

RISK FACTORS FOR FALLS AMONG ELDERLY A CROSS-SECTIONAL ANALYSIS

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Introduction

Elderly patients admitted with falls is a major health issue in Sri Lanka as it is one of the fastest-ageing countries in the world. Increasing age increases the falls risk and the complications of Falls. Falls prevention can reduce expenses due to hospital admissions, reduce the number of people who fall and the rate of falls. Falls among elderly occur due to multiple causes. Many of these factors can be prevented. Research based on the elderly population is lacking in Sri Lanka.

The objective of this research was to assess risk factors among elderly patients admitted to a tertiary center with falls, so that interventions can be carried out on an individual basis to reduce

Methodology

A cross sectional study was carried out, analyzing all patients above the age of 60 years admitted with a fall to the surgical and medical wards at the Colombo North Teaching Hospital, Sri Lanka.

An interviewer administered questionnaire was used to assess the demographic variables, chronic illnesses, Use of multiple long-term medications and details related to fall. Presence of cognitive impairment and depression was assessed by using validated special assessment tools such as Mini-Mental State Examination (MMSE) and Geriatric Depression Scale (GDS). Brief examination was done to assess nutritional status, mobility, postural hypotension, and visual acuity. The Timed Up and Go Test (TUGT) was used to assess gait and balance. Descriptive analysis was performed for demographic characteristics and falls-related risk factors. Association of falls or recurrent falls with various risk factors were calculated using Chi-square test. Results were presented with p values

Study population characteristics

A total of 300 patients were recruited, majority were female (67%, n=201). Most (67.3%, n=202) were aged between 60-74 years.

Table 1 - Chronic medical conditions

Disease	Number %
Diabetes	145 (48.3%)
Hypertension	162 (54%)
IHD	73 (24.4%)
Hypercholesterolemia	94 (31.3%)
Osteo Arthritis	30 (10%)

Table 2- Frequency of chronic medical conditions

Number of chronic conditions	Frequency %
0	58 (19.3 %)
1 -2	132 (44 %)
3 or more	110 (36 %)

References 1.Siddhisena KAP. Demography of aging in Sri Lanka. In: Aging population in Sri Lanka. United Nations Population Fund 2004; 8 – 43.2. Mundi, Sri Lanka Demographics Profile 2012, 2018, https://www.indexmundi.com/sri_lanka/demographicsprofile.html 3. Samaraweera D Maduwage S.Meeting the current and future health-care needs of Sri Lanka's ageing population. WHO South-East Asia J Public Health 2016;5(2): 96–101.4.O'Loughlin J et al. Incidence of and risk factors for falls and injurious falls among the community-dwelling elderly. American journal of epidemiology, 1993,137:342-54.5 World Health Organization. Ageing, Life Course Unit. WHO global report on falls prevention in older age. World Health Organization; 2008

Results

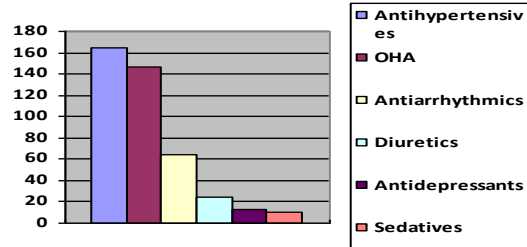


Figure 1-Long term use of multiple medications

41% (n=123) of the sample were on long term multiple medications. Anti-hypertensives (54.7%), anti-arrhythmic agents (21.3%) and oral hypoglycemic drugs (48.7%).

Falls related data

- 68 (22.7%) had a history of one fall, while 33 (11%) had two falls.
- falling while standing was common (n=84, 28%), followed by falling in the bathroom (n=71, 32.7%). 141 (47%) had fallen outside the house, the majority while walking (n=136, 45.3%).
- 112 (37.3%) elders had significant cognitive impairment while only 122 (40.7%) had normal cognition.
- 49 (16.3%) scored >5 on the Geriatric Depression Scale, indicating the presence of significant depression.
- Most of the sample (n=189, 63.0%) had normal weight
- Almost a third of the sample (n=94, 31.3%) had high risk mobility, while 55 (18.3%) had postural hypotension.

Significant associations with number of falls

Association	p-value
Age >74 years	p<0.05
Coronary artery disease	p<0.001
chronic neurological disorders	p<0.001
Long-term multiple medications	p<0.001
Fear of falling	p<0.001
Cognitive impairment	p<0.001
Depression	p<0.001
High risk mobility	p<0.001

Conclusions and Recommendations

- Frequent falling is the most important factor to address.
- Commonest risk factors are age >74yrs, presence of chronic medical conditions, long term multiple medication, fear of falling, cognitive impairment .
- Majority of risk factors for falls are modifiable and preventable highlighting the need to detecting them.
- In each encounter optimization of chronic medical conditions and, medicine reconciliation is a must to achieve this. Careful medication review should be performed to minimize polypharmacy, postural hypotension, and other side effects
- Extrinsic risk factors should be addressed in each visit. There is no well-established social services in Sri Lanka to modify their home environment as in other developed countries. Patients' family can be educated and get help in modifying these environmental factors
- Sri Lanka lacks a well-established geriatric medical specialty. Our research highlights the importance of accurate and thorough assessment of elderly patients, to prevent falls.