fear of falling in elderly people(Brustio et al., 2018).

Falls are the second leading cause of injury-related fatalities globally in elderly people and a major risk factor for fracture, disability, and mortality(Chittrakul et al., 2020).

1.3. Research Hypotheses:

Null hypothesis (H0): there is no significant association between elderly knowledge and attitude toward fall prevention and their socio-demographic characteristics.

Alternative hypothesis (H1): there is a significant association between elderly knowledge and attitude toward fall prevention and their socio-demographic characteristics.

1.4. Statement of the Problem:

Falls are a significant public health issue on a global scale. Falls can occur in different environments like home and hospitals. There are three different types of falls such as accidental falls, anticipated physiological falls and unanticipated physiological falls (Kanyerinyeri and Njenga ,2022).

The second greatest cause of unintentional injury mortality, behind road traffic accidents, is projected to be 684 000 fatal falls per year. A head injury or broken bone result from one out of every five falls (WHO, 2021).

More than 80% of fall-related fatalities take place in low- and middle-income nations, with 60% of these deaths taking place in the Western Pacific and South East Asia. The elderly over 60 years of age have the highest mortality rates around the globe(WHO, 2021).

The World Health Organization (WHO) has released data showing that between 2015 and 2050, the percentage of elderly people would rise from 12 to 22%, translating to an increase from 900 million to 2 billion elderly persons who over the 60 years(Esain et al., 2017)

The current study focused on the knowledge and attitudes of elders about falls. The goal of the study is to reduce falls complication in elders

who frequent primary health care centers. When elders deliver knowledge regarding falls care it is critical to utilize this information in the life style

1.5. Objectives of the study:

- To assess the elderly knowledge toward fall prevention.
- To assess the elderly attitude toward fall prevention.
- To found out the association between elderly knowledge and attitude with their socio-demographic characteristics such as age, sex, occupation, level of education, marital status and body mass index and their medical history.

1.6. Definitions of terms:

1.6.1. Knowledge

1.6.1.1. Theoretical definition:

The ability to understand the information and facts about subject or something that acquired through study or experience(Yousef et al., 2021).

1.6.1.2. Operational definition:

Acquaintance with facts, truths, or principles. The facts and information learned about elderly fall risk factors and prevention strategies.

1.6.2. Attitudes:

1.6.2.1. Theoretical definition:

A clear way of thinking or feeling about someone or something, generally reflected in a person's behavior, attitudes are thus relevant to many disciplines(Oxford, 2017).

1.6.2.2. Operational definition:

A state in which elderly express their feeling and perceptions about fall prevention, which are reflected in their actions and behavior.

1.6.3. Elderly:

1.6.3.1.Theoretical definition:

A person 60 years of age or older who is suffering from the infirmities of aging as manifested by advanced age or organic brain

damage, or other physical, mental, or emotional dysfunction, to the extent that the ability of the person to provide adequately for the person's own care or protection is impaired(Diagnostic Approach, 2019).

1.6.3.2. Operational definition:

Elderly is a segment of population, aged (60) years old and above, need special care due to the multiple problems such as falling which lead to morbidity and mortality.

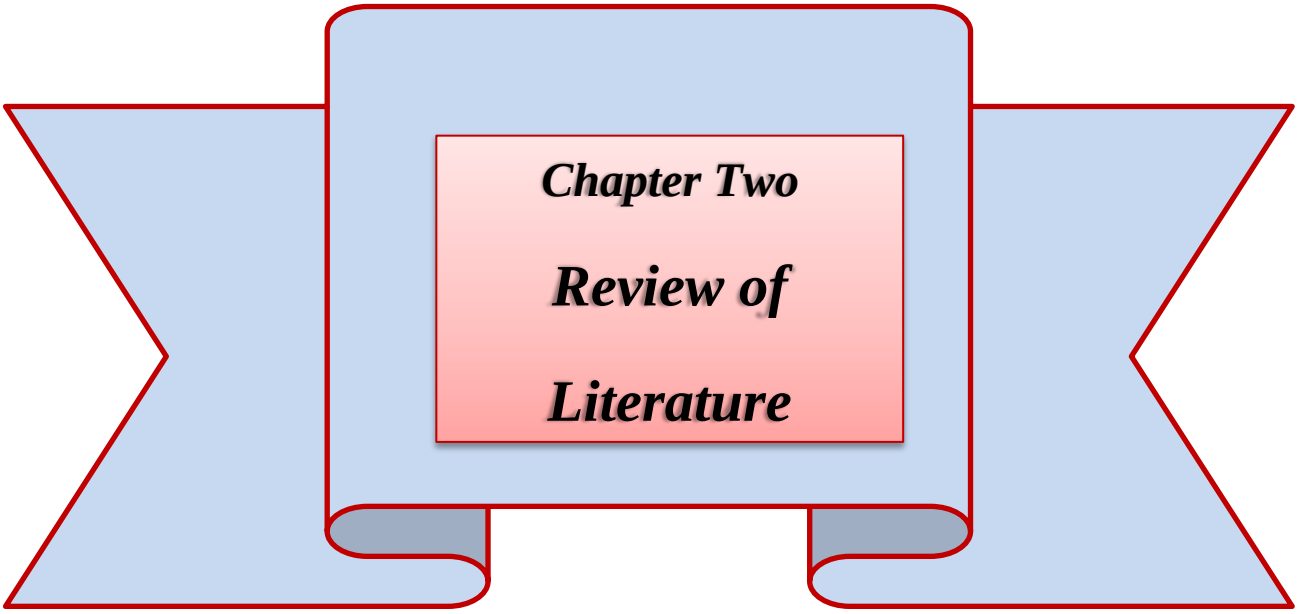
1.6.4. Falls:

1.6.4.1. Theoretical definition:

Falls are a major threat to the health and independence of the elderly. Most of them happen at home due to factors that can be modified(Cardoso et al .,2021).

1.6.4.2. Operational definition:

The fall of the body towards the center of the earth due to gravity as a result of an internal cause or external factors. Falling is a major cause of disease and disability and may even cause death. The causes of falls for the elderly are based on several factors and require several preventive measures from the elderly and his family to prevent their occurrence.


Chapter Two
Review of
Literature

Chapter Two

Review of Literature

2.1. Part I: Elderly Historical Overview:

Early authors including Hippocrates, Cicero, Galen, Roger Bacon, and Francis Bacon explored aging in general and referred to symptoms like skin changes, a decline in physical strength, and failing senses of sight, hearing, and memory. Nobody knew with certainty what led to old age. Several philosophers believed that a good old age might be encouraged by being active, eating reasonably, and exercising frequently, despite the fact that the causes of aging were unknown(Sinclair et al., 2012).

The goal of gerontology research, is to investigate the sociocultural elements of the cognitive and biological psychology of the aged while also attempting to avoid problems. This interest is brought on by the impending rise in the percentage of old people in the global population(Delgado, 2008).

Later, British authors from the eighteenth and nineteenth centuries, including Sir John Hill, Sir John Floyer, Sir John Sinclair, Sir Anthony Carlisle and Professor George Day, wrote about aging and ways to extend life. They agreed that much could be done to make later life healthy but generally thought it was impossible to make an old man youthful(Sinclair et al., 2012).

The early twenty-first century is exceptional in a variety of ways, in terms of the world's population, it is most notable as a period in which humans live noticeably longer than ever before. Perhaps even more astonishingly, this trend of increasing the average lifespan shows little indication of slowing down(Fillit et al., 2016).

The inaugural session of the World Assembly on Aging was held in 1982, and the outcome was an international plan of action for older people in Vienna. The conference's recommendations called for targeted action on

issues affecting the elderly, including housing, nutrition, education, healthy environment, the family, social welfare, income security, and employment. These issues were to be addressed through the gathering and analysis of research data, as well as by raising health standards and creating environments that are enabling and supportive(Miller et al., 2021).

Since the dawn of human existence, there may be more people over 65 than there are children under the age of five. Today, 8% of the world's population is made up of little under 500 million elderly individuals. The world's population is anticipated to exceed one billion by 2030, or 13% of all human beings(Dobriansky et al., 2015).

The population of the planet is aging. Almost every nation in the globe is seeing a steady rise in the proportion of people over 60 in their population. Life expectancy of elderly people is increasing globally as a result of a change from high to low fertility and mortality. Whether a rise in life expectancy will be followed by sickness, disability, and a demand for long-term care (LTC) services is a significant public health problem for ageing populations(Perracini et al., 2022).

In 2020, the global elderly population aged sixty years and older will be over one billion people, representing approximately 13.5% of the world’s population. By 2050, it is expected to nearly double from its 1980 level(WHO, 2020).

2.1.2. Characteristics of Elderly

The ability to share experiences across generations is greatest among the elderly, who are regarded as valuable resources in society. Therefore, it is necessary to comprehend their various characteristics and make an effort to enhance each one of their abilities.

The main characteristics of elderly can be clarified in following:-

The development of lasting friendships, financial stability, continued community involvement, or personal hobbies are characteristics of the

elderly; they deal with grief more readily; A successful relationship with one's children and grandkids is priceless; The capacity of the elderly to adjust at this stage of life depends on the development of their prior personality and support from family and friends(Ghazi et al., 2017).

As more of our elderly family and acquaintances pass away, acceptance of death becomes a reality; adaptation to alterations in physical health and fitness; adaptation to other elderly people in the same age group; adjusting to retirement and limited income; Elderly people occasionally engage in post-retirement activities that improve their social, economic, and health condition(Demirel et al., 2014).

2.1.3. Classification Age of Elderly

According to many definitions offered by gerontologists and theorists, aging is an anatomical and biological process that happens over time and is followed by a steady reduction in physiological performance that affects an individual's mental, financial, social, and physical abilities(Sadrollahi et al., 2016).

Although there is no obvious biological or medical justification for this classification, in many nations everyone who turns 65 is considered to be elderly. While those over 60 can be categorized as follows: those in early age or young-old are between 60 and 74 years old, those in middle age are over 75 years old, and those over 90 years old can be classed as old-old or aging(Ouchi et al., 2017; Sivasankar and Ravindranadan, 2017).

Functional age has been a term used by gerontologists for many years. This idea has to do with retirement age and refers to the point at which an aged person ceases working. When an aged person becomes ineligible to work due to their age, they are typically referred to as being retired and get half of their previous wage(Miller, 2021).

2.1.4. Health of Elderly

In 44 BCE, Marcus Tullius Cicero penned a piece titled "De Senectute" (The Old Age). Cicero offered suggestions for maintaining one's health and energy. That piece of art can be seen as a description of the idea of "healthy aging," although it is mostly individual-focused(Rudnicka et al., 2020).

Healthy ageing is “the process of developing and maintaining the functional ability that enables wellbeing in older age”(WHO, 2020).

Age-related health changes are common and can have a big impact on self-efficacy. The elderly's health plays an essential role in preserving and enhancing their functional ability, which enables them to achieve well-being in old age(WHO, 2015).

In 2016 all WHO Member States endorsed the three components of healthy ageing are functional ability, intrinsic capacity and environments (Beard et al., 2016).

Implementing environmental strategies based on healthy behaviors is necessary to improve the health of the elderly. This may be done by developing personal knowledge and abilities as well as more general strategies, including creating green spaces for physical exercise and pricing cigarettes for a healthy atmosphere(WHO, 2015).

For elderly people as well as for others, health promotion is crucial. Despite the fact that 80% of people over 60 have one or more chronic conditions and many are restricted in their activities, older adults and the elderly have a good outlook on their health and are motivated to embrace behaviors that would enhance their health and well-being(Touhy and Jett, 2021).

2.1.5. Aging with a Disability

People with various kinds of physical, cognitive, and mental problems now have longer life expectancies, which means they must

manage both their inherent disability and the common aging-related changes(Hinkle and Cheever, 2018).

Scientists still have a lot to learn about how impairments and aging interact, especially how this relationship changes based on the kind and severity of the disability as well as other aspects like socioeconomic status and sex(Newland et al., 2015).

Disabilities that affect elderly people and are assumed to be brought on by aging are known as age-related disabilities. Among the impairments brought on by aging include osteoarthritis, osteoporosis, and hearing loss(Hinkle and Cheever, 2018).

2.1.6. Theories of Aging

Many theories attempt to provide a framework in which aging is understood from different perspectives

2.1.6.1 Age-Related Changes

Physical, psychological, mental, social, economic, and environmental aspects all affect elderly individuals' well-being. An overall examination looks at a person's capacity to operate independently, their social and mental health, and their primary bodily systems(Weber and Kelley, 2013).

2.1.6.1.1. Physical Aspects of Aging

Changes brought on by the natural aging process that are genetically preprogrammed and generally universal within a species are referred to as intrinsic aging from inside the individual (Del Gobbo et al., 2015).

Functional decline and observable changes in physical appearance, such as changes in form and body composition, are brought on by cellular and extracellular changes that take place with age(Grossman, 2014).

2.1.6.1.2 Psychosocial Aspects of Aging

The capacity of elderly people to adjust to physical, social, and emotional losses and to find life happiness is a sign of successful

psychological aging. Positivity about oneself encourages taking calculated risks and engaging in novel, untested roles. Ageist attitudes may be brought on by people's fear of aging and their unwillingness to face their own aging process(Hinkle and Cheever ,2018).

2.1.6.1.3. Cognitive Aspects of Aging

Numerous factors, such as physiologic health, sensory impairment, psychosocial influences, sleep, and environment, might have an impact on cognition(McDougall et al., 2015).

When the scores of people of various ages taking intelligence tests are compared, the results for the elderly reveal a steady decline starting around midlife(Bergman and Almkvist, 2013).

As a result, a large number of elderly persons continue to learn and engage in various educational activities. Health and motivation are significant factors that affect learning(Harris et al., 2015).

2.1.6.1.4. Pharmacologic Aspects of Aging

The elderly consume more pharmaceuticals than any other age group due to the fact that they are more likely to suffer from chronic diseases. Adverse drug responses are frequent due to drug interactions, numerous drug effects, inappropriate doses, and the use of various drugs, even while pharmaceuticals increase health and well-being by reducing pain and suffering, treating chronic illnesses, and healing infectious processes(Hinkle and Cheever, 2018).

2.1.6.1.5. Mental Health Problems in the Elderly

Extreme mood swings, uncontrollable crying or laughing, cognitive impairments, and a propensity for forgetfulness are not signs of natural aging. It is important not to dismiss these symptoms as normal aging changes; a careful examination may identify a treatable disease(Yuan., 2021).

2.1.6.2. Additional Aspects of Health Care of the Elderly

These include ethical and legal concerns, geriatric disorders, elder abuse and neglect, and pseudobulbar affect. Pseudobulbar affect is a disorder marked by inappropriate or excessive emotional expression, typically sobbing or laughing fits(Yang and Deeks, 2015).

2.1.7. Frailty in Elderly

Frailty is a clinical condition associated with aging that is defined by a reduced capacity to maintain homeostasis or by the presence of one or more of the following characteristics: loss of physical function or a reduction in cognitive, nutritional, or social functioning that affects an aged person's capacity to carry out activities of daily living(Chaer et al., 2017).

Nearly half of all elderly people over the age of 80 and about 30% of those 65 to 75 years old are almost certain to have physical weakness. Additionally, their health is made worse by comorbidities, frequent medication use with compromised immunity, sedentary behavior in both sexs, lower education, and lower social status(McPhee et al., 2016).

2.1.8. New Vision for Healthy Elderly

Preventing various diseases early in life, elderly people can live longer and better lives than others, avoiding illness, frailty, and dependency(Fried, 2016).

Today's health care system makes extensive use of a strong knowledge foundation. These are exemplified by the health education given by medical experts to safeguard the elderly from impairments including practice of physical activity, applied balanced food, and the healthy environment(WHO, 2015).

The majority of regional and global organizations place a strong emphasis on integrating the elderly into society and avoiding labeling them as being useless(Fried, 2016).

To achieve better health, which can be done by supporting the security and social protection aspects, including the provision of pensions to meet basic needs for housing and food, as well as education and fighting illiteracy, while providing employment opportunities and developing public health systems that support prevention and care. Thus, the entire population can gain greater health(WHO, 2015).

The community will be able to meet their needs and gain experience if the elderly remain healthy, as this will reduce their risk of illness and disability, which has been described as the primary public health goal of longer-lived communities, if the rate of morbidity for the elderly is reduced(Fried, 2016).

2.2. Part II: Elderly Knowledge toward Fall Prevention

Falls result from a complex and interactive mix of biological or medical, behavioral and environmental factors, many of which are amenable to intervention. There is a growing body of international evidence of best-practices for the prevention of falls and fall-related injuries among older persons. An ever growing number of falls prevention interventions are being implemented. The personal, family and societal impact of fall-related injuries for older persons, their families and society, and the possibility of effective intervention make this an important global health issue for the World Health Organization(Flint et al., 2020).

The knowledge of elderly toward fall prevention is a critical aspect of promoting their safety and well-being. Several studies have shown a direct correlation between the falls and the number of risk factors present. For example, one study showed the incidence of falling changed from 8% among those with no risk factors to 78% among those with 4 or more risk factors. Other studies have shown that multifactorial interventions targeted toward modifiable risk factors can decrease a person’s risk of falling(peel et al., 2008).

Little is known, however, about provision of fall prevention services by community-based senior-serving organizations or about elderly understanding of effective fall prevention practices. Understanding fall prevention knowledge and attitude of elderly is crucial for translating and disseminating effective fall prevention programs(Laing et al., 2011).

Fall prevention involves managing elderly regarding to risk factors (e.g. Walking and transfer ring problems, psychoactive medication use, confusion, visual impairment, evidence of stroke or cancer, dizziness and frequent toileting)(Chen, 2016).

Falls happen if the lighting is too dim or the surroundings are unfamiliar, also result from slipping on a throw rug that is not securely affixed to the floor. The second greatest number of injuries occur on stairs and steps, especially during descent. People commonly miscalculate the dimensions of the stair because of poor lighting in the stairwell or trip because of uneven stair heights or clutter on the steps(CDC, 2017).

Biological factors, such as medical conditions among elderly people such as weakness, unsteady gait, confusion and certain medications. Environmental hazards, such as slippery floors and lack of hand rails or grab bars. Smoking and poor practicing exercise are considerable behavioral factors(Hakami, 2019).

2.2.1. Fall

Unintentionally falling to a lower level is the second leading cause of unintentional injury deaths globally, after road traffic injuries. Because of the effect of physiological and health variables, elderly people are more likely to fall(Chang et al., 2015).

Falls are a significant public health issue on a global scale. Each year, 684 000 fatal falls are thought to occur. More than 80% of fall-related fatalities take place in low- and middle-income nations, with 60% of these deaths taking place in the Western Pacific and South East Asia. The elderly

over 60 years of age have the highest mortality rates around the globe(WHO, 2021).

Additionally, falls are the third cause of chronic disability in the elderly. therefore, falls in elderly consider a significant problem in hospitals, chronic care facilities, and long-term care facilities(Liu-Ambrose et al., 2019; Heather and Pamela, 2018).

Falls can cause loss of independence, heightened isolation and depression, decreased mobility, as well as higher rates of health conditions and mortality(Blanchet and Edwards, 2018).

Fall-related injuries may result in skin bruises, but more serious injuries may result in fractures, prolonged stay in the hospital, and a loss of the capacity to care for oneself(Chang et al., 2015).

The effects of a fall can be terrible for a person, their family, and their caregivers, and they can put a strain on the health and social care systems(Logan et al., 2022).

Globally, falls are responsible for over 38 million DALYs (disability-adjusted life years) lost each year, and result in more years lived with disability than transport injury, drowning, burns and poisoning combined(WHO, 2021).

In the UK, falls are the most common reason for elderly people being admitted to emergency hospitals. For example, in 2017/18, there were around 218,000 emergency hospital admissions related to falls among patients aged 65 years or over. Those aged 80 and over are about 149,000 (68%)(Logan et al., 2022).

The yearly direct and indirect costs of falls among the elderly in Canada are projected to be above $3 billion(Blanchet and Edwards ,2018).

The most frequent medical consequence for patients with stroke is falling. Patients with stroke who were older than 50 years old reported at

least one fall in the previous six months in 50 or 59 percent of cases(Khan et al., 2015).

2.2.2. Types of Falls

Falls can occur in different environments like home and hospitals. There are three different types of falls such as accidental falls, anticipated physiological falls and unanticipated physiological falls (Kanyerinyeri and Njenga ,2022).

2.2.2.1. Accidental Falls

The first type of fall is an accidental fall, which is caused by environmental factors(Kanyerinyeri and Njenga ,2022).

This type may be readily anticipated and avoided since it's crucial that the area the client lives in is well-organized, with a dry floor and enough room to move about from one location to another. The environment greatly influences the likelihood of falls in unintentional falls. Therefore, caregivers and nurses must be aware of these situations and ensure that they are secure to reduce the risk of falls(Rubenstein, 2021).

2.2.2.2. Anticipated Physiological Falls

Falls that are anticipated physiologically are those that typically happen when a patient is exposed to many fall risks. These falls are more common, mostly in home and hospital settings(Staggs et al., 2015).

A nurse can stop expected physiological falls by watching the patient and using the Morse fall scale to determine whether the patient is at danger of falling. The client can receive assistance from the physiotherapist by being shown several types of exercises that can be done, such as those for body balance and muscular building. Fall risk will be decreased as a result. According to estimates, predicted physiological falls account for 78% of all falls(Kanyerinyeri and Njenga, 2022).

2.2.2.3. Unanticipated Physiological Falls

Unexpected physiological falls are a specific form of fall that can be avoided after it has already occurred. For instance, falls that result in epileptic seizures might be challenging to prevent at that time due to their unexpected nature(Kanyerinyeri and Njenga, 2022).

The client may get information and instruction from the nurse on how to prevent injuries following the initial fall. Because this kind of fall is difficult to determine on a fall risk scale, it can help reduce the number of falls(Kanyerinyeri and Njenga, 2022).

2.2.3. Causes of Fall

Falls have many different causes, including age-related muscular deterioration, poor balance and walk, vision impairment, and sex. Further, a single fall for an elderly raises their chance of further falls and frequently increases their anxiety of falling again, which can become debilitating(Low et al., 2017).

Falling can be a generic presenting symptom of several acute infections in elderly individuals, including pneumonia, urinary tract infection, and myocardial infarction. It might also be a symptom of a chronic illness worsening suddenly(Soliman et al., 2016).

A thorough medical evaluation is essential since more than half of all falls are caused by medical conditions. The reasons of falls are numerous and sometimes interrelated, and they include accidents, syncope, drop attacks, dizziness or vertigo, orthostatic hypotension, drug-related and specific disease process(Morley et al., 2022).

Less than half of all falls are caused by accidental or unintentional falls. The most frequent response given when someone is asked how they fell is that they tripped or slid. A mistaken step, such as walking into a hole, losing their balance, their legs giving out, or being pushed down are some more causes(Morley et al., 2022).

The patient's or informant's report of a loss of consciousness helps to rule out syncope or near-syncope as the reason of the fall, but in the majority of cases, the cause of the syncope is still unknown. Neurocardiogenic syncope and epilepsy are frequent causes of falls accompanied by loss of consciousness(Sinclair et al., 2012).

The definition of a drop attack is an abrupt collapse without loss of consciousness. There is not an alert. When laying on the floor, patients frequently remark that they feel powerless, nearly paralyzed, but that as soon as they are assisted back to their feet, they immediately recover. However, roughly half of elderly fallers, especially if they are also fragile, require assistance to stand up after any form of fall(Morley et al., 2022).

Both elderly people who fall and those who do not fall frequently experience dizziness and unsteadiness, which are described as an unbalanced feeling and a spinning sensation in the brain. Most patients experience multiple causes of dizziness, and 85% of those who are chronically dizzy have more than one diagnosis. Some of the most frequent causes include vestibulopathy, orthostatic hypotension, multiple drug interactions, primary gait disorders, cerebrovascular and cardiovascular disease, cervical spondylosis, anxiety, and poor vision(Morley et al., 2022).

The elderly may fall less frequently because of vertigo, which can be either central produced by the brainstem or cerebellum or peripheral induced by the vestibular system(Sinclair et al., 2012).

Even while not all elderly people with orthostatic hypotension (OH) have symptoms, this condition may contribute to instability and increase the risk of falls. People who have postprandial hypotension and/or orthostatic hypotension are particularly susceptible to near-syncope and falls, especially while taking diuretics and antihypertensive medications(Sinclair et al., 2012).

Diuretics hypovolemia, hypoglycemics, antihypertensives hypotension, sedatives, and antipsychotics sedation, muscular stiffness, postural hypotension are drugs that should be suspected of contributing to falls. anticholinergic side effects of medications for depression and others(Morley et al., 2022).

Calcium channel blockers, beta-blockers, ACE inhibitors, digoxin, type 1A antiarrhythmic, and nitrates are the cardiovascular drugs most frequently linked to falls(Sinclair et al., 2012).

Consider selective serotonin reuptake inhibitors(SSRIs), tricyclic antidepressants, neuroleptics, benzodiazepines, and anticonvulsants when choosing a psychiatric medicine. The odds ratio for any usage of psychotropic drugs is 1.73 for one or more falls(Morley et al., 2022).

Because their companions caregivers typically overlooked the risk of falls, elderly people frequently fell. Furthermore, elderly 65 and older may have fallen because they attempted to get out of bed on their own rather than waking up their relatives(Chang et al., 2015).

2.2.4. Epidemiologic Perspective for Fall

Risk factors for falls have been discovered in epidemiologic observational studies of elderly people in the community and in acute and chronic care facilities; all indicate that risk rises as the number of risk factors rises. Alterations in mobility and cognition are significant risk factors for falls across settings. Surprisingly, one can be too motionless to fall(Fillit et al., 2016).

2.2.5. Physiologic Perspective for Fall

The physiologic systems that impact balance can be used as a lens through which to analyze factors that lead to falls. Models of disablement serve as the foundation for the use of a framework of organ-based physiologic systems that influence balance. These models establish connections between pathologic processes and altered organ system

performance also known as impairments, which together have an impact on body movements also known as functional or performance limitations, which in turn have an impact on functional abilities and disability, and finally interfere with social roles like being a homemaker or volunteer also known as handicap(Fillit et al., 2016).

2.2.6. Biomechanical Perspective for Fall

The notions of mass, force, momentum, and acceleration of the body as a whole as well as of individual body segments are the foundation of a biomechanical approach to fall risk. The human body is a long, towering column that is supported by a little base while it is upright. The primary goal of movement is to move and recover this column when the support base shifts. As a result, there are two basic criteria for evaluating balance: static balance and dynamic balance. Walking is the most fundamental and traditional dynamic balancing activity(Fillit et al., 2016).

2.2.7. Risk Factor of Fall

A person is more likely to fall when they are exposed to fall risk factors. These risk factors can be divided into extrinsic from outside the person and intrinsic from inside the person(Phelan et al., 2015).

Age, past falls, muscular weakness, poor vision, gait and balance problems, postural hypotension, chronic illnesses including diabetes, arthritis, incontinence, stroke, dementia, Parkinson's, and fear of falling are all intrinsic factors(CDC, 2017).

One of the major fall risk factors is age. The risk of death or serious injury from a fall is highest in the elderly, and the risk rises with age. This risk level may be caused in part by age-related physical, sensory, and cognitive changes as well as unsuitable environmental conditions for an aging population(WHO, 2021).

The fall rate associated with medical causes ranged from 71.4% foot problem to 33.3% diabetic mellitus patients(Patil et al., 2015).

Type 2 diabetes is associated with balance and gait abnormalities and an increased risk of falls and injury. Possible diabetes-associated risk factors for falls include neuropathy, polypharmacy, cognitive impairment, peripheral arterial disease, vision loss, hypoglycemia and insulin therapy (Bruce et al., 2015).

Stroke frequently has negative implications. Falls are a frequent post-stroke consequence that have been linked to function loss in patients with acute stroke. A fall occurs in the first six months for 73% of stroke survivors who are reintegrating into society(Schmid et al., 2015).

Lower urinary tract symptoms may increase the risk of falling in men who live in the community. Urinary urgency, frequency, nocturia, and incontinence are linked to an increased risk of falls in the elderly due to unanticipated changes in daily physical routines and force those who experience them to engage in potentially risky behaviors, such as getting up several times throughout the night to urinate(Soliman et al., 2016).

External causes include behavioral, environmental, and socioeconomic factors. Behavioral fall hazards, which include things like drinking too much alcohol, wearing the wrong shoes, and being physically inactive, may be changeable(Kamińska et al., 2015).

Behavioral factors also include polypharmacotherapy, polypharmacy is also important and increases the risk for falls in an exponential manner and medication, especially those with sedative effects such as hypnotics, opioids, narcotics, antidepressants, antiepileptic medication or antihypertensive(Álvarez, 2018).

Behavioral factors associated with a higher fall rate were underweight, abnormal balance, and gait(Patil et al., 2015).

Environmental considerations include the development of both public and private places uneven topography, architectural barriers, and transportation issues. Low income, a low standard of living, restricted

access to social and health services, and a lack of social support are all socioeconomic difficulties(Kamińska et al., 2015).

Falling occurred more frequently due to intrinsic reasons than to external ones, which increased levels of disability and fatality(Chittrakul et al., 2020).

2.2.8. Consequence of Elderly Fall

Falls are significant because they are a main cause of impairment, distress, admission to supervised care facilities like hospitals, and mortality in elderly people. Approximately 10% of emergency room visits and 6% of urgent admissions among elderly individuals are caused by falls(Sinclair et al., 2012).

Falls cause a decline in physical function as well as a drop in confidence and an increase in fear of falling. This anxiety may result in a vicious cycle of depression, increased functional impairment, and social isolation(Wagner, 2014).

Among nations with aging populations, falls and fall-induced fractures also known as low-trauma fractures or age-related fractures among elderly people are a serious public health problem. Fall-related fractures most frequently occur at the proximal femur, vertebrae, proximal humerus, and distal radius(Kannus et al., 2016).

These fractures occur, however, also happen often in other parts of the bone, such as the knee, pelvis, and ankle distal tibia and fibula. Additionally difficult and expensive, their care requires special consideration(Gee et al., 2015).

In 5% to 15% of falls, there are major injuries, such as head trauma, soft tissue injuries, fractures, and dislocations. Hip fractures occur in 1% to 2% of falls and account for 75% of serious injuries(Soliman et al., 2016).

Women over 50 years old noticed an increase in the incidence of spinal compression fractures as they aged, mirroring the rise in

osteoporosis prevalence. Age-related changes in bone mineral density (BMD) in the proximal femur and vertebral body nearly always follow the same pattern. On the other hand, between the ages of 40 and 70, the prevalence of proximal femoral fractures was low, and after the age of 75, a significant increase was seen(Järvinen et al., 2015).

The risk of proximal femoral fractures was raised locally due to factors including declining rates and fracture mechanism. the fracture incidence for each of the various locations by age and sex. Except for the proximal forearm, tibia, fibula, ankle, and foot, they discovered a significant age-related rise in incidence. This result showed that fracture incidence rates at specific anatomical regions are unaffected by low bone mineral density(Amin et al., 2014).

2.2.8.1. Vertebral Compression Fracture

According to epidemiological research, 8% to 13% of women in their 60s and 30% to 40% of women in their 70s had spinal compression fractures with radiographic diagnoses.When the vertebral height is lost by more than 4 mm, or 20%, it is radiographically determined that a vertebral compression fracture has occurred(Kherad et al., 2015).

2.2.8.2. Fractures of the Distal Radius and Proximal Humerus

Distal radius fractures are a significant global public health hazard, especially in elderly persons. The most frequent fracture of the upper extremity in elderly people is a distal radial fracture(DeGeorge et al., 2020).

Men experience distal radial fractures at a rate of 100–130 per 100,000 people per year, and the rate does not rise with age(Tsuda et al., 2017).

Around 85% of elderly over 50 experience proximal humerus fractures, and the incidence spikes in the 60- to 90-year-old age range with a female-to-male ratio of 70:30(Schumaier et al., 2018).

Distal radial fractures result from an effort to use the hands as a form of protection during a fall. On the other hand, proximal humeral fractures commonly occur in people who have advanced age from direct falls onto the shoulder joint. While most proximal femoral and proximal humeral fractures occur indoors, two-thirds of distal radial fractures happen outside(Tsuda et al., 2017).

2.2.8.3. Proximal Femoral Fracture

In elderly patients, proximal femoral fracture is a serious incident that represents a medium- to long-term life danger(Merloz, 2018).

According to epidemiological research, the incidence of proximal femoral fractures rises steadily with age starting at the age of 40 and rapidly after the age of 75. The incidence rate is influenced by a number of variables, including fall rates, the aged care system, floor structure, and sunlight intensity(Tsuda et al., 2017).

Hip fractures, which are fractures of the proximal femur, are frequently observed in the elderly after a fall. The mortality and morbidity rates for this kind of injury are very high(Emmerson et al., 2022).

Falls are responsible for more than 90% of hip fractures, and most of these fractures affect persons over the age of 70(Soliman et al., 2016).

Only 40–60% of the elderly recover their pre-fracture level of mobility and capacity to carry out everyday activities within a year following a hip fracture(Fischer et al., 2021)

2.2.8.4. Other Common Consequence: Traumatic Brain Injury (TBI)

Falls account for 50% to 80% of injuries among elderly people and are the most frequent cause of traumatic brain injuries (TBI). Age-related physiological changes, medical comorbidities, and a predisposition for polypharmacy all contribute to the elderly having a higher risk of mechanical injury(Fu et al., 2017).

2.2.9. Falls from Elderly Perspective

Elderly people commonly believe that falls come with being older yet underestimate their own danger of falling. The most frequent variables identified as contributing to falls are environmental and behavioral e.g., hurrying, being distracted; intrinsic personal/health elements are rarely acknowledged. In order to assist patients realize the significance of intrinsic variables in triggering falls, primary care professionals play an essential role(Phelan et al., 2015).

Few elderly people employ tried-and-true fall prevention techniques like balancing training. People frequently answer that they are being more cautious when asked what they are doing to prevent future falls. But there is no proof that being more cautious alone stops falls(Moyer and US Preventive Services Task Force, 2012).

Less than half of elderly people who fall discuss it with their medical professionals. As a result, recommendations state that healthcare professionals should inquire about falls at least once a year from all of their 65 and older patients. Primary care professionals may assist patients lower their risks of falling and experiencing functional decline, injury, or death by assessing patients for fall risk and urging them to implement evidence-based preventive techniques(Stevens et al., 2012).

2.2.10. Fall Risk Assessment

An important aspect of the geriatric exam is the questioning of falls. Every older person should be questioned about falls they experienced in the previous year, and those who had only one past fall should undergo a get up and go test (Sinclair et al., 2012).

A comprehensive geriatric evaluation can assist identify persons who are at risk and avoid major falls-related injuries. Teams almost always consist of a doctor and a nurse, and those that provide customers with the most benefit also include many of the following medical specialists:

Physical and occupational therapists, counselors, social workers, pharmacists, and educators of health (Wagner, 2014).

To properly screen clients using risk assessment tools, a systematic strategy is needed. Before using these tools in any circumstances, though, there are a number of things that need to be taken into account. Screening instruments should be simple and quick to use(Teo, 2019).

At first screening frequently forms part of the assessment. It asks a number of questions on the general health of the elderly and whether they have ever fallen or experienced balancing, standing, or walking issues. a group of exercises referred to as autumn assessment tools. These instruments assess your physical stamina, sense of balance, and walking style(Lunsford and Wilson, 2015).

To determine if there is a low, moderate, or high risk of falling, a fall risk assessment is employed. The health care practitioner and/or caregiver may suggest fall prevention measures if the evaluation reveals that you are at a higher risk(Lunsford and Wilson, 2015).

Falls frequently occur without warning, but if you have any of the following symptoms, the chance may be higher: Unsteadiness, faintness, fast or irregular heartbeats(Frith et al., 2019).

A minimum of once a year, elderly people should be checked for falls. A thorough falls assessment should be carried out if a person is deemed to be at risk to identify their risk level(Schöne et al., 2017).

Many providers employ a strategy called Stopping Elderly Accidents, Deaths, and Injuries(STEADI), which was created by the CDC. Screening, assessment, and intervention are all parts of STEADI. Interventions are ideas that might lower the chance of falling. During the screening, you could be asked a number of questions, such as: have you fallen over the previous 12 months? When walking or standing, do you feel

unsteady? Are you afraid of falling? The assessor will measure your strength, balance, and gait during the examination(Casey et al., 2017).
using the following fall assessment tools:

2.2.10.1. Timed Up-and-Go (Tug)

This exam evaluates gait. Beginning on a chair, get up, walk steadily for about 10 feet then take another seat. A medical professional will examine how long it takes to complete this. You may be more likely to fall if it takes you 12 seconds or longer 30 Seconds(Nithman and Vincenzo et al., 2019).

2.2.10.2. Chair Stand Test

This test evaluates your balance and strength. Arms crossed over the chest while you sit in a chair. When the provider signals go, get up and seat down once more. Do this again after 30 seconds. The number of times the provider can do this will be counted. A lower score might indicate that you are more likely to tumble. The specific number representing a risk depends on age(Bruun et al., 2019).

2.2.10.3. Four Stage Balance Test

This exam evaluates the ability to maintain equilibrium. Holding each posture for ten seconds, stand in four different ways. The jobs will become more difficult to fill.

Position1: Stand with feet side-by-side.

Position 2: Move one foot halfway forward, so the instep is touching the big toe of the other foot.

Position 3: Move one foot fully in front of the other, so the toes are touching the heel of the other foot. Position 4: Stand on one foot. If ;can't hold position 2 or position 3 for 10 seconds or can't stand on one leg for 5 seconds, it may mean you are at higher risk for a fall (Southerland et al., 2021).

The rate of falls was decreased by 24% as a result of clinical evaluation by a healthcare professional, personalized treatment of identified risk factors, referral where necessary, and follow-up(Gillespie et al., 2012).

The US Preventive Services Task Force discovered that follow-up and multimodal clinical evaluation and intervention were beneficial in lowering falls(Moyer and US Preventive Services Task Force, 2012).

Around 22% of people over 65 have some balance issues, especially while doing practical activities like walking and ascending stairs(Lin and Bhattacharyya, 2012).

After one injury-free fall, people should have their balance and gait checked those with balance or gait problems should undergo further testing. A history of one fall without an incident, without balance or gait issues, does not call for additional evaluation beyond the yearly fall risk assessment(Phelan et al., 2015).

Elders' health is seriously impacted by postural instability, which can lead to fall prevention anxiety and increase fall risk(Young and Williams, 2015).

Functional evaluation of balance is a method used in clinical practice and research to identify early issues with postural control and to predict fall risk in older persons in order to prevent these undesirable effects. The Performance Oriented Mobility Assessment (POMA), the Balance Evaluation Systems Test (BESTest), the Short Physical Performance Battery (SPPB), and the Berg Balance Scale (BBS) are just a few of the scales that are utilized for the functional assessment of balance(Lima et al., 2018).

Tools designed to evaluate risks need to be appropriate for the target groups in order to avoid bias or classification/identification mistakes. There are now over 50 measures documented in the worldwide literature to assess fall risk(Martinez et al., 2016).

Additionally, there are limitations of an operational nature because a scale should be inexpensive and simple to use(Cumbler et al., 2013).

2.2.11. Evaluation and Management

From a general, practical approach, falls management has three arms. The first is ongoing screening of geriatric patients for identification and correction when possible of risk factors to prevent a first fall. Screening for the occurrence of a first fall is recommended at every office visit by simply asking patients if they have fallen since the previous visit. If no fall has occurred, screening for the known risk factors in the elderly might seem easy, but it is at times a lengthy list and requires a systematic approach including the known risk factors mentioned earlier(Ambrose et al., 2015).

Immediate post-fall management depends on the presence or absence of injury. Beyond the care for visible wounds, minor or major, attention should be focused on assessing for less visible injuries (hip fracture, subdural hematoma, intracerebral hemorrhage), assessing for the presence of delirium, and providing supportive care.Prevention of subsequent falls follows the same principles used in the assessment and correction of risk factors prior to the first fall, possibly with more insight derived from the lessons learned from the recent event(Weil, 2017).

Specific therapy can be started once the causes and/or risk factors for falling have been identified. Specific assistive devices, such as walkers, canes, and shoe modifications, as well as a program of gait training under the supervision of a rehabilitation therapist, tailored to address the underlying causes such as weakness, imbalance, or arthritis, are frequently helpful for patients with gait and balance disturbances. It's crucial to carefully identify and address any additional risk factors for falling, such as visual and auditory impairments(Toren and Lipschuetz, 2017).

When there are permanent issues, remaining limits should be discussed and coping mechanisms should be devised for example, slowly

getting out of bed or using assistive technology. The removal of household dangers including frayed or loose carpets, protruding electrical cables, and unstable furniture should be recommended by doctors to their patients. Patients and their family should be made aware of the value of particular environmental modifications. Examples include enough lighting, grab rails and higher toilet seats in bathrooms, safe stair banisters, raised or lowered bed heights, and a readily accessible alarm system(Ham and Sloane, 2014).

2.2.12. Fall Prevention

Measures performed to stop the recurrence of an illness or a fall are referred to as prevention. Activities like the promotion of healthy activities that supports leading a healthy lifestyle and postpones the start of an illness or a fall are examples of prevention. screening initiatives that aid in the early identification of vulnerable individuals, such as the elderly(Kanyerinyeri and Njenga, 2022).

Preventive actions mostly target particular illnesses. The psychological well-being of society a group and individuals is improved via prevention. Preventative measures include on the needs of individuals, groups, and society at large(Helfer et al., 2020).

Since the middle of the 1980s, research on fall prevention has been ongoing. Numerous initiatives have been evaluated, and meta-analyses have shown the efficacy of several strategies such as assessment, risk factor reduction, exercise, environmental change, and education(Ham and Sloane, 2014).

As the aging populations of countries increase, a robust preventative strategy is required to reduce the incidence of falls and related injuries(Hill et al., 2018).

Like any age group, elderly people have some fundamental needs, including those for physiology and safety as well as those for love and belonging, self-esteem, and self-actualization. Their complex and

intertwined requirements span their social, emotional, and bodily dimensions. The sections that follow describe these requirements in terms of primary, secondary, and tertiary preventative efforts(Allender et al., 2013).

The care plan is guided by a set of measures in the area of fall prevention. A focused intervention program that may involve a referral to another healthcare practitioner must first be developed by the therapist after determining whether falling is a problem and after evaluating the risk factors for falls. A range of medical specialties, including physical therapy, occupational therapy, medicine, pharmacy, podiatry, and psychiatry, are involved in appropriate therapies for fall risk factors(Peel et al.,2008).

Previous systematic evaluations have looked at hospital and community-based fall prevention programs. According to the analysis, falls prevention programs generally decreased the number of fallers who fell again by 21% but did not lower the overall number of falls or fallers(Gulka et al., 2020).

Strategies for multifactorial falls prevention may be both cost-effective and cost-saving. A multifactorial intervention or preventive plan is made up of various parts that are all intended to reduce the risk factors for falling that a person's unique multifactorial assessment has found(Davis et al., 2018).

Translating and distributing successful fall prevention programs requires an understanding of elderly individuals' fall prevention knowledge, attitude, and practices as well as those of senior-serving organizations(Laing et al., 2011).

Around the world, efforts have been undertaken to lower the risk of falls and its consequences by the implementation of many and multisectoral preventative interventions. The elderly should appropriately carry out fall prevention techniques for them to be successful. It is advised that

caregivers get involved in the process of identifying risk factors and fall prevention when the elderly are reliant(Mamani et al., 2019).

Community health nursing (CHN) plays a crucial role in fall prevention, which includes education, strengthening and balancing exercises, medication reviews, and environmental modifications. The nurse may start teaching and giving interventions to guarantee continuing safety for many independent seniors who prefer to stay in their homes by using a home safety checklist as a starting point(Allender et al., 2013).

Elderly fall prevention relies heavily on the caregiver's contribution. However, this responsibility is typically added to the caregiver's existing ones, frequently without notice and for an unforeseen period of time(Baptista et al., 2012).

Since the greatest level of knowledge is connected to good attitudes and best practices in health for preventative activities to be adequately followed at home, in order to lower the likelihood of its occurrence, the knowledge of the caregivers is crucial in the case of falls among the elderly(Desta et al., 2017; Mamani et al., 2019).

Many care lack the information and skills necessary to provide the persons they support with proper care; instead, they rely on their own experiences, observations, and guidance from experts or close friends, as well as their own beliefs and intuition(Moreno-Cámara et al., 2016).

Despite the widespread implementation of fall prevention programs, gaps in the research on the subject still exist. The prevention of falls has several important goals, including the reduction of fractures and other severe injuries. Studies with sufficient power are needed to examine the impact of such initiatives on clinical and patient-reported outcomes(Bruce et al., 2021).

Primary prevention tries to identify and minimize any risk of infections, such as those brought on by hazardous or unsafe surroundings.

Lowering the negative consequences of illnesses or any symptoms is the main goal of secondary and tertiary preventative methods(Helfer et al., 2020).

Primary prevention refers to making treatments before potential negative impacts on health might happen. In order to reduce the risk of falls in the elderly, nurses should make sure that the patient uses the right fall prevention tools, such as a rollator, appropriate footwear, socks, and walking cane side rails. Most importantly, they should make sure that the environment is safe, clear of hazards, and well-lit(Starfield et al., 2008).

Primary preventive strategies protect an aged person's functional ability from decline as well as preserve that person's capacity to operate into old age. These strategies are also intended to stop fatalities from happening, particularly early in the aging stages. Providing health education, self-care, ongoing physical activity, and information about nutrition choices are some steps that may be taken to prevent falls. These actions are crucial for preserving the best possible functional skills, particularly in terms of mobility(Tomek-Roksandic et al., 2013).

Wet or slippery flooring may easily cause elderly individuals to fall, especially if they have impaired balance and eyesight. You can find examples of these slippery areas in the bathroom, kitchen, or living room. Falls may be caused by wearing improper or unsupportive footwear. A nurse must play a significant role in assisting the elderly in selecting the appropriate shoe size, particularly if the old person is receiving care in a hospital. This lowers the likelihood of falls in the elderly population(Kwan and Straus, 2014).

Examining and evaluating illnesses and other dangers that might emerge in the early stages before the signs and symptoms have materialized is a component of secondary prevention. This may be accomplished by

checking your blood pressure, temperature, blood sugar, and using different scales tools for evaluation(Ren and Peng, 2019).

Nurses may help to avoid falling incidents by taking a variety of steps, including checking for potential difficulties in the future and providing rehabilitation(Dykes et al., 2019).

When an illness or falling incident has already happened, nurses can help prevent more falling incidents from happening and other health issues from becoming life-threatening circumstances(Ren and Peng, 2019).

2.2.13. Fall Prevention Exercise Prescription

Exercise regimens with balance-challenging exercises are more successful in preventing falls than regimens without such exercises(Sherrington et al., 2011).

Exercises done while standing that encourage participants to stand with their feet closer together or on one leg, decrease the need of their hands to help them balance, and practice controlled movements of their center of mass provide an effective challenge to balance. To keep the body's center of mass within controllable distances from the base of support, balance requires anticipatory and continuous postural modifications(Tiedemann et al., 2013).

Inactivity, which is known to be a role in decreasing bodily function in the aged, can induce progressive physical disability(Thomas et al., 2018).

Physical activity (PA) does, in fact, play a crucial role in preventing a number of age-related diseases, including cancer, metabolic and cardiovascular disease, as well as loss of bone quality, to the point that the statement exercise is medicine has been made. There is ample evidence that physical activity can reduce the risk of falling in elderly persons by maintaining muscle mass and enhancing balance(Papalia et al., 2020).

Gains in physiological health are mostly influenced by exercise dosage, and exercise therapy (ET) is universally recommended by current clinical standards if the proper exercise kind and adequate intensity are given. According to recommendations, exercise should be done 1-3 times a week for more than 12 weeks to prevent falls(Hughes et al., 2019).

However, for the best results, it is advised to work for 3 hours each week, collecting a minimum of 50 hours of total exposure. The accomplishment of the required exercise dosage may be constrained by poor exercise adherence, which might have an influence on therapeutic efficacy(Sherrington et al., 2017).

The degree to which a person's conduct complies with accepted advice made by a healthcare professional is known as adhesion(Hughes et al., 2019).

One of the primary pillars of routine therapy to avoid falls in older adults is muscle training, but its effectiveness is constrained by several issues unique to the target demographic. An unmatched potential to get around these restrictions and further lower the risk of accidents and falls exists with the current development of medications meant to boost muscular mass and strength(Benichou and Lord, 2016).

2.3. Part III: Elderly Attitude toward Fall Prevention

Today it is emerging that the attitudes of elderly towards fall prevention are a single most important personal factors that may determine fall incidence among elderly people. This strong evidence requires that public health practitioners investigate how the attitudes of elderly affect the fall(Laing et al., 2011).

Attitudes can influence an individual's engagement in fall prevention behaviors. Some studies have shown that elderly may underestimate their personal fall risk, leading to a lower motivation to take preventive actions(Stevens et al., 2018).

Elderly generally exhibit a range of attitudes toward fall prevention. While many recognize the importance of preventing falls and acknowledge the potential consequences, such as injuries and loss of independence, attitudes can vary. Some elderly may be proactive and highly motivated to engage in fall prevention strategies, actively seeking information and taking necessary steps to reduce their risk(Hyeon and Park, 2018).

They may be receptive to educational interventions and willing to make lifestyle modifications. However, others may display a more passive attitude, underestimating their personal fall risk or feeling resistant to change. Fear of falling can also influence attitudes, causing elderly to limit their activities or avoid certain situations altogether. Addressing these attitudes and beliefs through tailored educational programs and personalized support can play a significant role in promoting positive attitudes and increasing adherence to fall prevention measures among elderly(Kang and Song, 2018).

A study conducted by Dockx et al., (2017), mention that a most participants had a positive attitude towards fall prevention.

2.3.1. Integrative Approaches for Falls

2.3.1.1. Movement and Exercise

Due to the fact that it is affordable, simple to learn, and falls prevention method that doesn't require expensive equipment, tai chi has grown in popularity. Even in distant locations, there are far more tai chi instructors than complete exercise programs for falls prevention, and the evidence for using tai chi for falls prevention is strong(Weil et al., 2017).

Unexpectedly, yoga does not seem to be a good method for preventing falls(Cramer et al., 2016).

2.3.1.2. Nutrition and Supplements

It has been demonstrated that the anti-inflammatory Mediterranean diet lowers the elderly's risk of falling and frailty(León-Muñoz et al., 2014).

As part of frailty management, adequate protein intake of 1.0 to 1.2 grams per kilogram of body weight per day is crucial(Landi et al., 2016).

Strong data supports the prevention of falls through vitamin D supplementation. The recommended daily intake for all seniors is between 800 and 1,000 IU. Also, advise keeping the vitamin D level at least at 30, and ideally between 40 and 60 ng/ml(Lappe and Binkley, 2015).

2.3.1.3. Androgen replacement

It is not advised to regularly take hormones to avoid falls, however low levels of dehydroepiandosterone (DHEA) and testosterone are linked to frailty and accidents(Kurita et al., 2014).

Advise customized evaluation and therapy in light of the expanding body of data that supports the therapeutic use of closely watched DHEA supplementation to maintain a normal DHEA-S level(Rutkowski et al., 2014).

Men often take 25 to 50 mg of DHEA per day, while women typically take 5 to 25 mg. Starting testosterone therapy is far more difficult and shouldn't be done just on the basis of fall risk. While there has been a number of safety concerns about taking testosterone replacement, some of them may be exaggerated, and it doesn't appear necessary to forgo full replacement in all individuals(Weil et al., 2017).

2.3.2. Reduce the Risk of Falls within the Home

Two-thirds of fatalities from falls in the home may have been avoided. Ten easy measures that can lower the risk of falls in the home are listed below:

- Install functional light switches near the bed, at the end of the hallway, and at the top and bottom of the stairs. In general, elderly individuals require two to three times as much lighting as younger people.
- Install railings and nonslip treads in appropriate places.
- Secure loose rugs or take them out, and fix or replace ripped carpet.
- Add grab bars and sticky strips to the shower and bathtub.
- Get rid of dangers like dangling electrical cables, sharp edges, slick flooring, and home objects you have to use a step stool to access.
- Reduce bed height to make it easier to get in and out.
- Wear traction-enhancing footwear, such as low-heeled, supportive shoes with rubber soles.
- Physical activity to enhance coordination, flexibility, strength, and balance.
- Refrain from misusing alcohol and prescription drugs.
- Limiting fluid intake after dinner can help you avoid waking up in the middle of the night to use the toilet(Wagner, 2014).

2.3.4. Prevention of Accidental Falls

The primary causes of falls in elderly people are unintentional ones. The major objective of reducing unintentional falls is to provide a safe environment. By offering these tools and aids, older people may move around with more ease, safety, and confidence. by making sure the beds are lowered when the client is sleeping on them. A chair's seat should be comfortable, non-slip, and have a large sitting space(Park and Shin, 2019).

For people with weak vision, a slick floor finish should be avoided. Blinds should be put to block the glare created by shiny floors in order to avoid falls. Only when required should suitable, non-slippery carpets be utilized because most older individuals may not be able to elevate or support their feet correctly, which might result in falls(Morse, 2009).

Insist that elderly use the call bell when necessary, such as when they need to use the restroom. Elderly aids and equipment must be kept nearby and within easy reach(Kobayashi et al., 2017).

By minimizing or avoiding falls, the cost of treatment is reduced, and less time and nurses are needed to care for the patient who has fallen(Luzia et al., 2014).

Hazard assessment and modifying the environment in the nursing home are two more approaches that have been demonstrated to be successful. The physiotherapist and other staff members at the senior living facility can help with these treatments and evaluations(Cheng et al., 2018.).

It is not just the client's responsibility to avoid falling; nurses may also teach the client's family members on how to be cautious. Nurses should evaluate the clients' fear of falling and the degree to which it motivates them to make adjustments when discussing the hazards of falling with them. (Registered Nurses' Association of Ontario, 2017).

Make that hip protectors are worn by elderly people who move about a lot, are restless, and have a history of osteoporosis, fractures, and other problems. As a result, there is a lower possibility of hip fractures. Fall prevention education should be given in a variety of simple-to-understand formats, including oral, written, and electronic sources. For those who have fallen in the past or are at risk of falling, it's crucial to reevaluate their medication. The adverse effects of several medications taken by the elderly can be severe and include fatigue, sleepiness, dizziness, and restlessness. (RNo, 2017).

Elderly have the right to accept or deny participation in their care about falls, and the decision they make when arranging that care must be honored. Individual requirements should guide the planning and design of interventions. The nurse should prepare a strategy and take into account

variables including the patient's health, risks, age, and overall physical condition(Registered Nurses' Association of Ontario, 2017).

2.4. Word Health Organization Falls Prevention Model within the Active Ageing Framework

Based on the WHO Active Ageing Policy Framework, a proactive and adaptable public health strategy rooted on the principles of health promotion and disease prevention, this model presents a comprehensive, multisectoral approach to falls prevention.

2.4.1. The need

The paradigm for public health must be changed to one that emphasizes a systematic, coordinated, and all-encompassing approach to managing the world's rising incidence of non-communicable diseases (NCDs). One such systematic, coordinated, and all-encompassing effort is the WHO Falls Prevention Model, which aims to lessen the burden of one of the major causes of age-related injuries and non-communicable illnesses linked to old age(WHO, 2008).

The injuries incurred as a result of a fall in old age are nearly always more severe than when same fall happens earlier in life, according to the WHO Active Ageing Framework. For injuries of same severity, older persons are more disabled, require longer hospital stays, longer rehabilitation times, have a larger likelihood of reliance in the future, and have a higher mortality risk(van Wijck et al., 2019).

2.4.2. The foundation

A fall prevention approach that works must take into account the cultural realities of the society it is intended to benefit. Building awareness of the significance of falls prevention and treatment, improving the assessment of individual, environmental, and societal factors that increase the likelihood of falls, and facilitating the design and implementation of culturally appropriate evidence-based interventions that will significantly

reduce the number of falls among older people make up the three pillars of the WHO Falls Prevention Model(WHO, 2008).

2.4.3. Three pillars of the WHO Falls Prevention Model:

Pillar One: Building awareness of the importance of falls prevention:

All facets of society that are affected by falls and injuries from falls need to be made more aware of the significance of falls. The constituents (elders, family and carers, youth and young adults, the community, the health sector, the government, and the media) will need to become more aware(WHO, 2008).

Building awareness involves more than just informing people and groups about the importance of falls as modifiable risk factors for chronic illnesses and higher mortality. Education on the rising economic and social costs of failing to manage falls and fall-risk factors in a systematic manner is another aspect of it(Chidume, 2021).

Pillar Two: Improving the identification and assessment of risk factors and determinants of falls:

The improvement of evaluation and the identification of essential variables in each of the domains health and social services; behavioral; personal; physical settings; social and economic are necessary for a systematic multisectoral plan to reduce falls and fall-related injuries(WHO, 2008).

Pillar Three: Locating and putting into practice excellent and feasible approaches Falls are complicated occurrences that are brought on by a number of innate limitations and impairments, which are frequently exacerbated by a number of environmental risks(Cheng et al., 2018).

Successful multifaceted intervention programs have included elements like medical assessment, prescription medication monitoring, home safety checks and advice, tailored exercise and physical activity, environmental changes, assessment of readiness to change behavior,

training in transfer skills and gait, and client referral to healthcare professionals. (WHO, 2008).

2.5. Challenges in Changing Behavior for Prevention of Falls in the Elderly.

Changing the beliefs, attitudes, and behaviors of older people themselves, the health and social care providers who offer services, and the larger communities where older people reside are essential to the effectiveness of such treatments(Goodwin et al., 2011).

From the raise awareness in the general population; promote benefits that fit with a positive self-identity; social encouragement to engage older people; ensure that the intervention is designed to meet the needs, preferences and capabilities of the individual; encourage self-management and draw on validated methods for promoting and assessing the processes that maintain adherence, especially in the longer term(WHO, 2008).

2.6. Theoretical framework(Health Belief Model):

American public health academics started using psychological models in the 1950s to improve the efficacy of health education initiatives. It was previously established that socioeconomic level, sex, ethnicity, and age were all connected with patterns of behavior related to preventive health as well as diverse uses of health services. It was hypothesized that other potentially modifiable individual characteristics linked to health-related behavior patterns could be changed through educational interventions, and thus shift health behavior patterns at population levels, despite the fact that demographic and socioeconomic characteristics could not be changed through health education(Abraham and Sheeran, 2015).

One of the first models to include behavioral science theories into its predictions of health behaviors was the HBM. This was accomplished through concentrating on people's attitudes and beliefs(McEwan and Wills, 2021).

The health belief model serves as the foundation for or is incorporated into interventions to improve perceptions of personal risk, encourage actions to lower or eliminate the risk, and—in a later iteration—to foster a sense of self-efficacy to make the necessary changes. The paradigm acknowledges and addresses the social environment in which health behaviors occur while keeping an individual at its center(Green et al., 2020).

2.7. Previous Study:

A quantitative design, exploratory cross-sectional analysis, and correlation were conducted by Hakami (2019) in Saudi Arabia to assess elderly people's knowledge about home fall prevention. The total study subjects were 302 elderly people over the age of 55. Results: The elderly subjects were between 55 and older. The majority, 79.5% female (72.5%), were between the age groups (55–64 years). About 45.0% had a history related to falls. The majority (75.7% and 25.7%) of them mentioned the main causes of falls related to environmental and medical causes, respectively. A statistically significant correlation was found between elderly people's socio-demographic profile and their knowledge' related to fall prevention measures. Except for income, no significant correlation was found. Conclusion: According to the findings of this study, it is obvious that slightly more than two-thirds of elderly people correctly identified most categories related to fall prevention measures at home. A statistically significant correlation was found between socio-demographic variables for elderly people and their knowledge of home fall prevention.

Francis-Coad and others (2019) conducted a cross-sectional survey was administered to 70 elderly people aged above 65 years living in Australia and Wales. A convenience sample was drawn from the population. The aim of this study was to explore residents' levels of knowledge and awareness of falls risks, falls prevention, opportunities,

motivation, and confidence to adopt falls prevention strategies in Australia and Wales. Results: demographic characteristics: 71.4% were female, and their ages ranged from 68 to 99 years of age (mean 85.5). Residents' capability (knowledge and awareness) regarding falls and fall prevention (78.5%) thought that the elderly who fell were likely to sustain a serious injury. 34.3% thought elderly people fell over because of their behavior. Conclusion: Giving people useful information and tools on falls prevention may help them adopt and put falls prevention measures into practice in their everyday lives, with staff assistance if necessary.

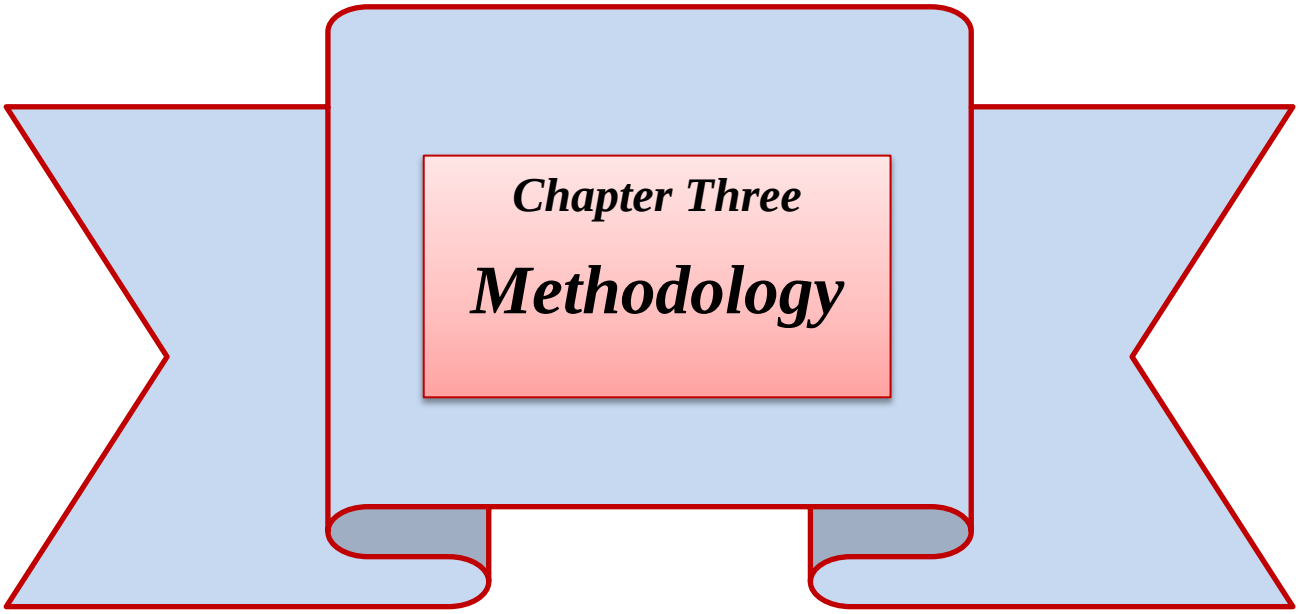
A descriptive study with a cross-sectional design by Abdulsaheb and Fadhil was carried out on a total of 403 elderly, aged above 60 years, attending a geriatric clinic at Baghdad Teaching Hospital during 2017 to evaluate the knowledge of elderly clients toward the prevention of falls and to determine the socio-demographic characteristics of the elderly and their association with the knowledge toward the prevention of falls in the elderly. Result: according to socio-demographic characteristics, the mean age of the participants was 68.55.4 SD years; about 62.5%) of the elderly sample age group of (60–69) years old were women; 40.4%) of the sample had a college certificate; 41.4%) was retired; 73.2%) was married; and 73.2%) had a history of fall attacks, even a trivial one, during the last year. Also, the findings showed that 52.6% of participants had information about the risk and seriousness of falls in the elderly, and 30.8% had information about fall prevention in the elderly. About 17.9% believed that a strength and exercise program was the best intervention, 11.9% believed that either the use of assistive aids and devices or family support was the best intervention, and just 8.9% believed that the review of medication was the best step to prevent falls among the elderly, while 56.3% had no knowledge about how to prevent falls. Conclusion: The study concluded that the

participants had a low level of knowledge and practice about fall prevention in the elderly.

A cross-sectional study was conducted in April and May 2015 by Nirmala Gamage, Nirmala Rathnayake, and Gayani Alwis, with the participation of 300 community members aged above 65 years in Sri Lanka. The study's goal is to assess elderly people's knowledge and perceptions of falls in order to improve their health. The cluster sampling method was used. Results: Socio-demographic characteristics show that 58% of participants were female. The majority of the sample (79.3%) was not employed. Education showed (61.3%) that it went beyond the secondary level. Among the participants, 34.3% experienced at least one fall during the last 12-month period. The majority (72.7%) considered proper nutrition a protective factor for falls, while only 55.7% were aware of the importance of lifestyle to prevent falls. Among the participants, 73.7 percent recognized the protective environmental factors against falls. Conclusions: In this cross-sectional study, elderly people had an average level of knowledge and a positive perception towards fall prevention. Found significant associations between level of knowledge and age, educational status, and history of falls. This study emphasizes the importance of increasing the level of knowledge on preventive measures.

Laing and others between December 2004 and January 2005 sample were above 65 years of age and had experienced a fall or had concerns about falling. To assess elders' knowledge of, attitude toward, and participation in fall prevention. Result: A sample of 101 elderly respondents completed interviews. About (67%) were female; 60% were over the age of 75; and 50% were married. Almost half had sustained a fall in the past 12 months. Elderly fall prevention attitude show 34% of elders reported falls to be one of their least important health concerns. Medication management, strength and balance training, AD use training, and home

safety were the fall prevention practices perceived as important by the largest proportion of the elderly (65%, 59%, 49%, and 42%, respectively). Elderly people perceived individual risk assessment and fall prevention education to be least important (29% and 22%, respectively). Knowledge and practices, as shown by unaided awareness of fall prevention best practices, were generally low. Unaided, a larger proportion of the elderly were more likely to name gait-related activities moving slowly, wearing safe shoes, and using canes or walkers and home safety improvement (69% and 21%, respectively). Conclusions: We should address the importance of fall prevention for elderly health, educate about specific practices, and emphasize the importance and effectiveness of fall prevention strategies for preserving function, independence, and well-being.


Chapter Three
Methodology

Chapter Three

Methodology

The present chapter focuses on the method of the study included the design which is used in this study, administrative agreements, ethical consideration, study preparation, validity of the questionnaire, pilot study, reliability of the questionnaire, sample selection, data collection methods, and statistical data analysis.

3.1. Design of the Study:

Quantitative study cross-sectional design data collecting methods to assess the elderly knowledge and attitudes at primary health care centers toward prevention of falls. The study was conducted through the 9th Octobar 2022 and ended in 12th July 2023 in the Primary Health Care Centers(PHCs)-Center sectore in Kerbala, Iraq.

3.2. Administrative Arrangements:

The official permissions were obtained from relevant authorities before collecting the study data as follow:

1. Protocol of research and official permission taken from University of Kerbala/ College of Nursing to conduct the study.
2. The title and questionnaire were presented to the Ethics Committee formed within the College of Nursing, which reviewed the study tools (questionnaire), and therefore agreed to conduct the study.
3. In the last step of the administrative arrangements, an official letter by the (Training Department and Development) Kerbala Health Directorate was taken.
4. An official permission presented at primary health care sectors to formally access the primary health care centers was also taken.
5. In addition, the consent of the elderly people to participate in the study, after explaining the objectives and usefulness of the study to them and

assuring that all information provided will be confidential for scientific and research purposes(autonomy and privacy).

3.3. Ethical Considerations:

Ethical obligations are one of the most important things that must follow and adhere it when doing the study. Before starting the collection of the data from the PHCs that has been identified for the study, the researcher should clarify the main purpose and desired goal of conducting this study for the sample to be included in the study, as well as adhere to the strict confidentiality of the data taken from the study sample and pledge to use it for scientific purposes related to the study only. Before the beginning of the collection of information from the sample who are participating in the study, the investigator provided a brief explanation about the research methodology of the project, the objective of conducting it, and the responsibilities of the elderly people who participate in this research, in order to give everyone a complete and clear picture of the study to be carried out. On the other hand, the investigator emphasized that all elderly people who are participating in the study had the right not to complete their participation and withdraw from this study in case that they felt uncomfortable or annoyed with some of the items in the questionnaire that was prepared as a research tool or the researcher's method of collecting data or anything else(Appendix A1).

3.4. Setting of the Study:

A simple random sampling method was used during selection of (8) from out of (14) main Primary Health Care centers(PHCs) at Center sector in Kerbala city. In order to achieve this, separate clippings were used, each containing the name of a center of primary health care distributed in this sector. Afterwards, eight scraps were randomly selected for the purpose of the study(Appendix B).

3.5. Study Sample:

A non- probability convenience sample consisted of (200) elderly from women and men who were visiting the 8 selected PHCs for many causes.

The total sample of elderly aged above 60 years was selected of (8) PHCCs which involved in the study in Kerbala city. The total sample of elderly were selected as 10% from the average of the (3 previous monthly) visits to the PHCCs(Appendix B).

The study sample was selected according to the following criteria:

3.5.1. Inclusion Criteria:

1. Elderly age 60 years and above.
2. Elderly who gave agreement to participate in the study sample.

3.5.2. Exclusion Criteria:

1. The elderly who participate in the pilot study sample.
2. Elderly with severe medical problems who cannot tolerate the interview and uncooperative individuals.
3. Elderly who did not complete the answer to all questions

3.6. Instrument of the study:

To assess elderly knowledge and attitude toward fall prevention, the researcher adopted the questionnaire in order to achieve the objectives of the study. The questionnaire consists from (4) parts (Appendix C).

3.6.1. The demographic characteristics for elderly:

Self administrated questionnaire related to the demographic characteristics of the elderly such as sex, age, level of education, material status, occupational status, body mass index.

In the body mass index the researcher used the Body Mass Index Scale (BMI) from World Health Organization (WHO) to clarify the level of body mass index for elderly through following formula:

$$BMI = \frac{\text{weight (kg)}}{\text{height (m}^2\text{)}}$$

level of body mass index according to WHO:

BMI < 18.5:	Below normal weight
BMI >= 18.5 and < 25:	Normal weight
BMI >= 25 and < 30:	Overweight
BMI >= 30 and < 35:	Class I Obesity
BMI >= 35 and < 40:	Class II Obesity
BMI >= 40:	Class III Obesity

3.6.2. Medical History for Elderly:

It includes six items: having had a fall in the past six months; having chronic diseases; having a problem with your sense of sight; using crutches; being a smoker or alcoholism.

3.6.3. Assessment of the Elderly's Knowledge of Fall Prevention:

It includes (26-item) divided to three domain:

First domain: Elderly knowledge about concept of fall and prevent biological risk factors(6- items).

Second domain: Elderly knowledge about prevent environmental risk factors(10- items).

Third domain: Elderly knowledge about prevent behavioral risk factors(10-items).

3.6.4. Elderly Attitude toward Fall Prevention:

This part it consists from (10 –items) that used to assess the elderly attitude about fall prevention.

3.7. Validity of the questionnaire:

To make the study instrument more valid, the adopted instrument was determined through the use of panel of experts who have more than five years of experience at their jobs field to investigate clarity, relevancy

and adequacy of the questionnaire to measure knowledge and attitude for elderly.

A preliminary copy of the questionnaire were designed and presented to a panel of (12) experts. They were (4) faculty members from College of Nursing/ Kerbala University; (3) faculty members from College of Nursing/ Baghdad University ; (2) faculty members from College of Nursing/ Kufa University ; (1) faculty member from College of Nursing/ Babylon University; (1) faculty member from College of Nursing/ Warith Al-Anbiyaa University; (1) faculty members (community medicine) from College of Medicine/ University of Kerbala(Appendix D).

Polit and Beck (2004) mentioned that the panel typically depends on at least three experts, but a larger number of them may be advisable if the construct is complex.

Those experts were reviewed and evaluated the questionnaire items, and all of them agreed on (48) items of the questionnaire, which have been clear and adequate for measurement of the study. Minor modification and changes were done on few items according to the experts' comments and suggestions.

3.8. Pilot Study:

A pilot study was conducted for the determination the validity of the study instruments. Before starting of the data collection, a pilot study is carried out to determine the study instrument’s reliability. It was done from the period of (11 th to 15 th December) 2022, on a pilot study sample that consists of (20) elderly which were selected randomly who have the same criteria as the original sample of the study and excluded from original sample of the study.

3.8.1. The pilot study has achieved the following objectives:

1. To determine the reliability of the questionnaires.

2. To find out whether the wording of the questions is clear and easy to be understood.

3. To determine whether any modifications were necessary to be made in instruments.

4. To estimate the average time required for interview.

After the pilot study all these purposes were achieved. Nieswidomy (2014) mentioned a pilot study can be used to evaluate an existing instrument or to test a new instrument, it can also be used to determine how long it will take to conduct the data collection.

3.8.2. The Result of Pilot Study showed that:

1. The items of the instruments are clear, easy to understand and adequate to investigate the phenomenon underlying the study.

2. Minor modifications were made relative to few items.

3. The average time required for answering questionnaire is nearly (10-20) minute.

4. The validity of the instruments were determined.

3.9. Reliability of the Instruments

The reliability of the instruments is determined through the computation of Alpha Cronbachs' on (20) elderly and test-retest method which used for determining the equivalence of the scales by application of Statistical Package for Social Sciences (SPSS) version 26.

Such findings of the pilot study reveal that the study instruments are adequately reliable measures for underlying the present study and its results show that there is an acceptance level of Alpha Cronbachs' value for the questionnaire, as in (Table 3-1).

Table (3-1): Reliability of the Study Instrument (N=20)

Methods of Reliability	Studied criteria	Standard lower bound	Actual values	Assessment
Alpha (Cronbach)	Knowledge (26-items)	0.70	0.85	Pass
	Attitude (10-items)	0.70	0.78	Pass

Alph Cronbach (α) for the reliability of questionnaire (internal consistency) through following formula:

$$\alpha = \frac{K}{K-1}\left[1 - \frac{\sum_{i=1}^{K}\sigma_{ii}}{\sum_{i=1}^{K}\sum_{j=1}^{K}\sigma_{ij}}\right]$$

For illustration of the equation, where K is the number of items (questions) and (σij) is the estimated covariance between items i and j. Note the (σii) is the variance (not standard deviation) of item I(Hintze and Utah, 2015).

3.10. Methods of Data Collection

The data was collected through the use of a questionnaire. Which started from the 19th December 2022 to 27th February 2023. The questionnaire was designed as a self-reported questionnaire with a Likert scale to assess the knowledge and attitudes of elderly. Investigator utilized interview questionnaire a mean to data collection for illiterate elderly, then getting the official approval from primary health care. The investigator selected the subjects that meet inclusion criteria. The data was collected after getting permission from the subjects. The time consumed for filling the questionnaire is 10-20 minutes.

3.11. Rating and Scoring

For the purpose of scoring instrument's items, a 3-Likert scale was used and scored as follows: I don't know (1), uncertain (2), and I know (3)

for knowledge scale; and scored as : disagree (1), neutral (2), and agree (3) for attitude scale.

The overall score of knowledge was estimated by calculating the range score for mean of total score after calculating the range from minimum score and maximum score; the range score rated into three levels and scored as follows: Poor= 26 – 43.33, Fair= 43.34 – 56.67, Good= 56.68 – 78.

The level of knowledge for each item in scale was estimated by calculating the cutoff point for the mean of score and rated into three levels also as follows: Poor= 1– 1.66, Fair= 1.67 – 2.33, Good= 2.34 – 3.

The overall score of attitudes was estimated by calculating the range score for mean of total score after calculating the range from minimum score and maximum score; the range score rated into tow level and scored as follows: Negative= 10 – 20, Positive= 20.1 – 30 .

The level of attitudes for each item in scale was estimated by calculating the cutoff point for the mean of score and rated into tow level also as follows: Negative= 1 – 2, Positive =2.1– 3.

3.12. Data Analysis

The data were analyzed and interpreted through use of the application of Statistical Package for Social Sciences (SPSS), version 26.0.

3.12.1. Descriptive Statistical Tests

- Frequency (F): In statistics the frequency of an event is the number of times the event occurred in an experiment or study(Kenny & Keeping, 2022). It was used to describe the socio-demographic characteristics of elderly people as well as their levels of knowledge and attitudes.

- Percentage (%): a number or rate that is expressed as a certain number of parts of something divided into 100 parts(Merriam-Webster, 2022). It was used to describe the socio-demographic characteristics of elderly people as well as their levels of knowledge and attitudes.

- Mean of Score (M.S): The arithmetic mean is the sum of the individual values in a data set divided by the number of values in the data set(Friis & Chernick, 2003). It was used to determine the levels of knowledge and attitudes.

- Standard Deviation: is a measure that is used to quantify the amount of variation or dispersion of a set of data values(Bland & Altman, 1996). It was used to determine the levels of knowledge and attitudes.

3.12.2. Inferential Statistical Tests

- Cronbach Alpha (α): Cronbach's alpha coefficient measures the internal consistency, or reliability, of a set of survey items. Use this statistic to help determine whether a collection of items consistently measures the same characteristic. Cronbach's alpha quantifies the level of agreement on a standardized 0 to 1 scale. Higher values indicate higher agreement between items(Polit & Hungler, 2013). It was used to estimate the internal consistency of the study instrument.

-Spearman's rank correlation coefficient: The measure of the strength of the correlation for the measurable and non-measurable features that can be set in the form of a correlation series. Spearman's coefficient has similar properties as Pearson's linear correlation coefficient, since it shows the force (absolute value) and the direction (sign) of the correlation of the two features of the analyzed population. The value of this coefficient is in the closed interval [-1, 1]. And the closer to the ends of this range, the stronger the correlation between the features (Borowski, 2022). It was used to determine the relationship among elderly's knowledge and attitudes with their variables included in this study.

-Point Biserial Correlation: The point biserial correlation, r pb, is the value of Pearson's product moment correlation when one of the variables is dichotomous, taking on only two possible values coded 0 and 1. The point biserial correlation is a useful measure of effect size, that is, statistical

magnitude, of the difference in means between two groups. It is based on Pearson's product moment correlation (Kornbrot, 2014). It was used to determine the relationship among elderly’s knowledge and attitudes with their variables included in this study.

3.13 Limitations of the Study:

The present study has limitations due to a lack of previous studies related to the topic of interest to present it as supportive of the study's findings.

Chapter Four

Results of the Study

Chapter Four

Results of the Study

This chapter presents the descriptive analysis of the sample related to socio-demographic characteristics of elderly people; and describes their levels of knowledge and attitudes about fall prevention. This chapter also determines the relationship among elderly's knowledge and attitudes with regard to their sociodemographic characteristics.

The statistical procedures were applied for the purpose of analyzing the results of the present study; the results were organized and interpreted. Those results are based on the sample responses to the study instrument.

Table (4-1): Distribution of Participants according to their Socio-demographic Characteristics

List	Characteristics		f	%
1	**Sex**	Male	66	33
		Female	134	67
		Total	***200***	***100***
2	**Age** **M±SD= 65.67 ± 3.7**	60 – 64 year	91	45.5
		65 – 69 year	79	39.5
		70 – 74 year	30	15
		Total	***200***	***100***
3	**Level of education**	Doesn't read & write	7	3.5
		Read & write	30	15
		Primary school	68	34
		Intermediate school	34	17
		Secondary school	33	16.5
		Diploma degree	16	8
		Bachelor degree or more	12	6
		Total	***200***	***100***

Table (4-1): Continued

List	Characteristics		F	%
4	**Marital status**	Unmarried	15	7.5
		Married	103	51.5
		Divorced	15	7.5
		Widowed/er	63	31.5
		Separated	4	2
		Total	***200***	***100***
5	**Occupation**	Unemployed/Housewife	163	81.5
		Employee	5	2.5
		Retired	32	16
		Total	***200***	***100***
6	**Body mass index**	Underweight	0	0
		Normal	12	6
		Overweight	78	39
		Obesity I	106	53
		Obesity II	4	2
		Obesity III	0	0
		Total	***200***	***100***

f: Frequency, %: Percentage, M: Mean, SD: Standard deviation

The descriptive analysis in table 4-1 shows that bout two third of elderly are females (67%).

The average age for elderly refers to 65.67±3.7 years in which 45.5% of them seen with age group of 60-64 years and 39.5% are with age group of 65-69 year.

Regarding level of education, the highest percentage refers to primary school graduation among 34% of elderly.

The marital status reveals that more than half of elderly are married (51.5%) while 31.5% of them are seen widowed or widowers.

The occupational status indicates that 81.5% of elderly are either unemployed or housewives.

Concerning body mass index, more than half of elderly have obesity class I (53%) according to body mass index calculator and 39% are overweight.

Table (4-2): Distribution of Participants according to their previous Medical History (N=200)

List	History		f	%
1	**Have you had a fall in the past six months?**	No	107	53.5
		Unsure	8	4
		Yes	85	42.5
2	**Hypertension**	No	114	57
		Yes	86	43
3	**Diabetes mellitus**	No	158	79
		Yes	42	21
4	**Cardiovascular diseases**	No	190	95
		Yes	10	5
5	**Renal diseases**	No	169	84.5
		Yes	31	15.5
6	**Depression**	No	180	90
		Yes	20	10
7	**Vision problems**	No	37	18.5
		Yes	163	81.5
8	**Use crutches to walk**	No	186	93
		Sometimes	1	.5

		Yes	13	6.5
9	**Smoking**	No	164	82
		Sometimes	15	7.5
		Yes	21	10.5
10	**Alcohol drinking**	No	200	100
		Sometimes	0	0
		Yes	0	0

f: Frequency, %: Percentage

Table (4-2) presents the variables related to medical history for elderly people; it indicates that 42.5% of participant had a fall in the past six months, 43% of participants have positive history of hypertension, only 21% are associated with history of diabetes mellitus, only 5% have history of renal disease, only 10% associated with depression according to their response, 81.5% have history of vision problems, only 6.5% use crutches to walk, only 10.5% are smoking, and all participants did not drink alcohol (100%).

Table (4-3): Assessment of the Elderly's Knowledge about Concept of fall and Biological Factors.

List	Knowledge	Scale	f (%)	M	Assess.
1	A fall is every event that causes a person to fall unintentionally to the ground or any surface or any place from a higher height.	I don’t know	65(32.5)	2.09	Fair
		Uncertain	53(26.5)		
		I know	82(41)		
2	The use of appropriate medical glasses reduces the risk of falling as a result of poor vision.	I don’t know	105(52.5)	1.67	Fair
		Uncertain	56(28)		
		I know	39(19.5)		
3	The use of a wide head hat to protect the eyes from the sun's rays contributes to the prevention of falls.	I don’t know	94(47)	1.70	Fair
		Uncertain	73(36.5)		
		I know	33(16.5)		
4	It is preferable to visit a doctor by the elderly in case of feeling a loss of hearing.	I don’t know	79(39.5)	1.99	Fair
		Uncertain	44(22)		
		I know	77(38.5)		

5	Cleaning the ears of wax conglomerates increases the ability to hear and avoid accidental falls.	I don't know	111(55.5)	1.65	Poor
		Uncertain	48(24)		
		I know	41(20.5)		
6	Getting up quickly from bed or from a chair may cause dizziness and falls.	I don't know	113(56.5)	1.67	Fair
		Uncertain	40(20)		
		I know	47(23.5)		
Total average				***1.79***	***Fair***

M: Mean, Assess: Assessment
Poor= 1 – 1.66, Fair = 1.67 – 2.33, Good= 2.34– 3

This table presents the items of elderly's knowledge about concept of fall and biological factors; the findings indicate that they show fair level of knowledge regarding this domain as seen with mean score of total average (Mean= 1.79), in which the mean scores show fair among all items except item (Cleaning the ears of wax conglomerates increases the ability to hear and avoid accidental falls) that show poor level.

Table (4-4): Assessment of the Elderly's Knowledge about Environmental Factors.

List	Knowledge	Scale	f (%)	M	Assess.
1	Pay attention to the efficiency of lighting in the home to be safer for the elderly from falls.	I don't know	81(40.5)	2.05	Fair
		Uncertain	28(14)		
		I know	91(45.5)		
2	Taking care that the floor of the house is flat without exposed edges, which reduces the risk of falling.	I don't know	92(46)	1.95	Fair
		Uncertain	26(13)		
		I know	82(41)		
3	Taking care of the floor to be free of obstacles and removing water and fat from the carpet reduces the risk of falling.	I don't know	82(41)	2.06	Fair
		Uncertain	25(12.5)		
		I know	93(46.5)		
4	Determining a safe place for the kitchen and eating area reduces the risk of falling	I don't know	116(58)	1.69	Fair
		Uncertain	30(15)		
		I know	54(27)		
5	The use of plastic chairs to sit on by the elderly increases the risk of falling.	I don't know	64(32)	1.98	Fair
		Uncertain	77(38.5)		
		I know	59(29.5)		
6	Moving carpets on stairs cause falls.	I don't know	65(32.5)	1.92	Fair
		Uncertain	86(43)		
		I know	49(24.5)		

7	It is preferable that the stair treads be less than 20 centimeters to avoid falling accidents.	I don't know	70(35)	2.11	Fair
		Uncertain	39(19.5)		
		I know	91(45.5)		
8	Replacing torn room rugs is essential to avoid falls.	I don't know	90(45)	1.88	Fair
		Uncertain	45(22.5)		
		I know	65(32.5)		
9	Installing bars that help with gripping and standing in the bathroom reduces falls.	I don't know	71(35.5)	2.04	Fair
		Uncertain	51(25.5)		
		I know	78(39)		
10	Using liquid soap in the bathroom makes the elderly safer from falling, compared to solid soap.	I don't know	121(60.5)	1.56	Poor
		Uncertain	46(23)		
		I know	33(16.5)		
Total average				***1.92***	***Fair***

M: Mean, Assess: Assessment
Poor= 1 – 1.66, Fair = 1.67 – 2.33, Good= 2.34– 3

This table presents the items of elderly's knowledge about environmental factors; the findings indicate that they show fair level of knowledge regarding this domain as seen with mean score of total average (Mean= 1.92), in which the mean scores show fair among all items except item *(Using liquid soap in the bathroom makes the elderly safer from falling, compared to solid soap)* that shows poor level.

Table (4-5): Assessment of the Elderly's Knowledge about Behavioral Factors

List	Knowledge	Scale	f (%)	M	Assess.
1	Walking in socks on the polished floor exposes the elderly to fall.	I don't know	89(44.5)	1.73	Fair
		Uncertain	77(38.5)		
		I know	34(17)		
2	The phone should be in an easily accessible and comfortable place.	I don't know	56(28)	2.13	Fair
		Uncertain	61(30.5)		
		I know	83(41.5)		
3	Memorizing emergency numbers on the phone is necessary for the elderly.	I don't know	43(21.5)	2.31	Fair
		Uncertain	52(26)		
		I know	105(52.5)		
4	Taking medications without consulting a doctor is one of the causes of falls for the elderly.	I don't know	99(49.5)	1.79	Fair
		Uncertain	45(22.5)		
		I know	56(28)		
5	Inform the doctor or pharmacist if side effects of treatment appear.	I don't know	94(47)	1.75	Fair
		Uncertain	63(31.5)		
		I know	43(21.5)		

6	Eating a balanced diet reduces the risk of falling.	I don't know	172(86)	1.23	Poor
		Uncertain	10(5)		
		I know	18(9)		
7	Walking outside in the sun in the morning reduces the risk of falls.	I don't know	52(26)	2.09	Fair
		Uncertain	78(39)		
		I know	70(35)		
8	Fall in the elderly is associated with colder climates.	I don't know	186(93)	1.11	Poor
		Uncertain	7(3.5)		
		I know	7(3.5)		
9	Certain types of exercise reduce the risk of hip fractures and falls.	I don't know	172(86)	1.23	Poor
		Uncertain	10(5)		
		I know	18(9)		
10	Reducing fluid intake after dinner contributes to reducing falls.	I don't know	166(83)	1.21	Poor
		Uncertain	27(13.5)		
		I know	7(3.5)		
Total average				***1.36***	***Poor***

M: Mean, Assess: Assessment
Poor= 1 – 1.66, Fair = 1.67 – 2.33, Good= 2.34– 3

This table presents the items of elderly's knowledge about behavioral factors; the findings indicate that they show poor level of knowledge regarding this domain as seen with mean score of total average (Mean= 1.36), in which the mean scores show poor among items 6, 8, 9, and 10 while they show fair level among items 1, 2, 3, 4, 5, and 7.

Table (4-6): Overall Assessment of the Elderly's Knowledge about Fall Prevention

Knowledge	f	%	M	SD	Assessment
Poor	77	38.5	46.03	13.925	Fair
Fair	86	43			
Good	37	18.5			
Total	***200***	***100***			

f: Frequency, %: Percentage
M: Mean for total score, SD: Standard Deviation for total score
Poor= 26 – 43.33, Fair= 43.34 – 56.67, Good= 56.68 – 78

This table indicates that elderly people show fair level of knowledge about fall prevention as reported among 43% of them (M±SD= 46.03 ± 13.925).

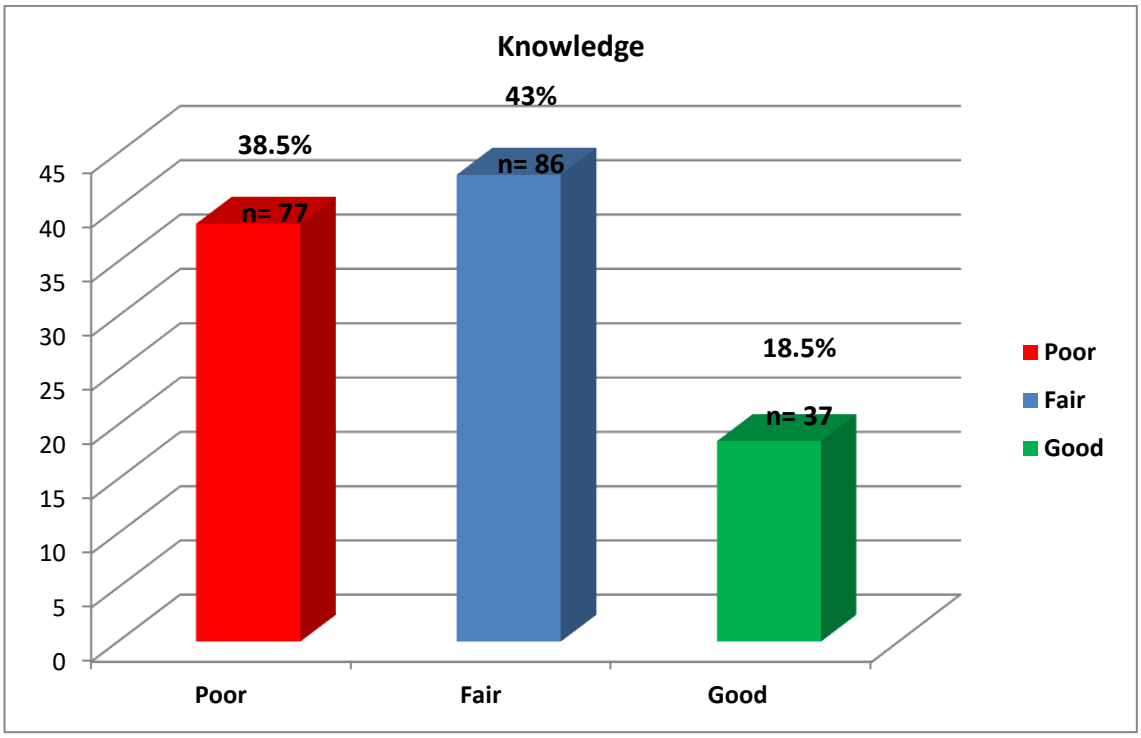


Figure (4-1): Overall Level of Elderly's Knowledge about Fall Prevention (N=200)

This figure shows that 43% of elderly people associated with fair level of knowledge about fall prevention.

Table (4-7): Assessment of the Elderly's Attitudes toward Fall Prevention (N=200)

List	Attitudes	M	Assess.
1	I believe that falling is a common and serious problem for the elderly. Falling may lead to various injuries, such as fractures and wounds, and sometimes it may lead to death.	1.79	Negative
2	It is important to examine the eyesight of the elderly at least once a year by an ophthalmologist.	1.84	Negative
3	Paying attention to the sense of hearing is very important because it can cause balance and dizziness problems.	1.80	Negative
4	In the case of solid objects on the ground, such as children's toys, remove them.	1.77	Negative

5	Placing items that are used in low or medium shelves reduces the risk of falling.	1.71	Negative
6	It is important to place light bulbs on both sides of the bed to reduce the risk of falls.	1.17	Negative
7	The use of shoes with a high friction base is safer for the elderly than falling.	1.23	Negative
8	The use of shoes with low or medium heels is safer for the elderly than falling	1.61	Negative
9	It is very important to place an electric lighting switch on the upper side (above the stairs) and the lower side (under the stairs) to light the stairs.	1.59	Negative
10	The use of a circular staircase railing is safer than a rectangular staircase railing and reduces the risk of falling.	1.50	Negative

M: Mean, Assess: Assessment
Negative= 1 – 2, Positive =2.1– 3

This table presents the items of elderly's attitudes about fall prevention; the findings indicate that they show negative attitudes among all items.

Table (4-8): Overall Assessment of the Elderly's Attitudes toward Fall Prevention

Attitudes	f	%	M	SD	Assessment
Negative	156	78	16.00	5.412	Negative
Positive	44	22			
Total	***200***	***100***			

f: Frequency, %: Percentage
M: Mean for total score, SD: Standard Deviation for total score
Negative= 10 – 20, Positive= 20.1 – 30

This table indicates that elderly people show negative attitudes toward fall prevention as reported among 78% of them (M±SD= 16.00 ± 5.142).

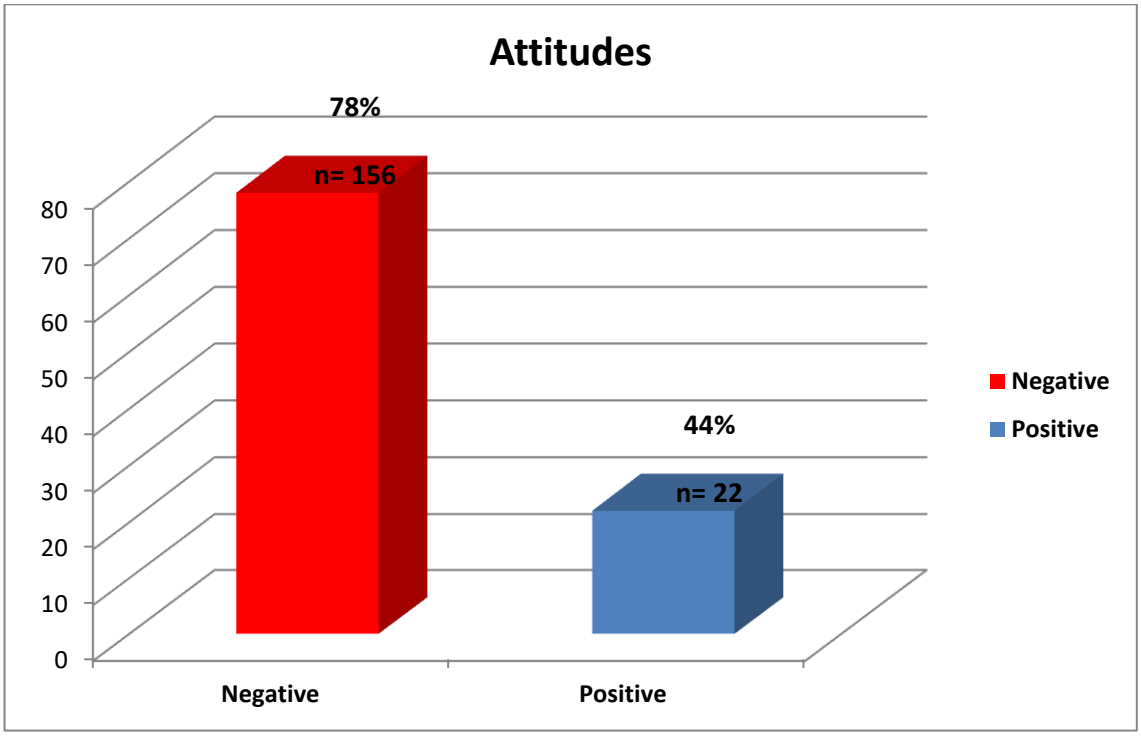


Figure (4-2): Overall Levels of Elderly's Attitudes toward Fall Prevention (N=200)

This figure shows that 78% of elderly people associated with negative attitudes toward fall prevention.

Table (4-9): Relationships between Elderly's Knowledge and their Sex

Variables		Knowledge				Relationship
		Poor	Fair	Good	Total	
Sex	Male	17	36	13	66	r_{pb} = .199
	Female	60	50	24	134	P-value= .005
	Total	77	86	37	200	Sig= H.S

r_{pb}= point biserial correlation coefficient, P= Probability, Sig= Significance, N.S= Not significant, S= Significant, H.S= High significant

This table indicates that there is strong positive relationship between elderly's knowledge with their sex evidenced by high significant correlation at p-value= .005.

Table (4-10): Relationships between Elderly's Knowledge and their Age Group

Variables		Knowledge				Relationship
		Poor	Fair	Good	Total	
Age	60 – 64 year	32	37	22	91	r_S = .068 P-value= .335 Sig= N.S
	65 – 69 year	33	35	11	79	
	70 – 74 year	12	14	4	30	
	Total	77	86	37	200	

r_S = Spearman correlation coefficient, P= Probability, Sig= Significance, N.S= Not significant, S= Significant, H.S= High significant

This table depicts that there is no significant relationship between elderly's knowledge with their age group.

Table (4-11): Relationships between Elderly's Knowledge and their Level of Education

Variables		Knowledge				Relationship
		Poor	Fair	Good	Total	
Level of education	Doesn't read & write	4	2	1	7	r_S = .652 P-value= .001 Sig= H.S
	Read & write	24	6	0	30	
	Primary school	39	26	3	68	
	Intermediate school	6	22	6	34	
	Secondary school	3	17	13	33	
	Diploma degree	1	10	5	16	
	Bachelor degree +	0	3	9	12	
	Total	77	86	37	200	

r_S = Spearman correlation coefficient, P= Probability, Sig= Significance, N.S= Not significant, S= Significant, H.S= High significant

This table reveals that there is strong positive relationship between elderly's knowledge with their level of education evidenced by high significant correlation at p-value= .001.

Table (4-12): Relationships between Elderly's Knowledge and their Marital Status

Variables		Knowledge				Relationship
		Poor	Fair	Good	Total	
Marital status	Unmarried	6	8	1	15	r_S = **.501** **P-value= .001** **Sig= H.S**
	Married	59	40	4	103	
	Divorced	10	3	2	15	
	Widowed/er	2	32	29	63	
	Separated	0	3	1	4	
	Total	77	86	37	200	

r_S = Spearman correlation coefficient, P= Probability, Sig= Significance, N.S= Not significant, S= Significant, H.S= High significant

This table displays that there is strong positive relationship between elderly's knowledge with their marital status evidenced by high significant correlation at p-value= .001.

Table (4-13): Relationships between Elderly's Knowledge and their Occupation

Variables		Knowledge				Relationship
		Poor	Fair	Good	Total	
Occupation	Unemployed/Housewife	73	69	21	163	r_S = **.351** **P-value= .001** **Sig= H.S**
	Employee	0	3	2	5	
	Retired	4	14	14	32	
	Total	77	86	37	200	

r_S = Spearman correlation coefficient, P= Probability, Sig= Significance, N.S= Not significant, S= Significant, H.S= High significant

This table reveals that there is strong positive relationship between elderly's knowledge with their occupational status evidenced by high significant correlation at p-value= .001.

Table (4-14): Relationships between Elderly's Knowledge and their Body Mass Index

Variables		Knowledge				Relationship
		Poor	Fair	Good	Total	
Body mass index	Normal	7	5	0	12	**r_S = .057 P-value= .420 Sig= N.S**
	Overweight	24	38	16	78	
	Obesity I	43	42	21	106	
	Obesity II	3	1	0	4	
	Total	77	86	37	200	

r_S = Spearman correlation coefficient, P= Probability, Sig= Significance, N.S= Not significant, S= Significant, H.S= High significant

This table indicates that there is no significant relationship between elderly's knowledge with their body mass index.

Table (4-15): Relationships among Elderly's Knowledge with regard to their Medical History

History		Knowledge				Relationship
		Poor	Fair	Good	Total	
Have you had a fall in the past six months?	No	63	39	5	107	**r_S = .569 P-value= .001 Sig= H.S**
	Unsure	5	3	0	8	
	Yes	9	44	32	85	
	Total	77	86	37	200	
Hypertension	No	42	50	22	114	**r_{pb} = .079 P-value= .266 Sig= N.S**
	Yes	35	36	15	86	
	Total	77	86	37	200	
Diabetes mellitus	No	69	72	17	158	**r_{pb} = .379 P-value= .001 Sig= N.S**
	Yes	8	14	20	42	
	Total	77	86	37	200	
Cardiovascular diseases	No	74	79	37	190	**r_{pb} = .035 P-value= .618 Sig= N.S**
	Yes	3	7	0	10	
	Total	77	86	37	200	
Renal diseases	No	63	75	31	169	**r_{pb} = .092 P-value= .195 Sig= N.S**
	Yes	14	11	6	31	
	Total	77	86	37	200	

Depression	No	66	81	33	180	r_{pb} **= .083** **P-value= .242** **Sig= N.S**
	Yes	11	5	4	20	
	Total	77	86	37	200	
Vision problems	No	21	15	1	37	r_{pb} **= .221** **P-value= .002** **Sig= H.S**
	Yes	56	71	36	163	
	Total	77	86	37	200	
Use crutches to walk	No	74	78	34	186	r_S **= .076** **P-value= .283** **Sig= N.S**
	Sometimes	0	1	0	1	
	Yes	3	7	3	13	
	Total	77	86	37	200	
Smoking	No	65	67	32	164	r_S **= .038** **P-value= .592** **Sig= N.S**
	Sometimes	5	9	1	15	
	Yes	7	10	4	21	
	Total	77	86	37	200	

r_S = Spearman correlation coefficient, r_{pb}= point biserial correlation coefficient, P= Probability, Sig= Significance, N.S= Not significant, S= Significant, H.S= High significant

This table reveals that there is strong positive relationship among elderly's knowledge with regard to their previous history of fall and history of vision problems at p-values= .001 and .002 respectively. No significant relationship has been reported with remaining variables.

Table (4-16): Relationships between Elderly's Attitudes and their Sex

Variables		**Attitudes**			**Relationship**
		Negative	**Positive**	**Total**	
Sex	Male	40	21	66	r_{pb} **= .068** **P-value= .341** **Sig= N.S**
	Female	104	30	134	
	Total	149	51	200	

r_{pb}= point biserial correlation coefficient, P= Probability, Sig= Significance, N.S= Not significant, S= Significant, H.S= High significant

This table reveals that there is no significant relationship between elderly's attitudes with their sex.

Table (4-17): Relationships between Elderly's Attitudes and their Age Group

Variables		Attitudes			Relationship
		Negative	Positive	Total	
Age	60 – 64 year	64	27	91	**r_S = - .148** **P-value= .036** **Sig= S**
	65 – 69 year	60	19	79	
	70 – 74 year	24	6	30	
	Total	149	51	200	

r_S = Spearman correlation coefficient, P= Probability, Sig= Significance, N.S= Not significant, S= Significant, H.S= High significant

This table depicts that there is reverse relationship between elderly's attitudes with their age group evidenced by significant correlation at p-value= .036.

Table (4-18): Relationships between Elderly's Attitudes and their Level of Education

Variables		Attitudes			Relationship
		Negative	Positive	Total	
Level of education	Doesn't read & write	7	0	7	**r_S = .267** **P-value= .001** **Sig= H.S**
	Read & write	30	0	30	
	Primary school	59	9	68	
	Intermediate school	27	7	34	
	Secondary school	24	9	33	
	Diploma degree	11	5	16	
	Bachelor degree +	4	8	12	
	Total	149	51	200	

r_S = Spearman correlation coefficient, P= Probability, Sig= Significance, N.S= Not significant, S= Significant, H.S= High significant

This table indicates that there is strong positive relationship between elderly's attitudes with their level of education evidenced by high significant correlation at p-value= .001.

Table (4-19): Relationships between Elderly's Attitudes and their Marital Status

Variables		Attitudes			Relationship
		Negative	Positive	Total	
Marital status	Unmarried	14	1	15	**r_S = .115 P-value= .105 Sig= N.S**
	Married	84	19	103	
	Divorced	13	2	15	
	Widowed/er	38	25	63	
	Separated	3	1	4	
	Total	149	51	200	

r_S = Spearman correlation coefficient, P= Probability, Sig= Significance, N.S= Not significant, S= Significant, H.S= High significant

This table shows that there is no significant relationship between elderly's attitudes with their marital status.

Table (4-20): Relationships between Elderly's Attitudes and their Occupation

Variables		Attitudes			Relationship
		Negative	Positive	Total	
Occupation	Unemployed/Housewife	125	38	163	**r_S = .178 P-value= .012 Sig= S**
	Employee	4	1	5	
	Retired	20	12	32	
	Total	149	51	200	

r_S = Spearman correlation coefficient, P= Probability, Sig= Significance, N.S= Not significant, S= Significant, H.S= High significant

This table reveals that there is positive relationship between elderly's attitudes with their occupational status evidenced by significant correlation at p-value= .012.

Table (4-21): Relationships between Elderly's Attitudes and their Body Mass Index

Variables		Attitudes			Relationship
		Negative	Positive	Total	
Body mass index	Normal	12	0	12	**r_S = .055 P-value= .436 Sig= N.S**
	Overweight	54	24	78	
	Obesity I	83	23	106	
	Obesity II	4	0	4	
	Total	149	51	200	

r_S = Spearman correlation coefficient, P= Probability, Sig= Significance, N.S= Not significant, S= Significant, H.S= High significant

This table shows that there is no significant relationship between elderly's attitudes with regard to body mass index.

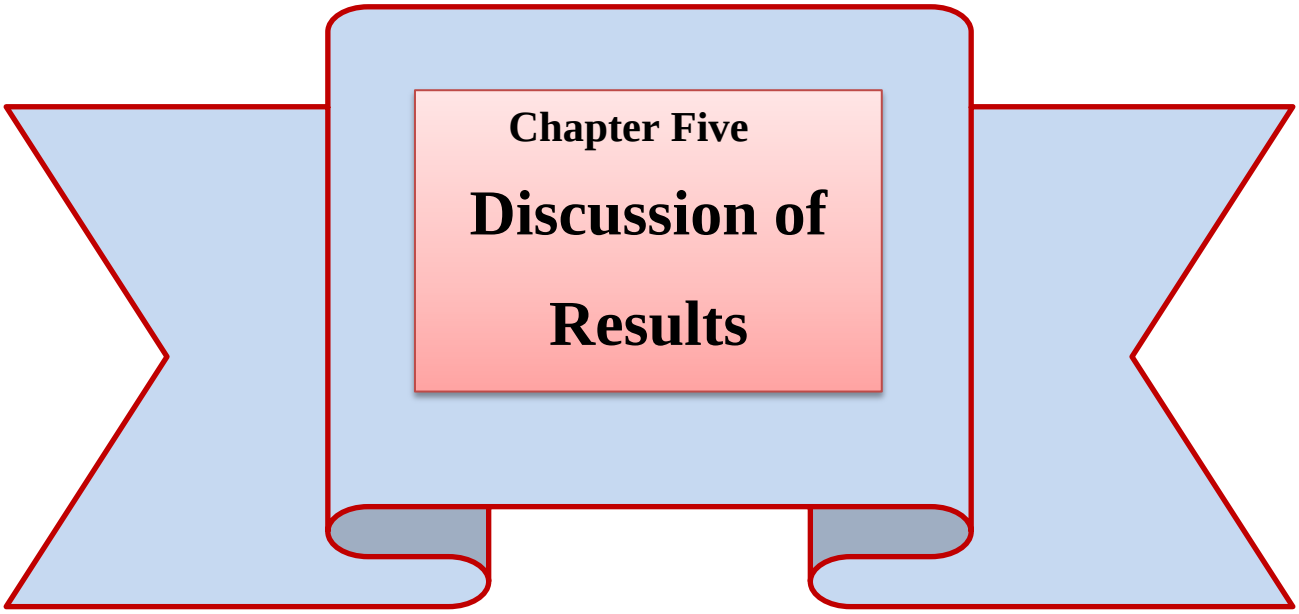
Table (4-15): Relationships among Elderly's Attitudes with regard to their Medical History

History		Attitudes			Relationship
		Negative	Positive	Total	
Have you had a fall in the past six months?	No	105	2	107	**r_S = .086 P-value= .224 Sig= N.S**
	Unsure	8	0	8	
	Yes	56	29	85	
	Total	169	31	200	
Hypertension	No	95	19	114	**r_{pb} = .034 P-value= .631 Sig= N.S**
	Yes	74	12	86	
	Total	169	31	200	
Diabetes mellitus	No	145	13	158	**r_{pb} = .271 P-value= .001 Sig= H.S**
	Yes	24	18	42	
	Total	169	31	200	
Cardiovascular diseases	No	159	31	190	**r_{pb} = .075 P-value= .293 Sig= N.S**
	Yes	10	0	10	
	Total	169	31	200	
Renal diseases	No	143	26	169	**r_{pb} = .033 P-value= .646**
	Yes	26	5	31	

	Total	169	31	200	**Sig= N.S**
Depression	No	152	28	180	r_{pb} **= .017** **P-value= .816** **Sig= N.S**
	Yes	17	3	20	
	Total	169	31	200	
Vision problems	No	36	1	37	r_{pb} **= .039** **P-value= .587** **Sig= N.S**
	Yes	133	30	163	
	Total	169	31	200	
Use crutches to walk	No	157	29	186	r_S **= .033** **P-value= .644** **Sig= N.S**
	Sometimes	1	0	1	
	Yes	11	2	13	
	Total	169	31	200	
Smoking	No	137	27	164	r_S **= .016** **P-value= .822** **Sig= N.S**
	Sometimes	15	0	15	
	Yes	17	4	21	
	Total	169	31	200	

r_S = Spearman correlation coefficient, r_{pb}= point biserial correlation coefficient, P= Probability, Sig= Significance, N.S= Not significant, S= Significant, H.S= High significant

This table reveals that there is strong positive relationship between elderly's attitudes with regard to history of diabetes mellitus at p-value= .001, but there no significant relationship has reported with remaining variables.


Chapter Five
Discussion of
Results

Chapter Five

Discussion of Results

This chapter presents a systematically driven discussion and interpretations of this study. Supportive evidence for the study findings are presented as being available in the literatures with respect to their relevance. The presentation of this chapter is organized according to the objectives of this study as follows:

5.1. Discussion of Participants according to their Socio-demographic Characteristics

The findings of the present study showed in table (4-1) that more than 67% of the studied sample were women from the investigator point of view, This is due to our Arab culture as well as in other cultures, women are often more concerned with the health aspect than men.

This finding agree with a descriptive cross sectional survey study that was carried out upon (403) elderlies by Abdulsaheb and Fadhil. (2019) concerned with "The Knowledge of Elderly Clients Attending Geriatric Clinic at Baghdad Teaching Hospital towards the Prevention of Fall", they found that the majority of the study sample were women and accounted 268(66.5%).

In addition, another study of (70) elderly conducted by Francis-Coad et al. (2019) around Evaluation of older people's knowledge, awareness, motivation and perceptions about falls and falls prevention in residential aged care homes: A tale of two cities, they found that most of the participants (71.4%) were female too.

Most of elderlies of the present study sample are within (60-64) years with mean age (65.67 ± 3.7 SD) years (table 1). In contrast the mean age was about (68.5±5.4 SD) years in a study of Abdulsaheb and Fadhil in Baghdad at 2019 , and (74.1±6.8 SD) years in a study of Cevizci, et al in Turkey at 2015, and (75.7 ±6.4 SD) years in a study by Wu TY, et al in

Taiwan at 2013, and it was (73.5± 8.4 SD) years in a study of Fhon, et al in Portuguese at 2013, this variation in mean age may be due to population difference, life style, quality of life and different factors effect on elderly people.

The result of the current study concerned with the educational level of the study sample mentioned that the majority of elderly obtained primary school graduation accounting 68 (34%). The study of Abdulsaheb and Fadhil (2019) show that the majority of sample (40.4%, 30.8%) obtain the college degree and primary school respectively. In contrast a study of Gamage et al., Sri Lanka at 2018 shows that the majority of sample (61.3%) had education beyond the secondary level, whereas 31% of study participants had only primary education,

The marital status reveals that more than half of elderly are married (51.5%) while 31.5% of them are seen widowed or widowers. The present study results agree with (Abdulsaheb and Fadhil, 2019) who reported that the majority of elderly in their study were married 73.2%. Laing et al., (2011), in study in titled "Fall Prevention Knowledge, Attitude, and Practices of Community Stakeholders and Older Adults" which reported the majority of participants (50%) were married.

The occupational status indicates that 81.5% of elderly are either unemployed or housewives. The large percentage of elderly non-employees may be attributed to the lack of financial income for the job compared to self-employment in their time, and for women, community habits, distances, and a lack of means of transportation may be reasons for not completing the stage of study and obtaining a job. These results were consistent with the study done by Gamage et al., (2018), they mentioned that the majority of elderly were not employed and accounted (79.3%).

The result of the current study concerned with body mass index, shows that more than half of elderly have obesity class I (53%) according to body mass index calculator and 39% are overweight.

5.2. Distribution of Participants according to their previous Medical History

This study revealed that (53.5%) had no history of falls during the past six months, while the percentage of those who had falls during the same period was 42.5%.

These results were consistent with a study by Cevizci, et al in Turkey at 2015 showed that the incidence of falls was (32.1%) among elderly in the last six months period. While in longitudinal cohort study by Kwan, et al in China at 2011 showed that the incidence of falls in elderly people older than 65 years was (7.06%). A study conducted by Wu, et al in Taiwan at 2013 found that the rate of falls in the previous year was (21%). A study conducted in Malaysia by Tan, et al (2016), found that the annual prevalence of falls in the elderly population in older than 60 years was (47%). Another study conducted by Sibley, et al in Canada at 2014 revealed that the overall proportion of individuals who reported falling in the previous year was (19.8%) among the fallers (63.3%) fell once in the previous year.

In contrast a study by Abdulsaheb and Fadhil, 2019 who reported that the majority of elderly in their study (73.2%) had history of fall attacks even trivial one during the last year. Al Senany and Al Saif in Saudi Arabia at 2015 found that (51%) of participants had fallen, another study by Kamel, et al in Egypt, 2013 demonstrate that the incidence of falls during the past 12 months among the study population is (60.3%).

Regarding medical history, the study results reveal that percentage of incidence for Hypertension (43%), Diabetes mellitus (21%),

Cardiovascular diseases (5%), Renal diseases (15.5%), Depression (10%), and (81%) had vision problem.

The high incidence of blood pressure and diabetes may be attributed to dietary habits and genetic causes. With regard to the problem of vision for most of the elderly, it is caused by a lack of awareness of the importance of periodic eye examination and adherence to the instructions in this regard, especially for the elderly, and the lack of units for sight examination in primary health centers, which are often easily accessible and at a low cost.

The results of the study done by Sibley et al., (2014) reveal that percentage of incidence for Hypertension (50.2%), Diabetes mellitus (17.2%),Cardiovascular diseases (22.6%), Depression (5.1%), and (27.8%) had vision problem.

Furthermore, the result of the current study founded that the majority of the participant 93% not use crutches to walk, only 10.5% are smoking, and all participants did not drink alcohol (100%).

Fear of the effect of smoking on health and the exacerbation of chronic diseases is often the reason for the lack of smoking among the elderly. Islamic and social factors have made alcohol consumption among the elderly nonexistent, especially in a religious city such as the holy city of Kerbala.

5.3. Elderly’s Knowledge toward Fall Prevention:

The results of the study on hand showed that the majority of the studied elderly had a fair level of knowledge towards fall prevention as reported among 43% of them (M±SD= 46.03 ± 13.925).

From the investigator's point of view, the fair level of knowledge about fall prevention among the elderly results from the ignorance of the elderly themselves, their relatives, and society in general about the danger of falling and the consequences resulting from it, and the high annual rate

in this age group, in addition to governmental reasons such as the lack of special programs for fall prevention, not measuring the impact of what is applied, and the absence of the media's role in terms of satellite channels or social media.

The results of the present study agree with the study in titled "Development of the Home-Based Fall Prevention Knowledge (HFPK) questionnaire to assess home-based fall prevention knowledge levels among older adults in China" done by Yang et al., 2022 who reported that the average score of older adults' is 27.21 ± 9.49 scores and the correct rate of the total score is 63.27%, indicating that urban older adults have a moderate grasp of fall prevention knowledge.

Gamage et al., at Sri Lanka(2018) Conserned with overall level of knowledge of the 300 participants, 18% (n = 54) of individuals had poor knowledge, 61% (n = 183) had average knowledge, and 21% (n = 63) had good knowledge on falls, related injuries, and preventive measures. The mean (SD) knowledge of the participants was (48.14).

A study by Abdulsaheb and Fadhil, 2019 who reported that the finding regarding the knowledge towards intervention to prevent falls revealed that (56.3%) of overall studied group had no information about how to prevent falls among elderly, which may be due to that most of them depend on family, social media and internet in their information which reflect poor information of these sources.

The finding of the study done by Francis-Coad et al., 2019 revealed that participants had limited knowledge about intrinsic falls risk factors and strategies to address these.

Hakami et al., (2019), in study in titled "Assessment of Elderly People Knowledge Regarding to Home Fall Prevention" which reported the majority of participants two thirds of elderly people had correctly identified most categories related to fall preventive measures at home.

This result comes with the study done by (Laing et al., 2011) in titled "Fall Prevention Knowledge, Attitude, and Practices of Community Stakeholders and Older Adults" which was finding most elderly had minimal working knowledge of proven fall prevention practices

5.4. Elderly's Attitude toward Fall Prevention:

The current study findings indicated that the overall assessment of elderly's attitudes towards fall prevention were at a negative attitudes toward fall prevention as reported among 78% as shown in table (4-8).

From the investigator's point of view, the negative attitudes is an inevitable result of the lack of knowledge of fall prevention methods and therefore the failure to show the correct behavior of the risks of falling.

The study consisted with Kruse et al., 2010 that found elderly have negative attitudes toward fall prevention.

This result is disagree with Laing et al., (2011) who mention the largest proportion of elderly have positive attitude.

While the result of the current study was not consistent with the study around (Fall-prone older people's attitudes towards the use of virtual reality technology for fall prevention) conducted by Dockx et al., (2017), who mention that a most participants had a positive attitude towards fall prevention (82.2%).

5.5. Association between overall assessment of elderly knowledge with their socio-demographic characteristics:

The findings of this study indicated that there is strong positive relationship between elderly's knowledge with their sex evidenced by high significant correlation at p-value= 0.005 and strong positive relationship between elderly's knowledge with their level of education, marital status and occupational status evidenced by high significant correlation at p-value= 0.001.

In relation to age group and body mass index the findings of table (10, 14) show that there are no significant association between elderly's knowledge with their age group and body mass index.

From the researcher's point of view the educational level is the most important factor that helps the elderly to understand the importance of prevention. Otherwise, occupation although could be supposed that the employed are better educated and have more access to information through a broader social environment.

Theses result supported by a cross-sectional study done by Gamage et al. (2018), they mention that there was a significant relationship between elderly's knowledge with educational status. Moreover, the result of the current study supported by Hakami, (2019), who mentioned that there was significant association between the study sample knowledge and their demographic characteristics (educational level, marital status, and occupational status).

5.6. Association between overall assessment of elderly knowledge with their medical history

The results of the study showed a significant association between elderly knowledge with regard to their previous history of fall and history of vision problems at p-values= 0.001 and 0.002 respectively (Table 4-15). Whereas, the result of the current study showed no significant relationship has been reported with remaining variables.

The study conducted by Gamage et al., 2018 show that were a statistically signifcant associations between knowledge with history of falls.

5.7. Association between overall assessment of elderly attitude with their socio-demographic characteristics

The result of the current study indicated that there is relationship between elderly's attitudes with their age group, level of education and occupational status.

The findings of the study on hand stated that no significant relationship between elderly's attitudes with their sex, marital status and body mass index.

The result of the current study disagrees with the study by Dockx et al., (2017), who mention that Attitudes towards fall prevention were not significantly correlated with age.

5.8. Association between elderly attitude with their medical history

The result reveals that there is a strong positive relationship between elderly's attitudes with regard to history of diabetes mellitus at p-value= 0.001, but there is no significant relationship with remaining variables.

From the point of view of the investigator, the relationship between the attitudes of the elderly and those with diabetes may be due to the fear of diabetic patients from wounds and fractures resulting from falls, as well as an increase in the possibility of falling due to symptoms of the disease such as frequent urination, and thus they have the correct attitudes about preventing falls.

The result of study by Dockx et al., (2017), who mention that attitudes towards fall prevention were not significantly correlated with medical history.

Theses results disagree with the study done by Laing et al. (2011), they mention that there was a significant relationship between elderly's attitude with fall history in the past 6 months.

Chapter Six

Conclusion and Recommendation

Chapter Six

Conclusion and Recommendations:

This chapter focuses on a conclusion that resulted after discussing and interpreting the study's findings, and it also generates recommendations.

6.1. Conclusion

1. Most of the sample was early age elderly, female, primary school graduate, married, unemployed, and obesity I.
2. The study conclude that almost of elderlys have low level knowledge and negative attitude regarding fall prevention.
3. There is association between elderly's knowledge and their socio-demographic characteristics such as sex, level of education, marital status and occupational status.
4. There is association between elderly's attitudes and their socio-demographic characteristics such as age group, level of education and occupational status.
5. There was association between the elderly's knowledge and their medical history, including their previous history of falls and vision problems, while there was a significant association between the elderly's attitude with their previous history of diabetes mellitus.
6. More than half of the elderly have fallen in the past six months.

6.2. Recommendations:

The following recommendations have been reached based on the conclusions of the current study:

1. A health education program must be used to raise the elderly people knowledge and change their attitude toward prevention from falls; it may be distributed through the media, pamphlets, and employees at primary care centers.
2. Ministry of Health should provide assessment programs by specialized nurses or health care providers for risk of fall inside or outside the home of elderly.
3. Ministry of Labor and Social Affairs should provide financial support to the unemployed elderly to meet the necessary needs.
4. The Ministry of Health must provide crutches for the elderly who have mobility impairments, as well as interest in having a periodic examination of the sense of hearing and vision for the elderly to reduce the risk of falling and its complications for them.
5. A manual booklet about fall prevention should be written in simple words using attractive pictures given to the elderly and families in primary health care centers.
6. The study recomand conducted studies with a larger sample size.

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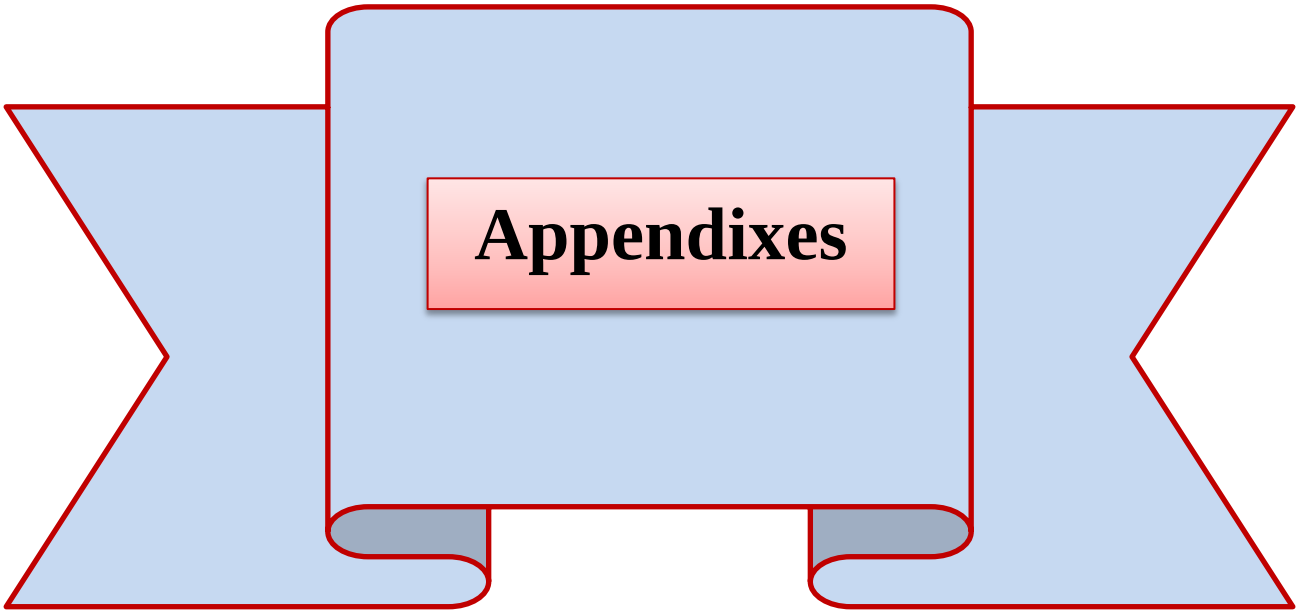

Appendixes

Appendix A1

Research
University of Karbala / College of Nursing
Scientific Research Ethics Committee

جامعة كربلاء / كلية التمريض
لجنة اخلاقيات البحث العلمي

استمارة اخلاقيات البحث العلمي

عنوان مشروع البحث
-Elderly Knowledge and Attitudes towards Fall Prevention at Primary Health Care Centers in Kerbala City. - معارف المسنين ومواقفهم تجاه الوقاية من السقوط في مراكز الرعاية الصحية الأولية في مدينة كربلاء المقدسة
بيانات عن الباحث الرئيسي

مستوى الدراسة	الاسم الثلاثي للطالب
دراسات عليا-ماجستير تمريض	علي حسين عبدالأمير

بيانات الباحث او الباحثين المشتركين

اللقب العلمي	الاسم الثلاثي للأستاذ المشرف
أستاذ مساعد دكتور	أ.م.د غزوان عبدالواحد عبدالحسين

(Importance of the research and its objectives) اهمية موضوع البحث واهدافه
Falls and their consequences are major public health problems ,making them the second leading cause of accidental deaths worldwide . Falls injuries among older people have adverse effects on quality of life and can be burdensome to families and society 1. لتقييم معارف كبار السن تجاه الوقاية من السقوط. 2. لتقييم أتجاهات كبار السن تجاه الوقاية من السقوط. 3. لأيجاد العلاقة بين معارف كبار السن ومواقفهم مع خصائصهم الاجتماعية والديموغرافية.
Time and Setting of the Research_ وقت ومكان اجراء البحث (الاماكن المقترحة لأجراء البحث فيها)
• 1 /2022/9 الى 2023/9/1 -مراكز الرعاية الصحية الاولية في مدينة كربلاء
منهجية البحث (Methodology)
• نوع الدراسة / دراسة وصفية . Descriptive study
Sample of the study عينة الدراسة
• العينة البحثية / كبار السن المراجعين في مراكز الرعاية الصحية الأولية.
(Ethical consideration during research) الاعتبارات الاخلاقية خلال اجراء البحث
التعهد • اني الموقع ادناه علي حسين عبدالأمير اتعهد بان اقوم باجراء البحث وفقا لما ذكر في البروتوكول اعلاه وان التزم باتباع القوانين والتعليمات فيما يخص اجراء البحوث والالتزام بأخلاقياتها , كما واتعهد باخذ الموافقة من افراد العينة للمشاركة في الدراسة واخذ موافقة من ولي أمر المشارك الشرعي في حال كون عمر الشخص المشارك اقل من 18 سنة، او كونه غير قادر على الفهم , وان اقدم الإيضاحات و المعلومات الخاصة بالدراسة لافراد العينة للمشاركين في حال طلبها. وان اتعامل بسرية تامة مع بيانات افراد العينة. اسم وتوقيع الباحث علي حسين عبدالامير
توصية لجنة اخلاقيات البحث العلمي في الكلية
قرار اعضاء لجنة اخلاقيات البحث العلمي حسب جلستها المنعقدة بتاريخ / / 202 : ☐ الموافقة على اجراء البحث ☐ عدم الموافقة على اجراء البحث رئيس اللجنة عضو عضو عضو عضو

2022/10/9

Appendix A2

Republic of Iraq
Ministry of higher education & scientific research
University of Karbala
College of Nursing
Graduate studies Division

جمهورية العراق
وزارة التعليم العالي والبحث العلمي
جـــامعة كربلاء
كـلية التـمريـض
شعبة الدراسات العليا

العدد: ع.د / 272

التاريخ : 23 / 11 /2022

الى / دائرة صحة كربلاء

م/ تسهيل مهمة

تحية طيبة...

يرجى التفضل بالموافقة على تسهيل مهمة طالب الماجستير السيد (**علي حسين عبدالأمير**) لإنجاز رسالته الموسومة :

(Elderly Knowledge and Attitudes towards Fall Prevention at Primary Health Care Centers in Kerbala City).

- معارف كبار السن ومواقفهم تجاه الوقاية من السقوط في مراكز الرعاية الصحية الأولية في مدينة كربلاء المقدسة

وهو احد طلبة الدراسات العليا / الماجستير في كليتنا / للعام الدراسي (2023-2022) .

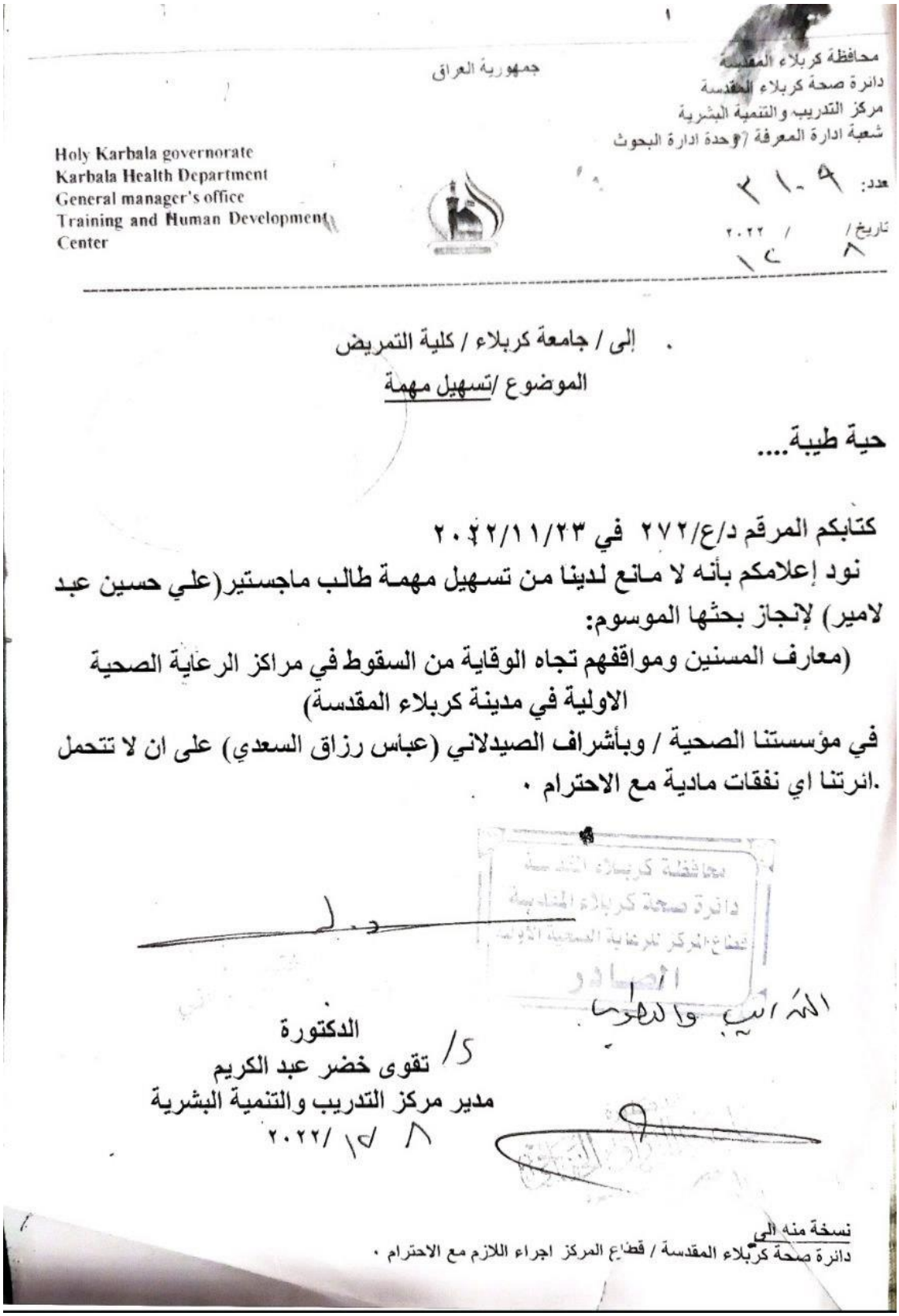
... مع التقدير ...

أ.م.د. سلمان حسين فارس الكريطي
معاون العميد للشؤون العلمية و الدراسات العليا
2022 / 11 / 29

نسخة منه الى :-
- مكتب السيد المعاون العلمي المحترم.
- شعبة الدراسات العليا.

العنوان : العراق - محافظة كربلاء المقدسة – حي الموظفين - جامعة كربلاء
Mail: nursing@uokerbala.edu.iq websitnursing.uokerbala.edu.iq

Appendix A3



جمهورية العراق

محافظة كربلاء المقدسة
دائرة صحة كربلاء المقدسة
مركز التدريب والتنمية البشرية
شعبة ادارة المعرفة / وحدة ادارة البحوث

Holy Karbala governorate
Karbala Health Department
General manager's office
Training and Human Development Center

العدد: ٢١٠٩
التاريخ / ٨ / ١٢ / ٢٠٢٢

إلى / جامعة كربلاء / كلية التمريض

الموضوع /تسهيل مهمة

حية طيبة....

كتابكم المرقم د/ع/٢٧٢ في ٢٠٢٢/١١/٢٣

نود إعلامكم بأنه لا مانع لدينا من تسهيل مهمة طالب ماجستير(علي حسين عبد لامير) لإنجاز بحثها الموسوم:

(معارف المسنين ومواقفهم تجاه الوقاية من السقوط في مراكز الرعاية الصحية الاولية في مدينة كربلاء المقدسة)

في مؤسستنا الصحية / وبأشراف الصيدلاني (عباس رزاق السعدي) على ان لا تتحمل انرتنا اي نفقات مادية مع الاحترام .

محافظة كربلاء المقدسة
دائرة صحة كربلاء المقدسة
قطاع المركز للرعاية الصحية الاولية
الصادر

الدكتورة
تقوى خضر عبد الكريم
مدير مركز التدريب والتنمية البشرية
٨ / ١٢ / ٢٠٢٢

نسخة منه الى
دائرة صحة كربلاء المقدسة / قطاع المركز اجراء اللازم مع الاحترام .

Appendix A4

وزارة الصحة
دائرة صحة كربلاء
مركز التدريب والتنمية البشرية
لجنة البحوث

استمارة رقم ٢٠٢١/٠٣

رقم القرار ٢٢٥

تاريخ القرار ٢٠٢٢/١٢/٨

قرار لجنة البحوث

درست لجنة البحوث في دائرة صحة كربلاء مشروع البحث ذي الرقم (٢٠٢٢.٢٢٥/كربلاء) المعنون

لإنجاز بحثه الموسوم

(معارف المسنين ومواقفهم تجاه الوقاية من السقوط في مراكز الرعاية الصحية الاولية في مدينة كربلاء المقدسة)

والمقدم من الباحثة :- (علي حسين عبد الامير)

الى شعبة ادارة المعرفة / وحدة ادارة البحوث في مركز التدريب والتنمية البشرية في دائرة صحة كربلاء بتاريخ ٢٠٢٢/١٢/٧ وقررت:

قبول مشروع البحث اعلاه كونه مستوفيا للمعايير المعتمدة في وزارة الصحة والخاصة بتنفيذ البحوث ولا مانع من تنفيذه في مؤسسات الدائرة.

الدكتور
نعيم عبيد المشهداني
مقرر لجنة البحوث

08/12/2022

المرفقات:

-Choose an item.

ملاحظات:

- تم تخويل عضو لجنة البحوث (د.تقوى خضر عبد الكريم) او مقرر اللجنة (د.نعيم عبيد طلال) للتوقيع على هذا القرار استنادا الى النظام الداخلي للجنة البحوث.
- الموافقة تعني ان مشروع البحث قد استوفى المعايير الاخلاقية والعلمية لإجراء البحث والمعتمدة في وزارة الصحة. اما التنفيذ فيعتمد على التزام الباحث بتعليمات المؤسسة الصحية التي سينفذ فيها البحث.

Appendix B

توزيع أماكن الدراسة حسب مراكز الرعاية الصحية الاولية في مركز مدينة كربلاء المقدسة.

القطاع	المركز الصحي	عدد الزائرين من كبار السن ل3 أشهر	10%نسبة المشاركين بالدراسة
قطاع المركز	الملحق	212	21
	حي الموظين	520	52
	العباسية الغربية	210	21
	العباسية الشرقية	451	45
	باب بغداد	126	13
	الوفاء	237	23
	النصر	163	16
	حي العباس	94	9
المجموع	8	2012	200

Appendix C1

أستبانة تقييم معارف المسنين ومواقفهم تجاه الوقاية من السقوط في مراكز الرعاية الصحية الأولية في مدينة كربلاء المقدسة .

عزيزي المراجع المسن/عزيزتي المراجعة المسنة

أن المعلومات المذكورة في الاستبيان أدناه سوف تستخدم لأغراض بحثية فقط واجابتك على الاسئلة تعد مشاركة في أنجاز البحث مع مراعات عدم ترك أية فقرة بدون أجابة.

الجزء الاول : الخصائص الديمغرافية.

ضع إشارة (√) في المربع المناسب:

1-الجنس : ذكر ☐ , أنثى ☐

2- العمر بالسنوات؟

- ☐

3- مستوى التعليم؟

- لا يقرأ ولا يكتب ☐
- يقرأ ويكتب ☐
- خريج/خريجة الدراسة الأبتدائية ☐
- خريج/خريجة الدراسة المتوسطة ☐
- خريج/خريجة الدراسة الأعدادية ☐
- حاصل/حاصلة على شهادة الدبلوم ☐
- حاصل/حاصلة على شهادة البكلوريوس فأكثر ☐

4- الحالة الزوجية

- غير متزوج/غير متزوجة ☐
- متزوج/متزوجة ☐
- مطلق/مطلقة ☐
- أرمل/أرملة ☐
- منفصل/منفصلة ☐

5- المهنة ؟

- كاسب / ربة بيت ☐
- موظف/موظفة ☐
- متقاعد/متقاعدة ☐

6- الوزن ..... الطول.....

الجزء الثاني (II): المحور رقم (1) التاريخ الطبي .

عزيزي الرجل المسن/ المرأة المسنة يرجى الاجابة على الاسئلة التالية بعناية, من خلال وضع دائرة حول الاجابة الصحيحة

الاسئلة	الاختيارات
1- هل تعرضت للسقوط في الأشهر الستة الماضية؟	أ- نعم ب- لا ت- غير متأكد
2- هل تعاني من أمراض مزمنة؟	أ- ضغط الدم ب- مرض السكر ت- أمراض القلب ث- أمراض الكلى ج- الكابة ح- لا يوجد
3- هل تعاني من مشكلة في حاسة البصر؟	أ- نعم ب- لا ت- سابقا
4- هل تستخدم عكازات للمشي	أ- نعم ب- لا ت- أحيانا
5- هل تدخن ؟	أ- نعم ب-لا ت-سابقا
6- هل تتناول المواد الكحولية ؟	أ- نعم ب-لا ت-سابقا

الجزء الثاني (II): المحور رقم (2) : تقييم معارف المسنين عن الوقاية من السقوط .

أقرا الاسئلة التالية بعناية, ثم ضع (√) في الحقل المناسب.

الرقم	معارف كبار السن بمفهوم السقوط والوقاية من عوامل الخطر الحيوية	أعرف	غير متأكد	لا أعرف
.1	السقوط هو كل حدث يعرض الشخص إلى الوقوع بدون قصد على الأرض أو على أي سطح أو أي مكان من ارتفاع أعلى.			
.2	أستخدام النظارات الطبية الملائمة يقلل من مخاطر السقوط نتيجة الرؤية الضعيفة.			
.3	أستخدام قبعة رأس واسعة لحماية العين من أشعة الشمس يساهم بالوقاية من السقوط.			
.4	يفضل زيارة الطبيب من قبل كبار السن في حالة الشعور بفقدان حاسة السمع.			
.5	تنظيف الأذن من تكتل الشمع يزيد من القدرة على السمع وتجنب حوادث السقوط.			
.6	النهوض السريع من السرير أو من الكرسي قد يسبب الدوار والسقوط.			
	معارف كبار السن حول الوقاية من عوامل الخطر البيئية	**أعرف**	**غير متأكد**	**لا أعرف**
.1	الأهتمام بكفاءة الأضاءة في المنزل لتكون أكثر أمانا للمسنين من حوادث السقوط			
.2	الأهتمام بأن تكون أرضية المنزل مستوية بدون حافات مكشوفة تقلل من مخاطر التعرض للسقوط			
.3	الأهتمام بالأرضية لتكون خالية من العقبات وازالة الماء والدهون عن السجاد يقلل من مخاطر التعرض للسقوط			
.4	تحديد مكان أمن للمطبخ ومكان تناول الطعام يقلل من مخاطر السقوط			
.5	استخدام الكراسي البلاستيكية للجلوس من قبل المسنين يزيد من مخاطر السقوط			
.6	السجاد المتحرك على درج المنزل يتسبب في السقوط			
.7	يفضل أن تكون بايات الدرج أقل من 20 سنتسمتر لتجنب حوادث السقوط			
.8	تبديل سجاد الغرفة الممزق ضروري لتجنب السقوط			
.9	أن تثبيت قضبان تساعد على الإمساك والوقوف في الحمام يقلل من			

	حوادث السقوط.			
10.	استعمال الصابون السائل في الحمام يجعل المسن أكثر أماناً من التعرض للسقوط مقارنة بالصابون الصلب			
	معارف كبار السن حول الوقاية من عوامل الخطر السلوكية	**أعرف**	**غير متأكد**	**لا أعرف**
1.	المشي بالجوراب على الأرض المصقولة(الكاشي) يعرض المسن للسقوط.			
2.	الهاتف يجب أن يكون في مكان سهل الوصول إليه ومريح.			
3.	حفظ أرقام الطوارئ في الهاتف ضروري للمسن			
4.	تناول الأدوية دون أستشارة الطبيب أحد اسباب السقوط للمسنين			
5.	تبليغ الطبيب أو الصيدلاني في حال ظهور أعراض جانبية للعلاج			
6.	تناول الطعام المتوازن يقلل من خطر السقوط			
7.	المشي خارج المنزل تحت الشمس صباحا يقلل من مخاطر السقوط			
8.	يرتبط السقوط في كبار السن بالمناخ الأكثر برودة			
9.	بعض الأنواع من التمارين تقلل من خطورة الإصابة بكسور الورك والسقوط			
10.	تقليل تناول السوائل بعد العشاء يساهم بتقليل حوادث السقوط.			

الجزء الثاني (II): المحور رقم (3) : مواقف المسنين حول الوقاية من السقوط.

أقرا الاسئلة التالية بعناية, ثم ضع (√) في الحقل المناسب.

الرقم	الاسئلة	الاجابة		
		اتفق	محايد	لااتفق
.1	أعتقد أن السقوط هو مشكلة شائعة وخطيرة لدى كبار السن قد يؤدي السقوط الى اصابات مختلفة، مثل الكسور والجروح، وأحيانا قد يؤدي الى الموت .			
.2	من المهم فحص النظر للمسنين على الأقل مرة كل سنة من قبل طبيب العيون.			
.3	أن الاهتمام بحاسة السمع مهم جدا لانها يمكن أن تسبب مشكلات التوازن والدوار.			
.4	في حالة وجود اجسام صلبة على الأرض مثل ألعاب الأطفال اقوم بأبعادها.			
.5	وضع الاشياء التي يتم أستخدامها في الرفوف المنخفضة او المتوسطة المستوى يقلل من مخاطر التعرض للسقوط			
.6	من المهم وضع مصابيح أنارة على جانبي السرير لتقليل مخاطر السقوط			
.7	أستخدام الأحذية ذات قاعدة الأحتكاك العالي أكثر امانا للمسنين من السقوط			
.8	استخدام الاحذية ذات الكعب المنخفض او المتوسط أكثر أمانا للمسنين من السقوط			
.9	من المهم جدا وضع مفتاح أنارة كهربائي في الجانب العلوي (أعلى الدرج) والسفلي (أسفل الدرج) لإضاءة الدرج .			
.10	يعتبر أستخدام (محجر) الدرج الدائري أكثر أمانا من المستطيل ويقلل من التعرض للسقوط.			

شكرا لاشتراككم معنا...

Appendix C2

The first part: Demographic characteristics

Put a tick (√) in the appropriate box:

1- Sex: Male ☐ ; Female ☐

2- Age(years): ☐

3- education level?

- Do not read and write ☐
- Read and write ☐
- Primary school graduate ☐
- Middle school graduate ☐
- High school graduate ☐
- Institute ☐
- Bachelor's degree or more ☐

4- Marital Status

- single ☐
- married ☐
- Divorced ☐
- Widower ☐
- separate ☐

5- Occupational Status

- Unemployed / Housewife ☐
- Employee ☐
- Retired ☐

6- Weight ..... Height .....

Part Two (II): Axis No. (1) Medical History.

The questions	Option
1- Have you had a fall in the past six months?	a- Yes b- No **c-** Unsure
2- Do you suffer from chronic diseases?	a. Blood pressure b. Diabetes c. C - Heart disease d. D - Kidney disease e. C - Depression f. H- There is no
3- Do you suffer from a problem with your sense of sight?	a. Yes b. No c. Previously
Do you use crutches to walk?	a. Yes b. No c. Elegant
Do you smoke?	a. Yes b. No c. Previously
Do they form alcohol?	a. Yes b. No c. Previously

Part Two (II): Axis No. (2): Assessment of the elderly's knowledge of fall prevention.

No.	**Elderly knowledge about concept of fall and prevention toward biological risk factors**	Known	Un sure	I dont known
1.	A fall is every event that causes a person to fall unintentionally to the ground or any surface or any place from a higher height.			
2.	The use of appropriate medical glasses reduces the risk of falling as a result of poor vision.			
3.	The use of a wide head hat to protect the eyes from the sun's rays contributes to the prevention of falls.			
4.	It is preferable to visit a doctor by the elderly in case of feeling a loss of hearing.			
5.	Cleaning the ears of wax conglomerates increases the ability to hear and avoid accidental falls.			
6.	Getting up quickly from bed or from a chair may cause dizziness and falls.			
	Elderly knowledge about prevention toward environmental risk factors	Known	Un sure	I dont known
1.	Pay attention to the efficiency of lighting in the home to be safer for the elderly from falls.			
2.	Taking care that the floor of the house is flat without exposed edges, which reduces the risk of falling.			
3.	Taking care of the floor to be free of obstacles and removing water and fat from the carpet reduces the risk of falling.			
4.	Determining a safe place for the kitchen and eating area reduces the risk of falling			
5.	The use of plastic chairs to sit on by the elderly increases the risk of falling.			
6.	Moving carpets on stairs cause falls.			
7.	It is preferable that the stair treads be less than 20 centimeters to avoid			

	falling accidents.			
8.	Replacing torn room rugs is essential to avoid falls.			
9.	Installing bars that help with gripping and standing in the bathroom reduces falls.			
10.	Using liquid soap in the bathroom makes the elderly safer from falling, compared to solid soap.			
	Elderly knowledge about prevention toward behavioral risk factors	Known	Un sure	I dont known
1.	Walking in socks on the polished floor exposes the elderly to fall.			
2.	The phone should be in an easily accessible and comfortable place.			
3.	Memorizing emergency numbers on the phone is necessary for the elderly.			
4.	Taking medications without consulting a doctor is one of the causes of falls for the elderly.			
5.	Inform the doctor or pharmacist if side effects of treatment appear.			
6.	Eating a balanced diet reduces the risk of falling.			
7.	Walking outside in the sun in the morning reduces the risk of falls.			
8.	Fall in the elderly is associated with colder climates.			
9.	Certain types of exercise reduce the risk of hip fractures and falls.			
10.	Reducing fluid intake after dinner contributes to reducing falls.			

Part Two (II): Axis No. (3): Elderly Attitudes about Fall Prevention.

No.	Items	Agree	Neutral	Dis agree
1.	I believe that falling is a common and serious problem for the elderly. Falling may lead to various injuries, such as fractures and wounds, and sometimes it may lead to death.			
2.	It is important to examine the eyesight of the elderly at least once a year by an ophthalmologist.			
3.	Paying attention to the sense of hearing is very important because it can cause balance and dizziness problems.			
4.	In the case of solid objects on the ground, such as children's toys, remove them.			
5.	Placing items that are used in low or medium shelves reduces the risk of falling.			
6.	It is important to place light bulbs on both sides of the bed to reduce the risk of falls.			
7.	The use of shoes with a high friction base is safer for the elderly than falling.			
8.	The use of shoes with low or medium heels is safer for the elderly than falling			
9.	It is very important to place an electric lighting switch on the upper side (above the stairs) and the lower side (under the stairs) to light the stairs.			
10.	The use of a circular staircase railing is safer than a rectangular staircase railing and reduces the risk of falling.			

Appendix D

قائمة بأسماء الخبراء المحكمين لاستمارة الاستبيان

ت	أسم الخبير	اللقب العلمي	الاختصاص	مكان العمل	سنوات الخبرة
.1	د. أمين عجيل ياسر	أستاذ	تمريض صحة مجتمع	جامعة بابل /كلية التمريض	38
.2	د. أركان بهلول ناجي	أستاذ	تمريض صحة مجتمع	جامعة بغداد/كلية التمريض	36
.3	د.فاطمة وناس خضير	أستاذ	تمريض صحة مجتمع	جامعة الكوفة/كلية التمريض	30
.4	د. سلمان حسين فارس	أستاذ مساعد	تمريض صحة المجتمع	جامعة كربلاء/كلية التمريض	32
.5	د. فاطمة مكي محمود	أستاذ مساعد	تمريض بالغين	جامعة كربلاء/كلية التمريض	28
.6	د. علي عبد الرضا أبو طحين	أستاذ مساعد	بورد دكتوراه/ طب مجتمع	جامعة كربلاء /كلية الطب	24
.7	د. حسن عبد الله عذبي المالكي	أستاذ مساعد	تمريض بالغين	جامعة كربلاء/ كلية التمريض	20
.8	د. منصور عبدالله فلاح	أستاذ مساعد	تمريض صحة المجتمع	جامعة الكوفة/كلية التمريض	19
.9	د. مرتضى غانم عداي	أستاذ مساعد	تمريض صحة المجتمع	جامعة وارث الانبياء / كلية التمريض	16
.10	د. قحطان قاسم محمد	أستاذ مساعد	تمريض الصحة النفسية والعقلية	جامعة بغداد/كلية التمريض	14
.11	د. ايسن كمال محمد	مساعد دكتور	تمريض صحة مجتمع	جامعة بغداد/ كلية التمريض	17
.12	د.حقي أسماعيل	مدرس	تمريض صحة مجتمع	جامعة كربلاء /كلية التمريض	6

Appendix E1

Linguistic Certification

Republic of Iraq
Ministry of higher education & scientific research
University of Kerbala
College of Nursing

جمهورية العراق
وزارة التعليم العالي والبحث العلمي
جامعة كربلاء
كلية التمريض
الدراسات العليا

اقرار الخبير اللغوي

اشهد بان الرسالة الموسومة :

Elderly Knowledge and Attitude toward Fall Prevention at Primary Health Care Centers

قد تم جرى مرجعتها من الناحية اللغوية بحيث اصبحت بأسلوب علمي سليم خال من الأخطاء اللغوي ولأجله وقعت.

توقيع الخبير اللغوي:
الاسم واللقب العلمي: (أستاذ مساعد
الاختصاص الدقيق: علم اللغة والعام
مكان العمل: جامعة كربلاء / كلية
التاريخ: / / 2023

العنوان : العراق ـ محافظة كربلاء المقدسة ـ حي الموظفين ـ جامعة كربلاء
Mail: nursing@uokerbala.edu.iq website: nursing.uokerbala.edu.iq

Appendix E2

Statistical Certification

Republic of Iraq
Ministry of higher education & scientific research
University of Kerbala
College of Nursing

جمهورية العراق
وزارة التعليم العالي والبحث العلمي
جامعة كربلاء
كلية التمريض
الدراسات العليا

اقرار الخبير الاحصائي

اشهد بان الرسالة الموسومة :

(معرفة كبار السن واتجاهاتهم تجاه الوقاية من السقوط في مراكز رعاية الصحية الاولية في مدينة كربلاء المقدسة

قد تم الاطلاع على الاسلوب الاحصائي المتبع في تحليل البيانات واظهار النتائج الاحصائية وفق مضمون الدراسة ولأجله وقعت.

توقيع الخبير الاحصائي:
الاسم واللقب العلمي: م.د. [illegible]
الاختصاص الدقيق: احصاء تطبيقي
مكان العمل: جامعة كربلاء / كلية / الادارة والاقتصاد / قسم [illegible]
التاريخ: 30 / 5 / 2023

المستخلص

يؤدي التقدم بالعمر الى العديد من المشاكل الصحية والاجتماعية ، وفي المجتمعات المسنة تصبح مواجهة هذه التحديات واجباً، وأحد التحديات التي تواجه صحة كبار السن هو السقوط والعواقب الناتجة عنه،والسقوط بين كبار السن يسبب الأمراض والوفيات المتكررة بالتالي فأن معظم عوامل الخطر المسببة له يمكن الوقاية منها.

استخدم التصميم المقطعي في هذه الدراسة لتقييم معرفة كبار السن ومواقفهم من الوقاية من السقوط ومعرفة العلاقة بين معرفة كبار السن ومواقفهم مع خصائصهم الديموغرافية. تم جمع البيانات من مراكز الرعاية الصحية الأولية - قطاع المركز في كربلاء ، العراق. أجريت الدراسة خلال الفترة من تشرين الأول (أكتوبر) 2022 إلى أيار (مايو) 2023. وتم اختيار عينة غير احتمالية مناسبة 200 شخص من كبار السن الذين كانوا يترددون على مراكز الرعاية الصحية الأولية في قطاع المركز في كربلاء خلال فترة الدراسة.

تم أستخدام نموذج الاستبيان ويتألف من أربعة أجزاء: الجزء الأول يتضمن الخصائص الاجتماعية والديموغرافية لكبار السن ، بينما يتضمن الجزء الثاني التاريخ الطبي، الجزء الثالث يتضمن معارف كبار السن، والجزء الرابع يشمل مواقف كبار السن.

تم تحديد موثوقية الاستبيان من خلال أجراء الدراسة المصغره ، وتم تحديد مصداقيتها من قبل لجنة مكونة من (12) خبيراً.

أظهرت الدراسة أن أقل من نصف العينة (43%) لديهم مستوى متوسط من المعرفة تجاه الوقاية من السقوط ، وهناك ارتباط كبير بين معرفة كبار السن وخصائصهم الاجتماعية والديموغرافية تشمل(الجنس ومستوى التعليم والحالة الاجتماعية والحالة المهنية). أظهرت الدراسة أيضًا أن (78%) لديهم مواقف غير جيدة تجاه الوقاية من السقوط ، وهناك ارتباط كبير بين مواقف كبار السن وخصائصهم الاجتماعية والديموغرافية مثل (العمرومستوى التعليم والحالة المهنية).

توصي الدراسة ببرنامج تثقيف صحي يجب تطبيقه لزيادة المعرفة العامة وتعزيز المواقف حول أهمية الوقاية من سقوط كبار السن من خلال وسائل الإعلام والكتيبات وموظفي مركز الرعاية الصحية الأولية. كذالك على وزارة العمل والشؤون الاجتماعية تقديم الدعم المالي

للعاطلين من المسنين لتلبية الاحتياجات اللازمة. بالأضافة الى تعميم كتيب للوقاية من السقوط بأستخدام كلمات بسيطة وصور توضيحية توزع لكبار السن في مراكز الرعاية الصحية الأولية.

جامعة كربلاء

كلية التمريض

معارف كبار السن ومواقفهم تجاه الوقاية من السقوط في مراكز الرعاية الصحية الأولية

رسالة مقدمة الى مجلـــس كلية التمريض/ جامعة كربلاء

علي حسين عبدالأمير فارس

هي جزء

من متطلبات نيل درجة الماجستير في علوم التمريض

بإشراف

أ.م.د. غزوان عبدالحسين عبدالواحد

يوليو 2023 م **ذي الحجة 1444 هـ**