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Letter to the Editor

Frailty Progression over a 2-Year Period Including the Commencement Phase of Vaccination Programs against COVID-19 in Japan: Second Report

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To the Editor,

Vaccination has been recommended worldwide as a preventive measure against coronavirus disease (COVID-19), and vaccination began in Japan in February 2021.¹ We recently reported that activity limitation for COVID-19 prevention affects frailty progression.² We also observed frailty progression in a group of unvaccinated older adults.³ However, the study was conducted during the commencement phase of vaccination programs, and frailty progression at the mid-term follow-up was not investigated. Following our previously reported surveys in April 2020, September 2020, and June 2021,^{2,3} this report describes our assessment of frailty in March 2022 using the Frailty Screening Index to clarify the impact of the initial vaccination status during the commencement phase of vaccination on mid-term frailty progression.

The participants comprised 57 community-dwelling older adults aged ≥ 65 years who received long-term care/support via outpatient rehabilitation services in northern Tochigi Prefecture during the first survey and could complete all surveys. As in our previous report,³ the participants were divided into vaccinated ($n = 32$) and unvaccinated ($n = 25$) groups according to their vaccination status in June 2021. The unvaccinated group had received at least one COVID-19 vaccination by March 2022. The demographic characteristics were comparable among the vaccinated and unvaccinated groups (mean age: 78.0 ± 6.6 and 77.0 ± 8.6 years, females: 43.8 and 40.0%, body mass index: 23.0 ± 3.9 and 23.2 ± 3.7 kg/m², and long-term care level with seven step's ordinal scale: 2.7 ± 1.3 and 2.8 ± 1.6). No participants contracted COVID-19 infection or were hospitalized during the study period. All frailty investigations were conducted ≥ 2 weeks after the vaccination considering side effects.

Cochran's Q test was used for analysis and revealed that pre-frailty and frailty were significantly more prevalent in the unvaccinated group than in the vaccinated group. The prevalence in the unvaccinated group was 80% at the time of non-vaccination in June

2021 and dropped to 68% in March 2022, following complete vaccination (Figure 1). That is, in addition to age-related changes, frailty progression occurs among older adults requiring long-term care/support during the unvaccinated period under the spread of COVID-19 infection. This finding corroborates our previous report.³ The change in frailty prevalence could have been because vaccinated individuals engaged in mitigation behavior, unlike unvaccinated individuals, who were more self-restrained to avoid infection. Vaccinated individuals have been reported to engage more in their pre-pandemic activities, experience less mental distress and adequate functioning of the immune system to prevent frailty.^{4–6}

To the best of our knowledge, this is the first study to examine the mid-term progression of frailty in vaccinated and unvaccinated older adults. Our results have great significance for public health and policy.

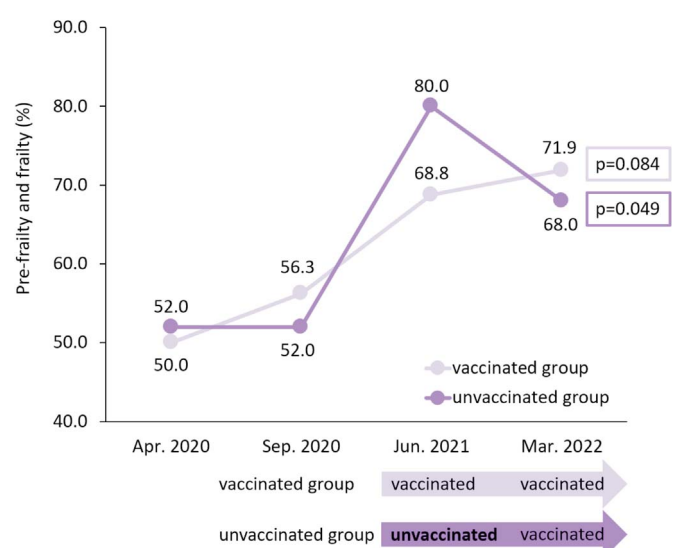


Figure 1. Changes in the prevalence of pre-frailty and frailty in the vaccinated and unvaccinated groups of older Japanese adults requiring long-term care/support. P value shows Cochran's Q test for each group. Pre-frailty and frailty were more prevalent in the unvaccinated group than in the vaccinated group. The prevalence increased during the unvaccinated period and decreased after vaccination.

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Declaraton of interest

None declared.

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