Falls among older persons: A study in Thiruvananthapuram district of Kerala, India

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Outline

- Background
- Objectives
- Methodology
- Results
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- Conclusion

Background

- Falls and consequent injuries in older people are a significant public health problem
- One out of every three older persons above the age of 65 years falls at least once every year
- In half of all the cases it results in serious injury
- Falls account for over 80 percent of injury-related admissions
- Fall induced injuries are a common cause for longstanding pain, functional impairment, disability and death
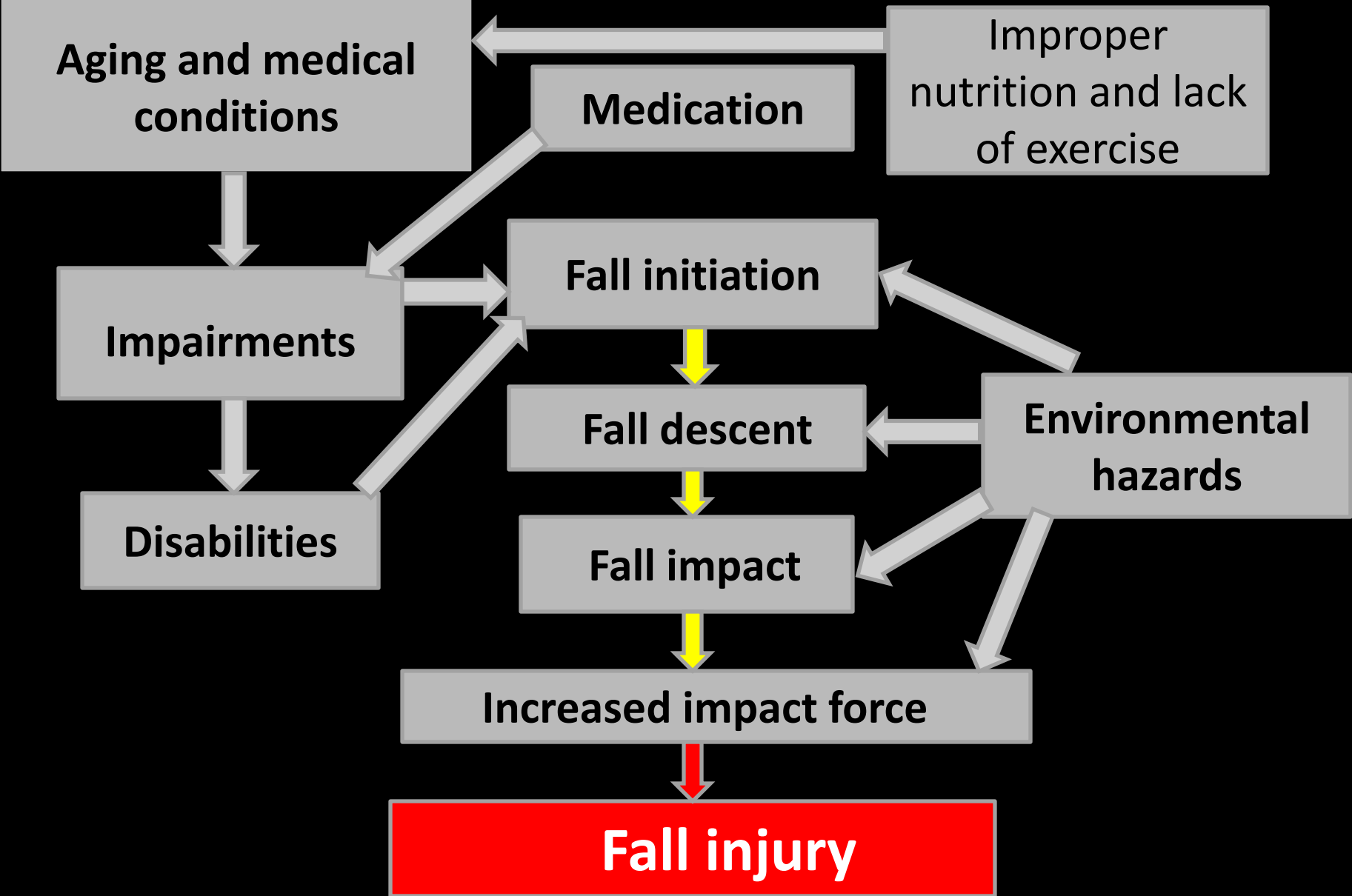
In India

- Falls are a public health problem in Indian older adults

- Incidence of falls varies from 14% to 61%

- 47.3% required medical attention

- Most of the falls occurred in the roads and in bathroom/toilet

In Kerala

- Aged in Kerala constitute 12.6%

- Falls and fractures are a significant issue among older adults in Kerala

- 45% of community dwelling participants suffered a fall in the previous year, compared to 64% of those in the Long Term Care settings

- 48% of the older women in the community required medical treatment as a result of falls

Causation of falls

Aging and medical conditions

Medication

Improper nutrition and lack of exercise

Impairments

Disabilities

Fall initiation

Fall descent

Fall impact

Environmental hazards

Increased impact force

Fall injury

Rationale

Falls and subsequent injuries should be prevented because

- of their high frequency, high morbidity and high preventability

- High cost of care for injuries and the prolonged morbidity due to disability

- Challenge to health care system

Research in this area is required

- To formulate preventive measures

- To devise policies for a friendly environment to reduce a significant amount of injury burden

Objective

- To estimate the incidence of falls in older persons (adults 60 years of age and above) living in the community in a period of one year, in a rural setting of Kerala.
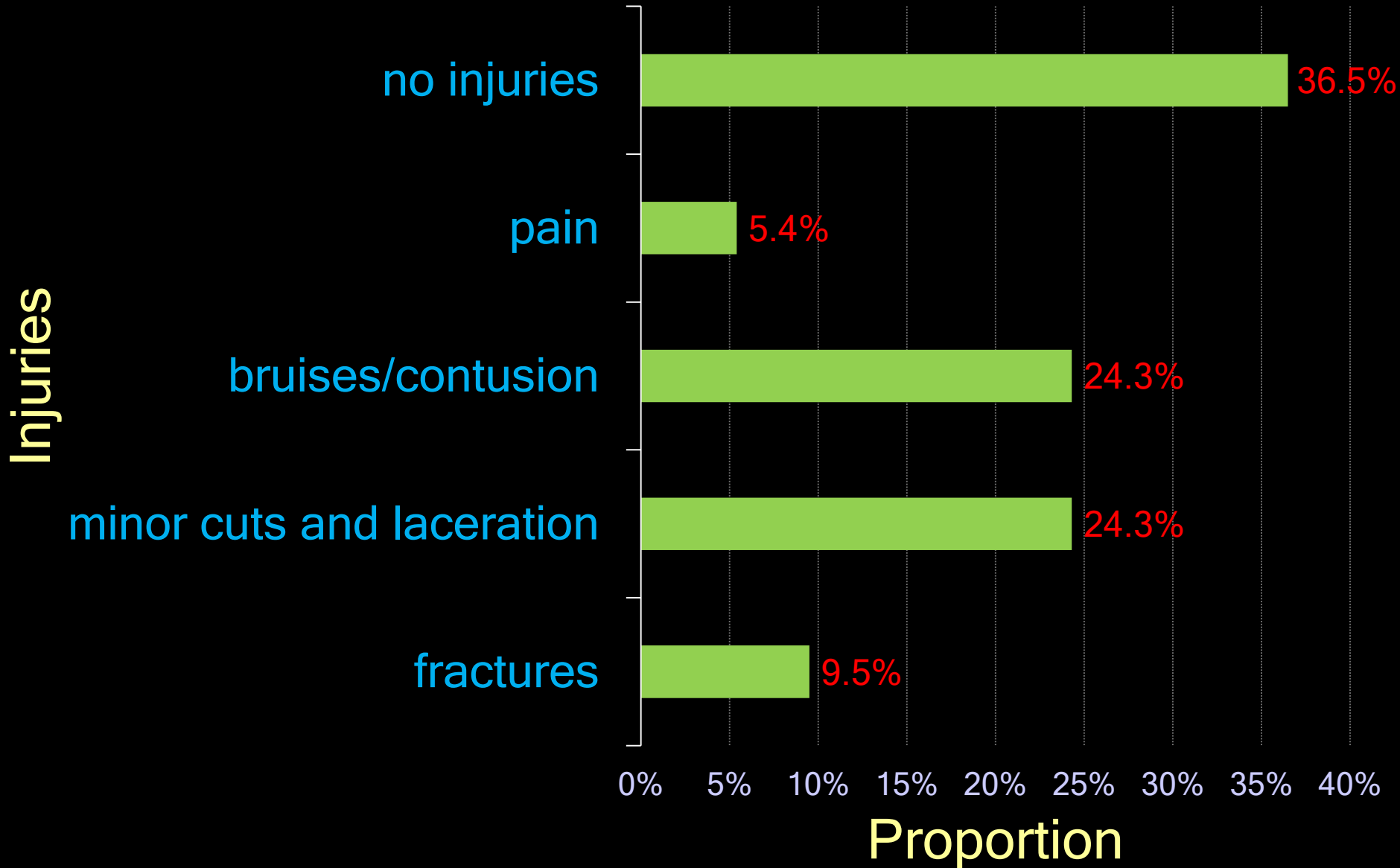
Methodology

- Study design: Cross sectional survey
- Study setting: Athiyannur Grama panchayat, Thiruvananthapuram district, Kerala
- Sample size :178
- Sample frame: List of persons 60 years and above
- Data collection: Structured pretested interview schedule
- Inclusion and exclusion criteria
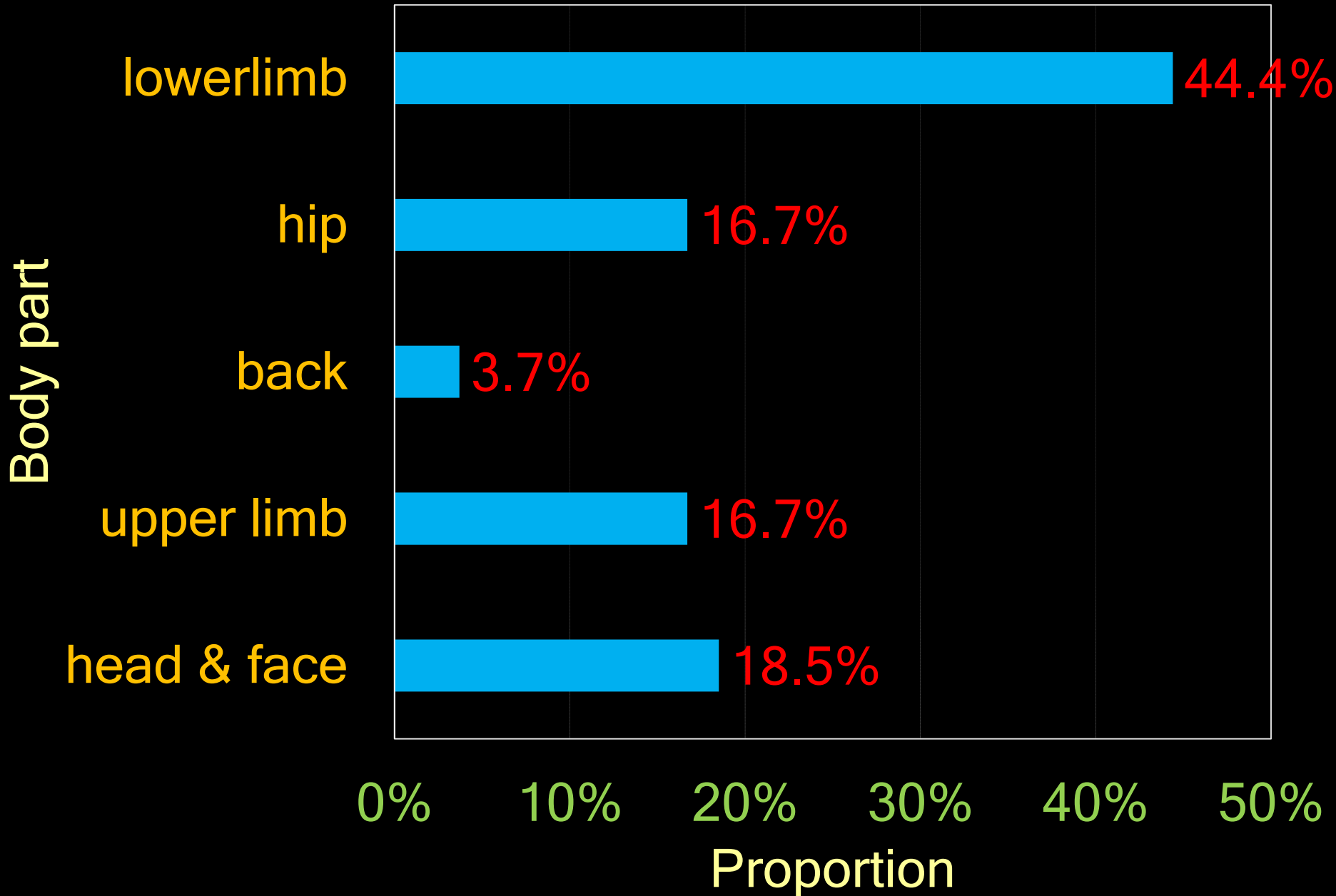- Approval from IEC, SCTIMST

Results

- 202 participants, 48 percent men and 52 percent women.
- 26.7 percent of the older persons had at least one event of fall in the last 12 months.
- 74 events of falls for 54 individuals
- 20.4 percent fell twice,7.4 percent fell thrice
- 42 percent injurious falls
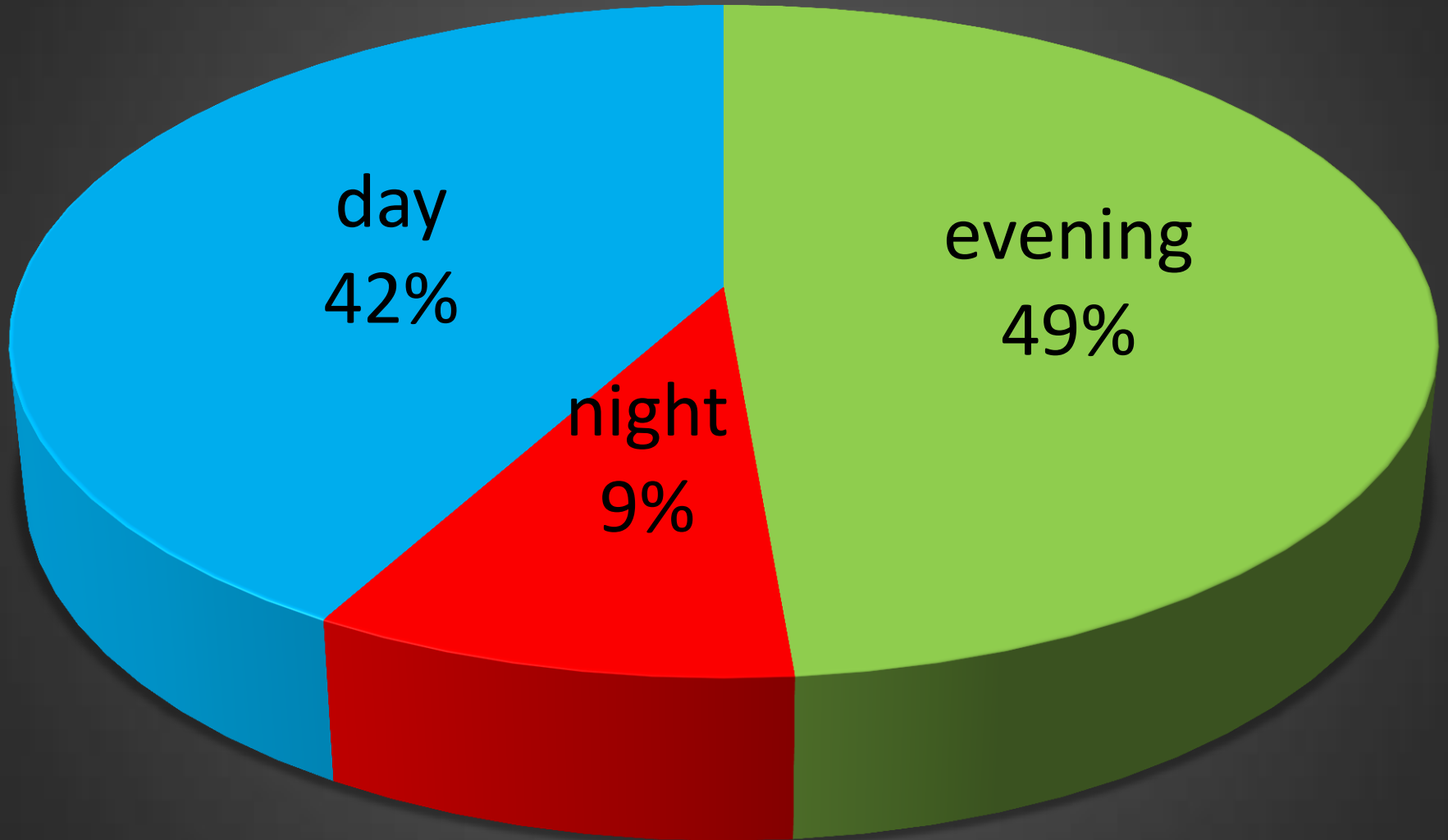- Falls increased with increase in number of risk factors

Immediate consequences of falls among older persons

Body part injured

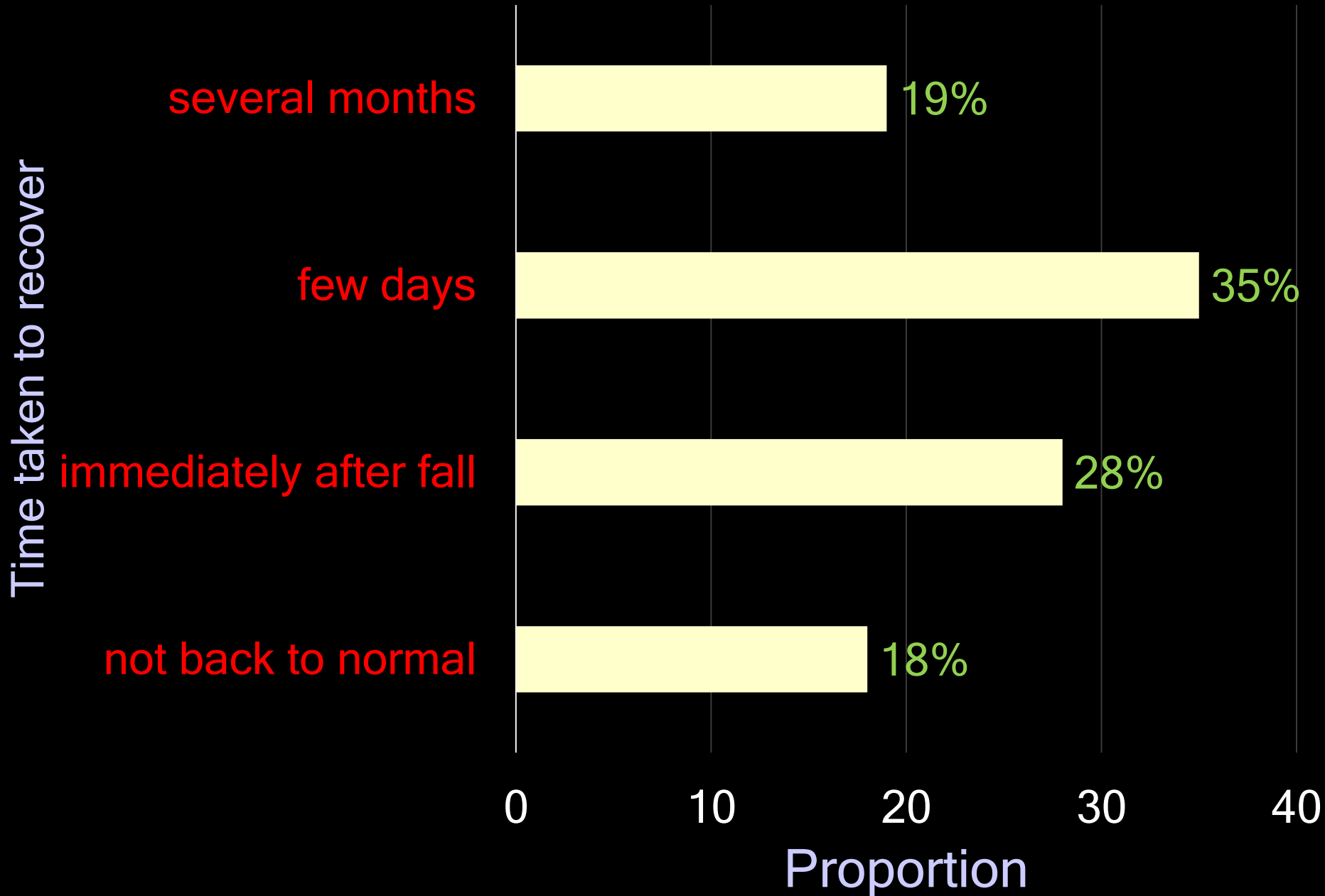Body part injured. Horizontal bar chart showing proportion of injuries by body part:
- lowerlimb: 44.4%
- hip: 16.7%
- back: 3.7%
- upper limb: 16.7%
- head & face: 18.5%

X-axis: Proportion (0% to 50%). Y-axis: Body part.

Cause of fall

Cause of fall	Male (N=28)	Female (N=46)	Total (N=74)
Slipping	8 (28.6)	11(23.9)	19 (25.6)
Fainting	8 (28.6)	10 (21.8)	18 (24.3)
Tripping	5 (17.9)	10 (21.8)	15 (20.3)
Lost balance while walking	3 (10.7)	11(23.9)	15 (20.3)
Legs gave way	2 (7.1)	2 (4.3)	4 (5.4)
Don't know/NS	2(7.1)	2 (4.3)	3 (4.1)

Activity during fall

Activity during fall	Male (N=28)	Female (N=46)	Total (N=74)
Walking	16 (57.1)	25 (54.4)	41(55.4)
Sitting on a chair/cot	3 (10.7)	5 (10.9)	8 (10.8)
Working in a kitchen	2 (7.2)	5 (10.9)	7 (9.5)
Going to toilet	2 (7.2)	3 (6.5)	5 (6.8)
Taking bath	0 (0)	1 (2.2)	1 (1.4)
Climbing the stairs	1 (3.6)	0 (0)	1 (1.4)
Standing/talking	1 (3.6)	4 (8.7)	5 (6.7)
Others	3 (10.7)	3 (6.5)	6 (8.1)

Time taken to recover from fall

several months — 19%

few days — 35%

immediately after fall — 28%

not back to normal — 18%

Time taken to recover

Proportion

0   10   20   30   40

Physical, mental & social changes

- 6% totally dependent

- 28% experience fear of fall

- 9% depressed

- 4 persons felt socially isolated

Multivariate model

Variables	Crude OR(95% CI)	Adjusted OR(95% CI)
Three or more comorbidities	3.39 (1.26-9.12)	2.91 (1.03-8.19)
No formal education	2.31(1.17-4.58)	2.45(1.19-5.05)
History of previous fall	2.27 (1.19-4.3)	1.99 (1.02-3.93)
Self-reported Osteoporosis	3.29 (1.41-7.66)	2.53(1.04-6.12)

Discussion

- Incidence of falls among older persons is comparable with other studies
- Age and sex did not have any association with falls
- Proportion of Injurious falls comparable with other studies
- Body part injured were mostly the lower limb
- Fall happened mostly during walking

Conclusion

- Incidence of falls among older persons is high
- Falls are multifactorial
- Intrinsic factors associated with falls are history of falls, history of three or more illness and reported osteoporosis
- Extrinsic factor associated with falls is lack of education
- Risk of fall increase with the number of risk factors

Acknowledgement

- NIH and ASCEND research network

Thank you