



## A Report on the Exercise Habits of Elderly People Aged 75 and Over Living at Home in Japan Comparison before and after the Spread of COVID-19 Infection

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### ABSTRACT

*The purpose of the research was to investigate the actual exercise practices before and after the spread of COVID-19 infection among elderly persons aged 75 years or older living at home. Public health nurses conducted infection control measures, visited their homes, interviewed them and conducted case studies. Results showed that there was no change in exercise habits or health examination data before and after the spread of Corona infection.*

**Keywords:** COVID-19, Exercise habits, Health examination, Corona infection, Control measures

### INTRODUCTION

The novel Coronavirus disease (COVID-19) that occurred in 2019 has brought about a global pandemic with a cumulative total of more than 560 million people infected by July 2022 [1]. Japan is also bringing about major changes in social life.

The survey was conducted by the ministry of health, labour and welfare and others before the spread of COVID-19 infection (January 2020) and after the spread of COVID-19 infection (March 2021). This is a group study, and significant weight gain and lack of exercise have been reported [2,3]. The long COVID-19 pandemic has changed lifestyles [4]. However, the actual situation has been investigated in detail and nothing has been reported. Therefore, this research grasps changes exercise habits and changes in the results of health check-ups through case studies. The research examined specifically at people aged 75 and older who were at high risk of becoming seriously COVID-19.

### MATERIALS AND METHODS

#### Case studies

The subjects of the research were Japanese people over the age of 75. Public health nurses conducted interviews. Exercise habits and health check-up data compared data from April 2019 before the spread of the COVID-19 infection and April 2022 after the spread of the COVID-19 infection. The cases age is as of April 2022. Data from 2019 and 2022 were compared with data that exceeded normal ranges and data with significant changes.

**Research term**

From July to September 2022.

**RESULTS****Case studies****Case 1: 82 years old, female, living alone, annuity life.**

The three children are independent. In 2019, before COVID-19, she had been walking for an hour every day. She enjoyed walking while talking with her friends. However, after the spread of the COVID-19, she has been walking alone. She started the summer at 18:00 to 19:00. After dinner in winter, after lunch, from 13:00 to 14:00, she walks alone for an hour every day, wearing a mask by choosing a course with few people on the street. On rainy days, she uses a balance ball to do stretching exercises at home for an hour. Her reason for continuing to exercise is that she wants to continue to live independently because she does not have children nearby. She said, “people whose daughters live nearby or live with them don’t exercise” (Table 1).

**Table 1 Comparison Of 2019 to 2022.**

Gender	Age	Exercise habits		Drinking and smoking habits		Health check-up data			Reasons to continue exercising
	2022	2019	2022	2019	2022	2019	2022		
<b>Female</b>									
<b>Case 1</b>	82	Yes	Yes	No	No	HbA1c%	6.1	6.1	Don't want to get dementia
<b>Case 2</b>	84	Yes	Yes	No	No	GLUmg/dl	110	110	Don't want to be bedridden
						HbA1c%	6.0	6.0	
<b>Male</b>									
<b>Case 3</b>	80	Yes	Yes	No	No	HbA1c%	6.2	6.2	Needed by society
<b>Case 4</b>	81	Yes	Yes	No	No	BD mmHg	140/90	140/90	Don't want to get dementia

She said the reason she continues to exercise is that she “wants to continue living independently because I don't have children nearby and I don't exercise if my daughter lives nearby or lives with me. She said, “I have to exercise or I will get dementia”. Also, “I am afraid of contracting Coronavirus,” she said, explaining why she does not participate in exercise classes at a sports club or the nearby community center. Health check-up data remained unchanged before and after the spread of COVID-19 infection, with HbA1c around 6.1%.

**Case 2: 84 years old, female, living alone, annuity life.**

Her three children have families and lead independent lives. From before the spread of the COVID-19 infection in 2019 to the present, she has continued to do radio exercises upon waking and exercise and stretch exercises utilizing an ergometer for one hour daily. The reason is that she has hay fever. She wants to avoid outdoor sports and walking. Prior to the spread of the COVID-19 infection, she was participating in an exercise class at the community center. However, she currently does not participate because she is afraid of the COVID-19 infection.

**His reasons for continuing to exercise are:** “I don't want to become bedridden. My eldest daughter is already over 60 years old and I am not in a position to take care of her. Therefore, I do not want to be a caregiver for the elderly

and I do not want to go to an institution because I am afraid of the COVID-19 infection.” GLU is around 110 mg/dl and HbA1c around 6.0%.

**Case 3: 80 years old, male, lives with his wife, annuity life.**

His two children live nearby. He worked from 8:30 am to 16:00 am for 5 days a week until before the COVID-19 (June 2019). He retired because of his advanced age. He avoids going out at times and places where large numbers of people congregate to prevent the spread of COVID-19 after retirement. He exercises daily. He walks for about an hour early in the morning at a nearby sports park. He continues to exercise because, “I quit my job, but I am active in volunteer activities such as being a caretaker in the community. I am needed by society. There are people who need me. If I stop exercising and drink alcohol, my HbA1c immediately rises to 7.0. When I do not drink alcohol and exercise, my HbA1c stays between 6.0% and 6.2%, so I continue to do so”.

**Case 4: 81 years old, male.**

Lives alone on a pension, separated from his wife. He has one child, a daughter, but she is married and independent. He occasionally calls his wife to ask how she is. Before the spread of COVID-19 in 2019, he had taken up the habit of walking for an hour every morning and exercising. Before the spread of COVID-19, he enjoyed drinking and eating with elderly people of the same age in the neighbourhood. They also sometimes went walking together. However, after the spread of the COVID-19, he has been walking alone for one hour every morning from 5:00 am and for about 30 minutes from 4:00 pm before dinner, choosing a course with few pedestrians and wearing a mask, while also going shopping. The reason he continues to exercise is that “I live alone and have no one to take care of me. My daughter is independent and has grandchildren to take care of. He takes two walks a day because “I have time on my hands and if I stay at home all the time, I’m going to fall in love with myself. His BD has remained unchanged before and after the spread of COVID-19, hovering around 140 mmHg/90 mmHg.

## DISCUSSION

Elderly people aged 75 and over are, in the academic jargon of demography and gerontology, referred to as the “latter stage elderly” those aged 75 and over are more likely to develop multiple diseases, have higher rates of hospitalisation and long term care, and find it more difficult to lead independent lives.

In the three cases that participated in this study, BMI was within the normal range and health examination data did not change significantly before and after the COVID-19 infection spread. The three cases had one thing in common: They all had a reason to continue exercising. The Japanese ministry of health, labour and welfare defines the person with an exercise habit as one who exercises at least twice a week for 30 minutes or more per session for at least one year [5]. The subjects of the present study were elderly persons aged 75 years or older. In Japan, 28.5% of men and 26.7% of women aged 75 years or older have an exercise habit. The healthy life expectancy of Japanese people in 2028 was 72.68 years for men and 75.3 years for women [6]. Therefore, this research is the special cases and is very significant. The average life expectancy of Japanese in 2021 was announced as 81.47 years for men and 87.57 years for women. Since the Japanese ministry of health, labour and welfare is holding a conceptual conference for the 100 years life period, this research is a valuable resource for Japan as well [7]. Also In all three cases, there was no decline in cognitive function as far as the interviews were concerned. This was similar to that reported by Murata et al. Elderly people with exercise habits have no decline in cognitive function. In the future, we will also continue to conduct interviews and measurements of muscle strength and motor function to ascertain the actual situation. One limitation of this research was that face to face interviews were essential because the subjects were elderly. In addition, we attempted to interview late life seniors over the age of 75 who were not exercising, but already had cognitive decline that did not lead them to consent to the research. The research was conducted in less than one hour by visiting them in their homes. Few people actively cooperated with the research due to concerns about the spread of infection. Again, the researcher presented vaccination certificates and negative proof of vaccination and thorough infection control measures, such as wearing masks, were taken in the investigation [8].

## CONCLUSION

We found that elderly people over 75 year’s old living in their homes in Japan continue to exercise while working to prevent the COVID-19 infections. We found that their health check-up data did not deteriorate as a result of their exercise and that they continued to live independently and maintain their contributions to society.

### ETHICAL CONSIDERATIONS

This research will be conducted with the consent of the individual in writing, in such a way that the individual cannot be identified. Approval (with approval number) was obtained from the ethical review committee of WAYO women's university.

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