Implication of frailty and disability prevention measures during the COVID-19 pandemic

1 | INTRODUCTION

The new coronavirus disease 2019 (COVID-19), of which the first cases were reportedly confirmed at the end of 2019, quickly spread worldwide and was affecting people all over the world by early 2020. In Japan, a state of emergency was declared in April 2020, which called for major lifestyle changes, such as wearing masks, maintaining physical distancing, avoiding enclosed spaces without ventilation, and practicing thorough hand-washing hygiene. In addition, people of all ages were forced to live in an unprecedented environment; office work was replaced with remote work, restaurants and commercial facilities were closed, schools were closed, and online lectures were promoted, although complete lockdown measures were not adopted in Japan.
gathering of people, as typified by avoiding closed spaces, crowded places, and close-contact settings. On the other hand, in the latter case, “social participation” is considered to be important, and human interaction is considered to be the basis of measures against frailty. In other words, there is a trade-off; if one is emphasized, then the other is forfeited. However, in Japan, the protection of human life through infection control has been given priority, and countermeasures for frailty have become insufficient.

1.2.1 Spread of COVID-19 infection and the physical activity of older people

We surveyed the physical activity time of older people living in the community in January 2020, before the pandemic, and again in April 2020, during the pandemic. As a result, we found that the physical activity time of older people decreased by approximately 30% during the pandemic (Figure 1). This is similar to the result obtained in another study, in which it was thought that thorough infection control measures and a fear of unknown emerging infectious diseases caused physical activity restriction.

It has also been shown that such physical activity limitations have varied depending on the region of residence. Japan is a long island nation, and the size and culture of its cities vary greatly in each region. Older people in central Tokyo have been greatly affected by the change in physical activity, probably due to a large number of infections and local government policies, whereas those in other areas have been less affected. This is also evident in the rates of change in physical activity time reported from January to April 2020, which classify Japan into eight regional categories. The Kanto region, including Tokyo, showed a decrease of more than 30%, whereas Kyushu, Tohoku, and Hokkaido showed only a decrease of approximately 15% (Figure 2).

In June 2020, when the first emergency restrictions were lifted and society gradually started moving on, it was confirmed that the lives of older people had gradually recovered to their normal state. At this point, we conducted the physical activity survey again and found that the physical activity time had recovered to the same level as that reported before the pandemic, thereby indicating that the level of physical activity changes in response to the ways in which waves of infection spread. However, not all older people recovered in the same way; those who lived alone and had little interaction with their neighbors continued to have reduced levels of physical activity.

1.2.2 Countermeasures for frailty in older people during the pandemic

While people were forced to refrain from activities as a countermeasure against COVID-19 infection, the frailty of older people and the need for long-term care have become an issue. In addition to the aforementioned understanding of the actual living conditions of older people, many messages have been issued by various academic organizations. For example, the International Association for Gerontology and Geriatrics Asia/Oceania region and the Asian Working Group for Sarcopenia issued guidance and calls to action, respectively, on the importance of infection control and frailty prevention. In Japan, the NCGG published a guide for home activities called NCGG-Home Exercise Program for Older People (HEPOP), and the Laboratory for Care Prevention at the University of Tsukuba has published a web version of “Tsudoi-no-hiroba,” which shows measures that can be taken by older people alone through their use of the internet.

1.2.3 Acceleration of frailty due to the pandemic

In Japan, the first declaration of a state of emergency was issued during the first wave of infection, the second wave followed in August 2020, and the third wave occurred in January 2021; however, the spread of infection continued intermittently. The physical activity of older people, which had temporarily recovered, was suppressed again in response to these waves of infection, which resulted in a continuation of low levels of physical activity throughout 2020. In addition, the continuation of such a state led to a higher rate of new cases of frailty than those reported in ordinary times (Figure 3). These effects were more pronounced among older people who lived...
Impact of the pandemic on physical activity time of older people in each area of Japan. Japan can be divided into eight major regions: Hokkaido, Tohoku, Kanto, Chubu, Kinki, Chugoku, Shikoku, and Kyushu. In each of these eight regions, the percentage values of decrease in physical activity time from January to April 2020 were compared. An online survey was conducted among 5000 older people in various regions of Japan. Physical activity time was assessed using the Short Version of the International Physical Activity Questionnaire. The results showed that the Kanto region, including Tokyo (the capital), had the largest decrease with more than 30%, whereas Kyushu, Tohoku, and Hokkaido had only a 15% decrease (Yamada M, et al, personal communication).

To examine the impact of the coronavirus disease 2019 (COVID-19) pandemic on the development of frailty, we conducted a 1-year follow-up study of 937 individuals who were not frail in January 2020 (before the pandemic). The results showed that the percentage of new cases of frailty in 2020 was 16%. To examine the magnitude of the impact of the pandemic on the development of frailty, we used propensity scores to extract 937 individuals with matched basic attributes from other cohorts surveyed in 2015. The results showed that the proportion of new cases of frailty during 2015 was 11%, which suggests that the pandemic period resulted in a significant increase in frailty incidence (odds ratio [OR] = 1.54, p < 0.05; ref. 12).
alone and had less interaction with their neighbors, which suggests that a lack of social participation is a limiting factor in the face of major difficulties (Figure 4).11 However, as of April 2021, there has not been a significant increase in the number of people requiring long-term care. It was thought that the restriction of physical and social activities due to the pandemic would lead to an increase in the number of people requiring long-term care, but, in fact, no clear impact has yet been confirmed. Calculating the change in the rate based on the information about those who require long-term care reported by the Ministry of Health, Labor, and Welfare, it can be seen that the rate increased by 0.24% in the year of the pandemic, which is consistent with the increase of 0.23% that was reported in 2019 and that of 0.33% that was reported in 2018 (Figure 5).13 Furthermore, the rate of those who require care in our country has been increasing over time. Because the long-term care certification rate is calculated by dividing the number of certified persons by the older people population, it is presumed that the rate is not directly affected by the aging population.
of the population but is rather caused by the increase in the percentage of older people aged 75 years old or over. However, in the future, there is a possibility that the certification rate will increase even more than the increase in the percentage of older people aged 75 years old or over; thus, the promotion of anti-frailty measures is required more than ever.

2 | CONCLUSIONS

Herein, we have summarized the impact of the COVID-19 pandemic on older people. The spread of COVID-19 infection has changed our lives and deprived us of many important things. However, it has also given us new ideas and bold strategies. As a gerontologist who has lived through this period, I argue that we must make use of this experience to help better realize long and healthy lives in the future.

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CONFLICTS OF INTEREST

Nothing to disclose.

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