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PREVALENCE AND CORRELATES OF FALLS AMONG ELDERLY POPULATION: A STUDY OF URBAN VARANASI, INDIA

Garima Kumari
Ph. D. (Social Work), Department of Sociology, Banaras Hindu University, Varanasi-221005, Uttar Pradesh, India.

Abstract

There has been a sharp increase in elderly population (60 years and above) over the years. It is projected to rise to approximately 140 million by 2021. Falls are a major cause of unintentional injury and low quality of life during old age. Falls also restrict mobility and associated morbidities with fall often lead to social isolation and psychological problems. Falling can lead to longstanding pain, disability and sometimes premature death.

Present study is based on a cross sectional study with sample size of 104 elderly aged 60 years and above from urban area of Varanasi district. Multistage random sampling technique is used in the study. Semi-structured interview schedule has been administered.
Result based on empirical data indicates that 36.5 percent have experienced fall during old age and they suffer from fracture, pain, injury and fear of falling. Age and gender are significantly associated with falls among the elderly.
It is apparent that with increasing age, risk of fall increases and gender differences play important role regarding risk and consequences of falls during old age. Therefore multidimensional strategies should be adopted to reduce the risk of falling and enhance the quality of life in old age.

Introduction

Although ageing is concerned with the elderly only in the popular sense, it is a lifelong process actually and an integral part of living. Biologically, ageing can be defined as an irreversible and progressive changing of the structures and functions of living organism. Ageing is a process in which individual becomes more and more inadequate to carry out vital functions and eventually succumbs to death (Tilak, 1989). The process of being old is "Ageing" and it is inevitable being the last phase of human life cycle. "Ageing is a

physiological process which is associated with progressive degeneration of all the organs and tissues of the body" (Batra, 2002). According to Census of India, 60 years is the cut off point for classifying people as old. World Health Organization (WHO, 1967) defines old age as "the period of life when impairment of mental and physical function becomes increasingly manifest by comparison with previous periods of life". Government of India adopted 'National Policy on Older Persons' in January 1999. The policy defines 'senior citizens' or 'elderly' as a person who is of age 60 years or above. The term elderly is defined as the population aged 60 years and above in the United Nations International Conference on Ageing in the year 1991.

Both the share and size of elderly population is increasing over time. It is projected to rise from 5.6 percent in 1961 to 12.4 percent of the total population by 2026 (situation analysis of the elderly in India, 2011). In India, by 2050, more than one in five people will be aged over 60 and the proportion of the aged over 60 and the proportion of the aged above 70 and 80 would witness a fivefold increase by 2026 (Helpage India,2008).

Falls are considered as one of the major "Geriatric Giants". Falls are the slips and trips occurred inside or outside home. falls are commonly defined as "inadvertently coming to rest on the ground, floor or other lower level, excluding intentional change in position to rest in furniture, wall or other objects"(WHO report,2007). There are different interpretations of falls. For example older people tend to describe a fall as a loss of balance, whereas healthcare professionals generally refer to events leading to injuries and ill health. When there are two or more falls in 6 months period then it is called recurrent fall. Most of the accidental deaths occur due to fall and it increases with increasing age (more among 70+). Approximately 28-35 percent people aged 65 and over fall each year, increasing to 32-42 percent for those over 70 years of age. the frequency of falls increases with age and frailty level. Studies also reveal that older people who are living in nursing homes fall more often than those living in the community. The incidence of falls varies among countries also. For instance, a study in south-East Asia Region found that in china 6-31 percent while in another study in Japan 20 percent of older adults fell each year. Falls account for 40 percent of all death injuries. Fatal falls rates increase exponentially with age for both sexes, highest at the age of 85 years and over. Rates of fatal falls among men exceed that of women for all age groups in spite of the fewer occurrences of falls among them.

The incidents of fall are often underreported because they are considered as normal accompanied with age. High prevalence of diseases like arthritis, osteoporosis cause more falls and falls aggravate the misery along with additional injury and longstanding disabilities. Hip fracture, limb fracture, head injury, spinal pain etc are some of the common consequences of fall. The major underlying causes for fall related hospital admission are hip fracture, traumatic brain injuries and upper limb injuries. Functional impairment, poor physical and cognitive status which causes several morbidities and mortality are the consequences of falls especially recurrent falls. Falls are the second leading cause of unintentional injury, mortality and they account for 11 percent of all unintentional injury deaths worldwide (Singh, 2015). Old age itself is being a painful experience due to chronic and multiple diseases as well as problems in Activities of Daily Living (ADLs). Risk of falls aggravates the pain and dependency. Falls may also result in a post fall syndrome that includes dependence, loss of autonomy, confusion, immobilization and depression which will lead to further restriction in daily activities.

Therefore falls are a very important area of concern regarding elderly and this aspect needs deep study. The existing paper aims at highlighting the prevalence of falls and few variables correlated with falls.

Risk factors:

1. **Intrinsic factors**- these factors include age related changes in body, previous falls, fear of falling, chronic conditions such as arthritis, diabetes, stroke, Parkinson's, dementia etc
2. **Extrinsic Factors**- These include factors related to the environment e.g location of furniture, poor stair design, lack of bathroom grab bars, dim lighting, slippery or uneven surfaces, psychoactive medications, improper use of assistive device etc
3. **Situational Factors**- walking with uncomfortable heels, rushing to attend telephone, climbing stairs in a hurry when light is inadequate etc

Determinants related to falls

Culture- In many societies, falls in older age are perceived as "an inevitable natural part of ageing" or "unavoidable accidents". All these contribute to falls prevention not to be considered as a matter of priority.

Gender- Women are more likely than men to fall and sustain fracture, resulting in twice more hospitalizations and emergency department visits than men.

Physical Activity- Regular participation in moderate physical activity is integral to good health and maintaining independence, contributing to lowering risk of falls and fall-related injuries.

Healthy Eating- Eating a healthy balanced diet is central to healthy ageing. Adequate intake of protein, calcium, essential vitamins and water are essential for optimum health. If deficiencies do exist, it is reasonable to expect that weakness, poor fall recovery and increase risk of injuries will ensure.

Use of Medicines- Older people tend to take more drugs than younger people. Also as people age, they develop altered mechanisms for absorbing and metabolizing drugs. If older persons don't take medications as directed by health professionals, their risk of falling can be affected in several ways. Effects of uncontrolled medical conditions and of medication because of non-adherence can provoke or generate altering alertness, judgement, and coordination; dizziness; altering the balance mechanism and the ability to recognize and adapt to obstacles; and increased stiffness or weakness.

Risk-taking behaviours- Some risk-taking behaviours increase the risk of falling in older age. Those behaviours include climbing ladders, standing on unsteady chairs or bending while performing activities of daily living, rushing with little attention to the environment or not using mobility devices prescribed to them such as a cane or walker.

Fear of Falling- Fear can positively motivate some seniors to take precautions against falls and can lead to gait adaptations that increase stability. For others, fear can lead to a decline in overall quality of life and increase the risk of falls through a reduction in the activities needed to maintain self-esteem, confidence, strength and balance.

Physical environment- stairs can be problematic. slippery surfaces, unmarked edges, discontinuous or poorly-fitted handrails, and inadequate or excessive lighting.

Social environment- Social connection and inclusion are vital to health in older age. Social interaction is inversely related to the risk of falls. Fear of falling can increase the risk of falls through a reduction in social participation and loss of personal contact which in turn increase isolation and depression. Providing social support and opportunities for older people to

participate in social activities to help maintain active interaction with others may decrease their risk of falls.

Economic determinants- Studies have shown that there is a relationship between socioeconomic status and falls. Lower income is associated with increased risk of falling. Older people, especially those who are female, live alone or in rural areas with unreliable and insufficient incomes face an increased risk of falls. Poor environment in which they live, their poor diet and the fact of not being able to access health care services even when they have acute or chronic illness exacerbates the risk of falling.

Data and Methodology

Present study is based on a primary data collected in urban area of Varanasi district under a sample survey entitled "Ageing and Health: A Study of Socio-Psychological Correlates of Health in Old Age". The study design is descriptive cum exploratory. Sample is drawn through multistage random sampling technique. The sample size for this study is 104. Semi structured interview schedule is used as a tool for data collection in present study. No any clinical investigation is done during the study.

Result

Result in present study reveals that 36.5 percent have experienced fall during old age and they suffer from fracture, pain, injury and fear of falling. Age and gender are significantly associated with falls among the elderly. Among 60-69 age group 26.7 percent elderly has experienced fall while among 70 and above 50 percent people experienced fall. 42.1 percent male and 57.9 percent female experienced fall during old age. The data shows that falls are more common among older women than men. The difference in falls in older age may stem from the gender-related factors, such as women being inclined to make greater use of multiple medications and living alone. In addition, biological difference also contributes to greater risk, for instance women's muscle mass declines faster than that of men, especially in the immediate few years after menopause. To some extent this is gender-related as women are less likely to engage into the practice of muscular building physical activity though the life course e.g. sports. Therefore Policies and programmes on falls prevention need to reflect a gender perspective.

Conclusion and Suggestions

There are limited information available in India regarding rate of fall and other associated factors among elderly. Therefore more research in this area is required. Falls prevention is a challenge to population ageing. Falls exponentially increase with age related biological change, therefore a pronounced number of persons over the age of 80 years trigger substantial increase of falls and fall injury at an alarming rate. Elderly as well as their family members should be made aware to avoid situational factors. Most of the elderly watch television in leisure time. Therefore media stands as a powerful tool to create awareness.

Vitamin D supplement can reduce the risk of bone fractures.

There is usually a decrease in activity due to the loss of confidence or the fear of falling again, referred to as the post fall syndrome (Sharma, A. et.al.2008). Regular participation in moderate physical activity is integral to good health and maintaining independence, contributing to lowering risk of falls and fall-related injuries.

PHC practitioners should be well versed in the diagnosis and management of falls and fall-related injuries.

Eating a balanced diet rich in calcium may decrease the risk injuries resulting from falls in older people.

Providing social support and opportunities for older people to participate in social activities to help maintain active interaction with others may decrease their risk of falls.

Addressing gait and balance problems with appropriate assistive devices.

Treatment of correctable vision, particularly early cataract surgery.

Both informal and formal caregivers have a critical role to play in building awareness about the importance of falls and falls prevention. It is especially important to provide family members, peer counsellors and other informal caregivers with information and training on how to identify risk factors for falls and how to take action to decrease the likelihood of falling among those at greatest risk.

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