

## ABSTRACT

In Sri Lanka, the population of sixty years and above are increasing in a constant rate resulting a major demographic change. Further, the declining of family support for elders encourages the institutionalization. Poor nutritional status associates with the poor body composition and it results in the poor functionality. The objective of this study was to asses the body compositional differences and their effect on functionality between under nourished and normal elderly.

This study carried out as a case-control study by selecting 57 cases and 73 controls. BMI was used to select cases and controls and the used cut-off was 17.5 kg/m<sup>2</sup>. Demispan, weight, mid-upper arm circumference, calf circumference, and skin fold thickness of biceps, triceps, subscapular and suprailiac was measured. Body composition was calculated using both skin fold method and bioelectrical impedance method. Fuctionality was measured using ADL score and TGAGT.

For all the anthropometric measurements and indices except for age and height, controls showed significantly higher values than that of cases. The fat percentage obtained using skin fold thickness technique showed significantly higher value for controls than that of cases while the value obtained from the BIA technique was vise versa. There are some significant associations between body composition and ADL score, but there was no observed significant difference in body composition and TGAGT. There was no association between indices of body composition and measurements of functionality among cases. Controls showed a positive significant association between fat mass index calculated by BIA and ADL score.

Undernourished elderly showed significantly lower lean mass and significantly higher body fat mass than that of normal elderly. The association between body composition and functionality did not show strong association in both undernourished elderly and normal elderly. There was no significant difference in functionality between undernourished elderly and normal elderly. Further, undernourished elderly showed significantly higher occurrence of lower MUAC, lower CC and lower mid arm muscle area than that of the normal elderly.