

Dietary changes among Japanese adults since the spread of COVID-19

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SUMMARY

Our dietary habits have changed significantly since the coronavirus disease (COVID-19) outbreak. This study examined the factors related to dietary changes since the COVID-19 outbreak in Japan. An online cross-sectional questionnaire survey was conducted in November 2020 among 6,000 Japanese adults (aged 20-64 years) registered with a research company. Among the participants, 1,215 (20.3%), 491 (8.2%), and 4,294 (71.6%) participants indicated that their dietary habits were healthier, unhealthier, and unchanged, respectively.

- Healthier and unhealthier dietary habits were negatively associated with age and positively associated with a past medical history of dyslipidemia and fear of COVID-19.
- Healthy dietary habits were positively associated with the annual household income, COVID-19 infection of oneself and friends, health literacy, exercise frequency, and smoking.
- Unhealthy dietary habits were positively associated with living alone, COVID-19 infection of colleagues, stress, and obesity.

This study suggested the factors determining healthy and unhealthy dietary changes since the spread of COVID-19.

BACKGROUND

- Our lifestyle, including diet, exercise habits, and work style, are required to change to prevent the spread of COVID-19.
- Dietary habits have changed to become both healthier and unhealthier.
- It is necessary to investigate the factors related to the differences in dietary change.

OBJECTIVE

This study aimed to examine the factors related to dietary changes since the spread of COVID-19 among Japanese adults. (Figure 1)

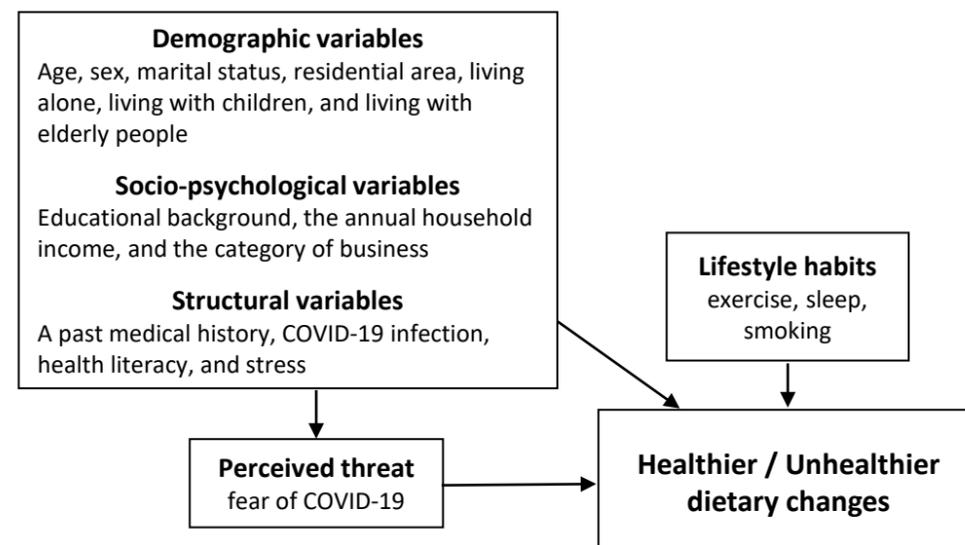


Figure 1. Hypothesis of this study.

METHODS

Study design and subjects:

- A cross-sectional study involving 6,000 individuals aged 20–64 years was conducted in November 2020 via an internet survey developed by a Japanese research company. The participants were individuals who agreed to answer the questionnaire and chosen randomly in accordance with the population composition of prefectures in Japan considering the deviation of age and sex.
- This study was approved by the Ethics Committee of the University of Nagano (No. E20-3).

Measures:

- The change of dietary habits from before the spread of COVID-19 (November 2019 to November 2020)
Question: “Have you changed your dietary habits healthily compared with before the spread of COVID-19 (one year ago, November, 2019)?”
Responses: “My dietary habits have become healthier,” “My dietary habits have become un-healthier,” and “My dietary habits have not changed.”
- Other items referred figure 1.

Data analysis:

- the chi-square test
- the Kruskal-Wallis analysis and Bonferroni’s multiple comparison test
- Multinomial logistic regression analyses; Independent variables: demographic variables (age, sex, marital status, residential area, living alone, living with children, and living with elderly people), socio-psychological variables (educational background, annual household income, and business category), structural variables (past medical history, COVID-19 infection (oneself, family living together, other family and relatives, colleagues, friends), health literacy, stress, BMI category), perceived threat (fear of COVID-19 score), and lifestyle habits (exercise, smoking, sleep time). The independent variables were selected using stepwise methods.

RESULTS

Table 1. Comparison of variables by dietary habits change (only in part)

	Total n = 6,000	Dietary habits change			p
		Healthier n = 1,215 (20.3%)	Unhealthier n = 491 (8.2%)	Unchanged n = 4,294 (71.6%)	
Age*					
20-20 years	1,099 (18.3)	250 (20.6)	120 (24.4)	729 (17.0)	< 0.001
30-39 years	1,256 (20.9)	246 (20.2)	108 (22.0)	902 (21.0)	
40-49 years	1,602 (26.7)	300 (24.7)	127 (25.9)	1,175 (27.4)	
50-59 years	1,405 (23.4)	298 (24.5)	103 (21.0)	1,004 (23.4)	
60-64 years	638 (10.6)	121 (10.0)	33 (6.7)	484 (11.3)	
Past medical history*					
Have dyslipidemia	5,524 (92.1)	1,099 (90.5)	432 (88.0)	3,993 (93.0)	< 0.001
Do not have dyslipidemia	476 (7.9)	116 (9.5)	59 (12.0)	301 (7.0)	
Fear of COVID-19**	18 (14, 21)	19 (15, 22)a	19 (15, 23)a	18 (14, 21)b	< 0.001

*n (%), χ^2 test, **Median value (25, 75 percentile) Kruskal-Wallis test; a,b,c Bonferroni’s multiple comparison test results with significant differences (adjusted P<0.05); A higher score indicated greater fear of COVID-19.

※**Bold** :common factors, **blue**: negatively, **red**: positively, odds ratio (95%CI)

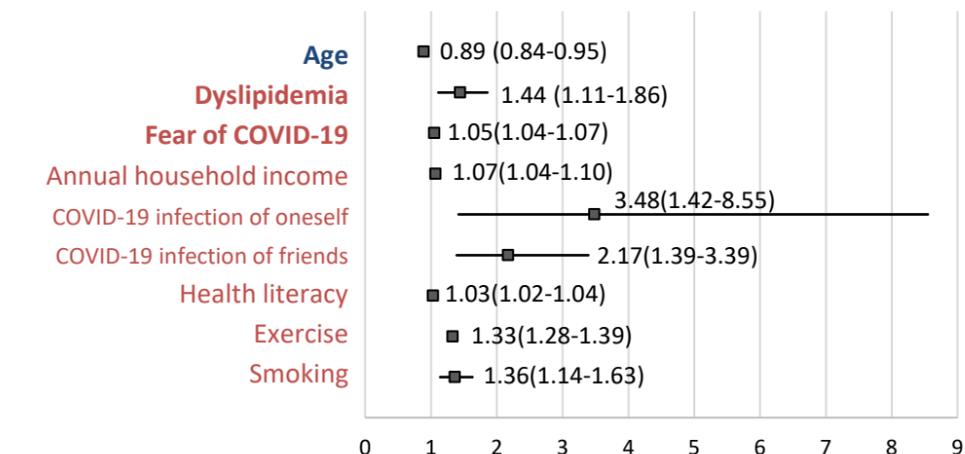


Figure 2. Multinomial logistic regression analyses of the factors associated with healthier dietary changes based on unchanged diet (Reference; dyslipidemia: do not have, COVID-19 infection of oneself: not infected, COVID-19 infection of friends: not infected, smoking: not smoking)

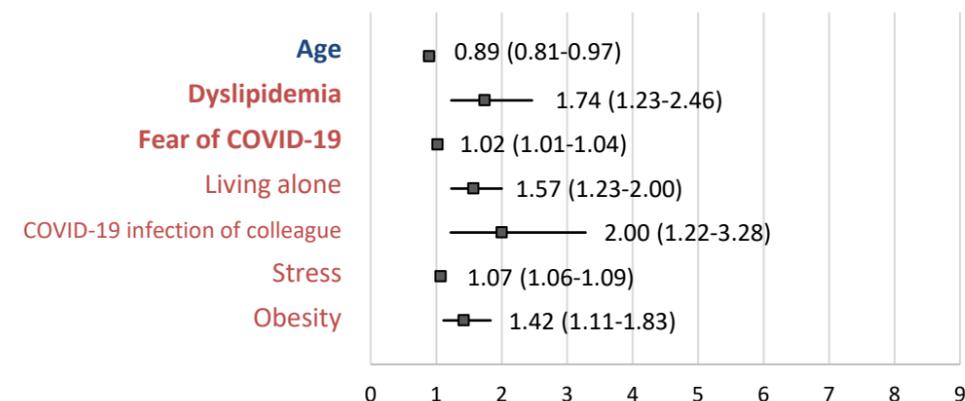


Figure 3. Multinomial logistic regression analyses of the factors associated with unhealthier dietary changes based on unchanged diet (Reference; dyslipidemia: do not have, living alone: living with someone, COVID-19 infection of colleague: not infected, BMI: 18.5 to 25.0 kg/m²)

CONCLUSION

This study suggested the factors of dietary change since the spread of COVID-19. Some factors, such as age, a past medical history, and the fear of COVID-19 were common between healthy and unhealthy dietary changes among the Japanese. The change of lifestyle caused by the COVID-19 pandemic will persist for a while. Therefore, it is necessary to consider strategies to practice healthy diets in this “new normal.”

FUNDING

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