

PP 07: Contribution of Postural Balance and Quadriceps Muscle Strength as Intrinsic Risk Factors of Falls in Healthy Older Adults; A Cross-Sectional Study from the Colombo District.

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Introduction: Falls are the main source of morbidity and disability in the elderly. Many falls in older adults are certainly multifactorial, resulting from the confluence of several intrinsic, environmental, behavioural, and activity-related factors.

Objective: The study aimed to identify the contribution of postural balance and quadriceps muscle strength as intrinsic risk factors of falls in healthy older adults who resides in two elders' homes in the Colombo district.

Methods: A total of 60 elders who dwelt in Salina Alwis elders' home and Sahana Udaya elders' home were selected using a non-probability convenient sampling method. Healthy older adults aged 65 years or above who completed inclusion criteria participated in the study. Mini BESTest was used to assess postural balance. Left and right Quadriceps Muscle Strength (QMS) measurement was obtained by modified sphygmomanometer test. Falls history within the past 6 months was obtained through an interview administrated general assessment.

Results: Mean age among elders was 76.67 ± 6.23 years (56.7% female and 42.3% male). The mean values of average QMS and postural balance among the falls group were 116.00mmHg and 18.17 and among the non-falls group were 161.13mmHg and 22.57 respectively. Independent sample t-test showed the significant difference of means in average quadriceps muscle strength ($p= 0.028$) and postural balance ($p= 0.031$) among falls and non - fall a group respectively.

Conclusion: Mean quadriceps muscle strength and postural balance in the falls group were lower than the non-falls group. Therefore, we can conclude that two intrinsic risk factors (postural balance and Quadriceps muscle strength) directly contribute to falls in healthy older adults.

Keywords: Postural balance, quadriceps muscle strength, falls, elderly