

## The frailty and falling in related with functional performance, balance and physical activity in elderly during Covid-19 pandemics

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**Background:** Falls and frailty are main causes of morbidity and frequently associated with functional performance, balance and physical activity. The restrictions imposed by the COVID-19 pandemic force the elderly to spend most of their time at home which may cause further functional problems. Therefore, identifying the risk factors during the pandemic can help to prevent the elderly from frailty and falls. Aim: Our aims are to investigate the clinical frailty profile and falls in relation to functional performance, balance, fear of falling and physical activity and to compare these parameters of the elderly with and without falling history during the COVID-19 pandemics. Method: Thirty-three participants aged 65-85 (mean = 71.33 ± 5.35/years, 20 women, 13 men) who have never had COVID-19 were included in the study. The participants were invited to an online video-conference based assessment. The number of falls during the last year were asked. Clinical frailty severity was assessed with Clinical Frailty Scale. The fear of falling were assessed using Falls Efficacy Scale (FES). The functional performance of the participants were tested with 30 seconds Sit-to-Stand test. The balance and mobility was evaluated with Timed-Up and Go test in a 3 meter corridor. The physical activity level of the participants were questioned using International Physical Activity Questionnaire-Short Form (IPAQ-SF) and vigorous level of physical activity (VPA), moderate level of physical activity (MPA) and walking were also calculated. Results: The mean scores of the outcomes among participants were shown in Table 1. Clinical frailty was significantly higher in women compared to men ( $p = 0.08$ ). Clinical frailty score, fear of falling and sit to stand performance were significantly worse in fallers. There were negative weak to moderate correlations between frailty and sit to stand performance ( $p = 0.001$ ) and MPA ( $p = 0.016$ ). The clinical frailty was also positively correlated with FES ( $p < 0.001$ ). FES showed positive correlation with Time-Up and Go performance ( $p = 0.001$ ) and negative correlation with sit to stand performance ( $p < 0.001$ ) and MPA ( $p = 0.036$ ). Conclusion: Our results demonstrated that; clinical frailty, fear of falling and sit to stand performance were associated with the fall history in elderly. In addition, clinical frailty score were higher in women. Our results indicate that, people who have fall history may tend to be frailer and may have lower functional performance, balance and physical activity. The encouragement of the elderly to increased physical activity and exercise program may decrease the frailty score and falling risk especially in elderly women during COVID-19 pandemics.

Abstract Table.1

**Table 1. The comparison of clinical features of fallers and non-fallers.**

	Mean (SD) (n=33)	Non-fallers (n=25)	Fallers (n=8)	<i>P</i>
Age (years)	71.33 (5.35)	70.4 (4.72)	74.25 (6.45)	0.091
CFS	3.03 (1.2)	2.56 (0.87)	4.5 (0.92)	<0.001
FES	21.18 (14.7)	17.24 (10.15)	33.5 (20.16)	0.02
IPAQ-SF (MET/week <sup>-1</sup> )	902.43 (774.3)	974.36 (829.23)	677.68 (554.08)	0.528
VPA (MET/week-1)	16.97 (68.5)	22.40 (78.38)	0	0.417
MPA (MET/week-1)	286.67 (324.1)	304 (328.68)	232.5 (324.5)	0.297
Walking (MET/week-1)	685.06 (599.5)	775.5 (636.97)	402.43 (363.04)	0.124
Sedantary time (minutes/week)	350.91 (165.7)	316.8 (123.11)	457.5 (237.71)	0.131
30 seconds Sit-to-Stand test	9.67 (3)	10.4 (2.56)	7.38 (3.66)	0.044
Time-Up and Go test (seconds)	11.86 (5.8)	9.71 (2.86)	18.6 (7.74)	<0.001

CFS: Clinical Frailty Scale, FES: Falls Efficacy Scale, IPAQ-SF: International Physical Activity Questionnaire-Short Form, VPA: Vigorous level of physical activity, MPA: Moderate level of physical activity.