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Letter to the Editor

Physical activity during the COVID-19 pandemic in older adults

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Coronavirus disease 2019 (COVID-19) related public health measures have promoted a radical change in the lifestyle of older people, reducing participation in community groups and social interaction.[1] Social isolation contributes to less physical activity and more sedentary behavior among older adults.[2] Disruption of physical activity in older patients who survived COVID-19 is also a potential issue. Therefore, we aimed to investigate whether older people with a history of COVID-19 have reduced physical activity compared to their life before infection.

The prospective observational study was performed by the consecutive recruitment of individuals aged 65 years and older from a geriatric outpatient clinic.[3] This hospital acts as a tertiary referral center during the pandemic. The participants were enrolled in the study from this registry and had complete medical assessments before the pandemic. The exclusion criteria were *(i)* intensive care unit admission due to COVID-19 infection, *(ii)* neurodegenerative or psychotic disease, *(iii)* delirium, *(iv)* terminal illness (malignancy, advanced organ failure), and *(v)* hearing impairment that disrupts the telephone survey. We searched the database and identified patients with polymerase chain reaction-confirmed COVID-19 between April 2020 and May 2020. A total of 120 participants including 46 patients (20 males, 26 females; mean age: 72.5±7.6 years; range, 65 to 87 years) who recently had COVID-19 and 74 control subjects (27 males, 47 females; mean age 73.1±6.2; range, 65 to 89 years), were included in the study. A telephone-based assessment was conducted to perform the self-report questionnaire designed to measure outdoor physical activities.[4] First, the participants were asked whether they engaged in vigorous, moderate, and mild outdoor activities. The outdoor physical activity was considered sufficient if the individual performed it for at least 30 min per day. In the next step, the participants were requested to compare outdoor physical activities before and after the announcement of the first case of COVID-19 in Türkiye (March 11, 2020). The primary goal was to compare the physical activity status before and during the pandemic in patients with and without a history of COVID-19. The study was approved by the institutional review board. All analyses were conducted using the IBM SPSS version 22.0 software (IBM Corp., Armonk, NY, USA). A binary logistic regression analysis was performed to determine the factors associated with the reduction in physical activity in a multivariate model adjusted for age, sex, educational level, multimorbidity, number of medications, and history of COVID-19.

About half of the participants (n=59, 49.2%) had at least two comorbid conditions. Of the older adults, 35.8% (n=43) reported regular outdoor physical activity before the pandemic. These results dropped to 7.5% (n=9) during the pandemic. Compared to the subjects

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TABLE 1
Associations between variables and reduced outdoor physical activity during the COVID-19 pandemic based on multivariate logistic regression analysis

	Reduced outdoor physical activity			
Variables	B±SE	OR	95% CI	*p*
Age	0.13±0.05	1.14	1.03-1.26	**0.012**
Sex				
Female	0.38±0.53	1.47	0.51-4.22	0.46
Multimorbidity (Yes)	0.29±0.50	1.34	0.50-3.58	0.55
Low education (Yes)	0.12±0.57	1.13	0.36-3.51	0.82
Total number of pharmacy	0.31±0.14	1.36	1.02-1.82	**0.036**
History of COVID-19 (Yes)	1.23±0.52	3.42	1.22-9.52	**0.019**

COVID-19: Coronavirus disease 2019; B±SE: Regression coefficient ± standard error; OR: Odds ratio; CI: Confidence interval; Cox and Snell R^2= 0.189; Nagelkerke R^2= 0.274; Values given in bold indicate statistically significant results (p<0.05).

without a history of COVID-19, more participants in the group with recent COVID-19 reported a significant reduction in regular pre-pandemic outdoor activity (20.2%, n=15 and 41.3%, n=19, Δp<0.001).

Multivariate binary logistic regression analysis using the reduced outdoor physical activity as the dependent variable revealed that a history of COVID-19 was significantly associated with reduced physical activity (OR=3.42, 95% CI: 1.22-9.52, p=0.019). The association of multimorbidity, low education, and sex with the outcome was saturated in the multivariate model. The model explained 18.9% (Cox and Snell R^2) and 27.4% (Nagelkerke R^2) of the variance in the reduction of outdoor physical activity in the whole group (Table 1).

The present study demonstrates that regular outdoor physical activity was significantly reduced during the COVID-19 pandemic in older adults. In addition, a history of COVID-19 was associated with reduced outdoor physical activity, even after controlling for potential confounders. To the best of our knowledge, this is the first study that includes the assessment of the physical activity status of older subjects with or without COVID-19 during the outbreak.

Studies on older adults reported regular outdoor physical activity ranging from 50.8% in the 60 to 64 year age group to 15.4% in the 85 years and over age group.[5,6] A slightly lower percentage (35.8%) of older adults reported outdoor physical activity before the pandemic. The amount of physical activity significantly decreased after the pandemic in the whole sample, particularly in those with a history of COVID-19. Consistent with our results, an increasing body of literature implicates the detrimental effect of COVID-19 related changes in physical activity on health conditions in older individuals.[7]

Symptom persistence and clinical sequelae after the recovery of COVID-19 are crucial for the maintenance of the physical well-being of older adults.[8] Fatigue and dyspnea, the most commonly described symptoms of the post-COVID-19 era, may contribute to reduced exercise capacity.[9] Moreover, older patients may experience emotional distress such as depression, anxiety, or posttraumatic stress disorder, even if they have recovered from COVID-19.[10]

In conclusion, the link between past COVID-19 infections and reduced physical activity was demonstrated in this study, supporting the need for future interventions in this population. Increased awareness of reduced physical activity and related adverse outcomes in subjects with COVID-19 history could allow early targeted health interventions to improve the quality of life in older adults. Future longitudinal studies are needed to evaluate the risk factors for reduced physical activity in older adults during the pandemic and propose interventional strategies.

Patient Consent for Publication: A written informed consent was obtained from each patient.

Data Sharing Statement: The data that support the findings of this study are available from the corresponding author upon reasonable request.

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