Dietary Consumption and Self-Reported Health Status in Older Adults. -A Cross-Sectional Study-

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CONFLICT OF INTEREST DISCLOSURE

I have no potential conflict of interest to report
INTRODUCTION

Protein, fruits and vegetables intake prevent from frailty, loss of lean body mass.

DASH* diet, Mediterranean Diet and also Japanese dietary pattern decrease frailty and disability.

*DASH; Dietary Approaches to Stop Hypertension
INTRODUCTION

• Association between dietary consumption and objective outcomes such as frailty, cardiovascular disease and mortality have been well investigated.

• However, subjective outcomes are inconsistent.
We investigated the relationship between dietary consumption and subjective health status in older adults.
METHODS

- We assessed subjective health status to older adults based on Japanese Kihon (Basic) check list.
- Kihon (Basic) check list is one of the most popular questionnaire in Japan.
- Kihon (Basic) check list is validated for frailty in older adults.
**Physical status**
1. Have you experienced a fall in the past year?
2. Can you stand on one foot more than five seconds?
3. Do you need cane when walking?
4. Do you feel slowness when walking?
5. Can you walk more than one kilometer (0.6 mile) without rest?

**Psychological status**
6. Have you felt a lack of fulfilment in your daily life?
7. Have you felt a lack of joy when doing the things you used to enjoy?
8. Have you felt difficulty in doing what you could do easily before?
9. Have you felt helpless?
10. Have you felt tired without a reason?

All questions were answered **YES or NO**.
Dietary data covered 13 major food groups: 

Participants' choice from 4 categories:
- Daily
- 3-6 times/week
- 1-2 times/week
- less than once/week
INTRODUCTION

Other variables

• Age
• Gender,
• Body Mass Index
• Family composition
  (living alone, living with married couple,
   or living with parent(s) or/and child(ren))
Nagano prefecture is highest life expectancy in Japan. (Male; 80.9, Female; 87.2 years)
Statistical Methods

• Chi-squared test for categorical variables were used to investigate the relationship between food frequency questionnaire and self-reported health status.

• Multinominal logistic regression analysis were calculated to adjust for age, body mass index and family composition*.

*living alone, living with married couple or living with parent(s) or/and child(ren)
# RESULTS

<table>
<thead>
<tr>
<th>Background data</th>
<th>values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of participants</td>
<td>1394</td>
</tr>
<tr>
<td>Age, years</td>
<td>76.3 ± 5.1</td>
</tr>
<tr>
<td>Sex</td>
<td>Male; 616 (44.2%), Female; 778 (55.8%)</td>
</tr>
<tr>
<td>Body mass index, kg/m²</td>
<td>22.4 ± 3.0</td>
</tr>
</tbody>
</table>

Values are mean ± SD
RESULTS

*Significant differences
RESULTS

Male

- Fish
- Alcohol
- Meat
- Snacks
- Fat or Oil
- Fruits
- Vegetables
- Soybeans
- Dairy Products
- Eggs
- Potatoes
- Seaweeds

Female

- Fish
- Alcohol
- Meat
- Snacks
- Fat or Oil
- Fruits
- Vegetables
- Soybeans
- Dairy Products
- Eggs
- Potatoes
- Seaweeds

- *p < 0.05 Chi-squared test

Living Alone

- Living with Married Couple

- Living with Parent(s) or/and Child(ren)
1. Have you experienced a **fall** in the past year?

### Male
- Fish
- Meat
- Eggs
- Dairy Products
- Snacks
- Fat or Oil
- Fruits
- Potatoes
- Seaweeds

### Female
- Fish
- Meat
- Eggs
- Dairy Products
- Snacks
- Fat or Oil
- Fruits
- Potatoes
- Seaweeds

**Legend**
- **YES**
- **NO**
- †p < 0.05, After adjusted covariates
- *p < 0.05, non-adjusted
2. Can you stand on one foot more than five seconds?

**Male**
- Fish
- Meat
- Alcohol
- Snacks
- Fat or Oil
- Fruits
- Potatoes
- Seaweeds

**Female**
- Fish
- Meat
- Alcohol
- Snacks
- Fat or Oil
- Fruits
- Potatoes
- Seaweeds

- Blue line: YES
- Red line: NO

* $p < 0.05$, non-adjusted
† $p < 0.05$, After adjusted covariates
3. Do you need cane when walking?

**Male**

- Fish
- Meat
- Eggs
- Dairy Products
- Snacks
- Salty Foods
- Fat or Oil
- Fruits
- Vegetables
- Potatoes
- Seaweeds

**Female**

- Fish
- Meat
- Eggs
- Dairy Products
- Snacks
- Salty Foods
- Fat or Oil
- Fruits
- Vegetables
- Potatoes
- Seaweeds

- YES
- NO

* $p < 0.05$, non-adjusted
† $p < 0.05$, After adjusted covariates
4. Do you feel **slowness** when walking?

**Male**
- Fish
- Meat
- Soybeans
- Vegetables
- Dairy Products
- Fat or Oil
- Fruits
- Snacks
- Potatoes
- Seaweeds

**Female**
- Fish
- Meat
- Soybeans
- Vegetables
- Dairy Products
- Fat or Oil
- Fruits
- Snacks
- Potatoes
- Seaweeds

- **YES**
- **NO**

* $p < 0.05$, non-adjusted
† $p < 0.05$, After adjusted covariates
5. Can you **walk more than one kilometer (0.6 mile)** without rest?

### Male
- Fish
- Meat
- Soybeans Products
- Vegetables
- Seaweeds

### Female
- Fish
- Meat
- Soybeans Products
- Vegetables
- Seaweeds

- **Yes**
- **No**

* $p < 0.05$, non-adjusted
† $p < 0.05$, After adjusted covariates
6. In the last 2 weeks have you felt a lack of fulfilment in your daily life?

**Male**
- Fish
- Meat
- Soybeans
- Dairy Products
- Eggs
- Fat or Oil
- Fruits
- Potatoes
- Seaweeds

**Female**
- Fish
- Meat
- Soybeans
- Dairy Products
- Eggs
- Fat or Oil
- Fruits
- Potatoes
- Seaweeds

NO    YES

* p < 0.05, non-adjusted
† p < 0.05, After adjusted covariates
7. In the last 2 weeks have you felt a lack of joy when doing the things you used to enjoy?

**Male**
- Fish
- Meat
- Alcohol
- Snacks
- Fat or Oil
- Fruits
- Potatoes
- Seaweeds

**Female**
- Fish
- Meat
- Alcohol
- Snacks
- Fat or Oil
- Fruits
- Potatoes
- Seaweeds

*¥*p < 0.05, non-adjusted
†*p < 0.05, After adjusted covariates
8. In the last 2 weeks have you felt difficulty in doing what you could do easily before?

**Male**
- Fish
- Alcohol
- Snacks
- Fat or Oil
- Fruits
- Potatoes
- Seaweeds
- Vegetables
- Soybeans Products
- Dairy Products
- Eggs
- Meat

**Female**
- Fish
- Alcohol
- Snacks
- Fat or Oil
- Fruits
- Potatoes
- Seaweeds
- Vegetables
- Soybeans Products
- Dairy Products
- Eggs
- Meat

* p < 0.05, non-adjusted
† p < 0.05, After adjusted covariates
9. In the last 2 weeks have you felt helpless?

Male

Fish
Alcohol
Salty Foods
Snacks
Fat or Oil
Fruits
Potatoes
Seaweeds
Meat

Female

Fish
Alcohol
Salty Foods
Snacks
Fat or Oil
Fruits
Potatoes
Seaweeds
Meat

YES
NO

* $p < 0.05$, non-adjusted
† $p < 0.05$, After adjusted covariates
10. In the last 2 weeks have you felt **tired** without a reason?

**Male**

- Fish
- Alcohol
- Snacks
- Fat or Oil
- Fruits
- Potatoes
- Seaweeds
- **Meat**

**Female**

- Fish
- Alcohol
- Snacks
- Fat or Oil
- Fruits
- Potatoes
- Seaweeds
- **Meat**

**Dairy Products**

**Soybeans Products**

**Eggs**

**Salty Foods**

**Vegetables**

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* $p < 0.05$, non-adjusted

† $p < 0.05$, After adjusted covariates
Summary

<table>
<thead>
<tr>
<th>Positive association</th>
<th>Negative association</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fish</td>
<td>Dairy products</td>
</tr>
<tr>
<td>Meat</td>
<td>Soybeans products</td>
</tr>
<tr>
<td>Eggs</td>
<td>Vegetables</td>
</tr>
<tr>
<td>Dairy products</td>
<td>Seaweeds</td>
</tr>
<tr>
<td>Soybeans products</td>
<td>Potatoes</td>
</tr>
<tr>
<td>Vegetables</td>
<td>Fruits</td>
</tr>
<tr>
<td>Seaweeds</td>
<td>Fat or oil</td>
</tr>
<tr>
<td>Potatoes</td>
<td>Snacks</td>
</tr>
<tr>
<td>Fruits</td>
<td>salty foods</td>
</tr>
<tr>
<td>Fat or oil</td>
<td>Alcohol</td>
</tr>
</tbody>
</table>

Male
Female
Summary

• Older adults who live alone indicated lower food frequency consumption, particularly in men.
• Fish, meat, dairy products, vegetables and potatoes were related to better self-reported health status both men and women.
• Only salty foods were negatively associated with self-reported health status.
Conclusion

• Food frequent questionnaire was related to subjective outcomes in older adults.
• Our findings suggest that to improve dietary pattern particularly in fish, meat, dairy products, vegetables and potatoes might improve subjective health status in older