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Comparison of Subjective Feeling of Dizziness and Simple Taste/Olfactory Test Results in Elderly People (Over 60 Years Old)

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However, until now, the author has not been able to compare the results of a questionnaire survey of Yakumo Town, Hokkaido, and residents of Nagoya City, Aichi Prefecture. Therefore, this time, we will report the results.

201 residents of Yakumo Town (95 men, 106 women: 2019 data) and 55 residents of Nagoya City 24 males and 31 females: 2022 data) participated in the examination.

A self-reported questionnaire was given to the participants to determine the presence or absence of dizziness (1, no dizziness, 2. dizziness, and 3. dizziness all the time).

Keywords: dizziness, taste, olfactory, questionnaire survey.

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Comparison between Residents of Yakumo Town, Hokkaido and Residents of Nagoya City, Aichi Prefecture

Naomi Katayama [α] & Shoko Kondo [σ]

Abstract- For a long time, the author has been involved in taste and smell with Yakumo Town (rural) residents in Hokkaido and Nagoya-City (urban) in Aichi Prefecture. Participants answered a self-administered questionnaire, and then took a simple salty taste test and a simple olfactory test.

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A self-reported questionnaire was given to the participants to determine the presence or absence of dizziness (1, no dizziness, 2. dizziness, and 3. dizziness all the time).

In addition, the participants were given a simple salty taste test (Solceive: manufactured by Advantech), andan olfactory test (smell test: Daiichi Yakuhin Kogyo Co., Ltd.) was performed.

In addition, participants filled in a self-administered questionnaire about their physical conditions (,age, sex, height, weight, systolic blood pressure, and diastolic blood pressure).

As a result, the subjective feeling of dizziness was statistically significantly higher in Nagoya City residents than in Yakumo Town residents (P=0.044*).

In addition, the subjective sense of salty taste and smell was statistically significantly worse in Yakumo Town residents than in Nagoya-shi residents (Salt taste P=0.027*Olfactory P=0.017*).

However, when the results of salty taste and olfactory tests were conducted on the residents of Nagoya City and Yakumo Town, there was no statistically significant difference (salty taste test results P = 0.614, Olfactory test result P=0.052).

Regarding the subjective feeling of dizziness, in the future, we will conduct actual measurements of the sway of the center of gravity using Stabilometer for both residents.

We believe that it is necessary to obtain definite results.

In a self-administered questionnaire sauvery, participants in Yakumo Town answered that it was not well to distinguish between the smell and taste.

We need to ask more detailed questions about the participants' dietary habits in the future.

I think that life survey is necessary.

Keywords: dizziness, taste, olfactory, questionnaire survey.

I. Introduction

Since 2005, I have conducted a simple taste/olfactory test and a self-administered questionnaire at the health checkup for residents of Yakumo Town, Hokkaido[1-11].

Similarly, a simple taste/olfactory test and a self-administered questionnaire survey were conducted at a health class for residents of Nagoya City[12-20].

However, until now, no comparison has been made between the two regions. Therefore, we compared the results of these two regions this time.

Residents of Yakumo Town (FY2019) and Nagoya City (FY2022) were asked to feel dizziness, taste, and olfaction by using a self-administered questionnaire.

And participants also took simple salty taste test and a simple olfactory test.

At the same time, primary data such as age, sex, height, weight, systolic blood pressure, and diastolic blood pressure were obtained.

A questionnaire survey was also conducted on subjective dizziness.

Feeling dizzy (light-headedness, fluffiness) due to changes in the amount and contents of food associated with the decline in taste and smell[21] related to Yakumo Town whaich is located in the south part of Hokkaido island in the northern part of Japan.

There is a little population movement, and the population is settled.

On the other hand, Nagoya City is located almost in the center of Japan, between Tokyo and Osaka.

Because it is a large city, there are various occupations, and the population movement is rapid.

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This study has so far been a self-reported survey of taste, smell, and different living conditions in health checkups for residents of Yakumo Town, Hokkaido.

I've been researching it with a questionnaire, but I haven't made a comparison with other places.

Therefore, in this study, we decided to compare the data obtained from urban and rural paticipants.

II. Materials and Methods

Two houndred one people in Yakumo Town, Hokkaido (106 women, 95 men: 2019 data) and 55 people in Nagoya City, Aichi Prefecture (31 women, 24 men, 2022 data) were compared.

Dizziness was also included in the self-administerd questionnaire survey of the participants. We asked the following questions.1.not dizzy, 2. sometimes, 3. always. Participants circles the items that apply.

In addition, a simple taste test (salty taste: Soluseive: manufactured by Advantech) and a simple olfactory test (smell test) were performed.

Ick: manufactured by Daiichi Yakuhin Sangyo Co., Ltd.) was used to obtain the test results.

In addition, praimary data such as age, sex, height, weight, systolic blood pressure, and diastolic blood pressure were obtained.

Other self-administered questionnaire items included the subjective sense of taste, smell, salivary flow, and use of eating out. We also investigated the frequency and usual seasoning. (See Table 1):

The method of the simple taste test[22] and the method of the simple olfactory test[23] followed the specifications.

Table 1. Questionnaire question content

	1	2	3	4	5	6
Sex	Male	Female				
dizziness	None	Sometimes	Common			
Saliva	Good	normal	bad			
olfactory	Good	normal	bad			
taste	Good	normal	bad			
requency of eating out	Daily	4-5 times / week	2-3 times / weed	one time / week	2-3 times / month	Rarely used
teste of everyday meals	Strong seasoned	Slightly seasoned	slightly lightly seasoned	lightly seasoned		

a) Ethical review board

This study conducted with the approval of the Ethical Review Board (Nagoya women's University Ethics Committee: "hitowomochiitakennkyuunikann suruiinnkai"). The approval number is 2019-26.

III. Results

There were no regional differences in sex (see Table 2) and hight (see Table 4) in the participants' physical data.

Weight (see Table 5), systolic blood pressure (see Table 6), and diastolic blood pressure (see Table 7) were eight higher in Nagoya.

It was statistically significantly lower than Kumocho.

Yakumo town has 201 people (see Table 3) average ± SD value of 68.7 ± 6.0 years old Nagoya city has 55 people 74.9±7.1.

Table 2. Comparison of participant gender data

	N	City n=55	Y	Town n=201
Average value		1.564		1.527
Standard deviation		0.501		0.5
F-test		P=0.484		
Unpaired Student-t test		P=0.634		
Mann- Whitney test				

Table 3. Comparison of participant age data

	N	City n=55	Y	Town n=201
Average value		74.855		68.687
Standard deviation		7.083		5.956
F-test		P=0.045*		
Unpaired Student-t test				
Mann- Whitney test		P=0.0001**		

Table 4. Comparison of participant height data

	N	City n=55	Y	Town n=201
Average value		158.838		159.361
Standard deviation		7.468		8.562
F-test		P=0.080		
Unpaired Student-t test		P=0.672		
Mann- Whitney test				

Table 5. Comparison of participant weight data

	N	City n=55	Y	Town n=201
Average value		55.62		60.618
Standard deviation		8.824		11.476
F-test		P=0.005**		
Unpaired Student-t test				
Mann- Whitney test		P=0.005**		

Table 6. Comparison of participant systolic blood pressure data

	N	City n=55	Y	Town n=201
Average value		124.587		139.731
Standard deviation		13.621		20.518
F-test		P=0.0001**		
Unpaired Student-t test				
Mann- Whitney test		P=0.0001**		

Table 7. Comparison of participant diastolic blood pressure data

	N	City n=55	Y	Town n=201
Average value		71.116		78.303
Standard deviation		8.393		12.239
F-test		P=0.0001**		
Unpaired Student-t test				
Mann- Whitney test		P=0.007**		

The average ± SD value for subjective dizziness (see Table 8) was 1.379 ± 0.592 in Yakumo Town, and 1.379 ± 0.592 in Nagoya City was 1.211 ± 0.546.

This result was P = 0.044* in the Mann-Whitney test, and was statistically superior to the elderly in Nagoya City.

The results showed that the subjects had dizziness subjectively.

Table 8. Comparison of participant aware feeling of dizziness data

	N City n=55	Y Town n=201
Average value	1.379	1.211
Standard deviation	0.592	0.546
F-test	P=0.005**	
Unpaired Student-t test		
Mann- Whitney test	P=0.044*	

The subjective taste (see Table 9) has a mean ± SD value of 0.1.607 ± 0.538 in Yakumo and 1.426±0.49 in Nagoya.

This result was P = 0.027* in the Unpaired Student-t test, showing a statistically significant.

From this result, it was found that the participants in rural areas subjectively felt that the taste was difficult to understand compared to those in the urban areas.

Table 9. Comparison of participant aware taste data

	N City n=55	Y Town n=201
Average value	1.426	1.607
Standard deviation	0.49	0.538
F-test	P=0.228	
Unpaired Student-t test	P=0.027*	
Mann- Whitney test		

The subjective sense of smell (see Table 10) was 0.701 ± 0.539 in Yakumo Town, and 0.150±0.575 in Nagoya.

From this result, P = 0.017* in the Unpaired Student t-test, which is statistically significant for Yakumo Town.

The results showed that older adults subjectively feel that smell is difficult to understand.

Table 10. Comparison of participant aware olfactory data

	N City n=55	Y Town n=201
Average value	1.5	1.701
Standard deviation	0.575	0.539
F-test	P=0.261	
Unpaired Student-t test	P=0.017*	
Mann- Whitney test		

The subjective saliva output (see Table 11) has a mean ± SD value of 0.781 ± 0.000 in Yakumo Town, and1.773 ±0. 000 in Nagoya City.

This result was P = 0.139 in the Unpaired Student's t-test, and there was no statistically significant difference.

Table 11. Comparison of participant aware saliva data

	N City n=55	Y Town n=201
Average value	1.673	1.781
Standard deviation	0.511	0.471
F-test	P=0.209	
Unpaired Student-t test	P=0.139	
Mann- Whitney test		

The average ± SD value for the frequency of eating out (see Table 12) is 5.095±1.037 in Yakumo Town and4.455 ±1.424 in Nagoya City.

This result was P=0.004** in the Mann-Whitney test, indicating a statistically significant.

The results showed that those with the high frequency of eating out had a high frequency of eating out.

Table 12. Comparison of participant frequency of eating out data

	N City n=55	Y Town n=201
Average value	4.455	5.095
Standard deviation	1424	1.037
F-test	P=0.001**	
Unpaired Student-t test		
Mann- Whitney test	P=0.004**	

The seasoning of ordinary meals (see Table 13) has an average ± SD value of 2.542 ± 0.734 in Yakumo Town and 2.704 ± 0.924 in Nagoya City.

This result was P = 0.155 by the Mann-Whitney test, and there was no statistically significant difference.

Table 13.Comparison of participant teste of everyday meals data

	N City n=55	Y Town n=201
Average value	2.704	2.542
Standard deviation	0.924	0.734
F-test	P=0.012*	
Unpaired Student-t test		
Mann- Whitney test	P=0.155	

The results of the simple salty taste (see Table 14) are mean ±SD values of 0.89 ±0.387 in Yakumo Town and 0.86±0.389 in Nagoya City.

This result was P=0.614 in the Unpaired Student's t-test, and there was no statistically significant difference.

Table 14.Comparison of participant taste test data

	N	City n=55	Y	Town	n=201
Average value		0.86		0.89	
Standard deviation		0.389		0.387	
F-test			P=0.491		
Unpaired Student-t test			P=0.614		
Mann- Whitney test					

The results of the olfactory test (see Table 15) are average ±SD values of 7.348 ± 3.007 in Yakumo and 6.455 ±3.310 in Nagoya.

This result was P = 0.0.052 in the Unpaired Student's t-test, and there was no statistically significant difference.

Table 15 . Comparison of participant olfactory test data

	N	City n=55	Y	Town	n=201
Average value		6.455		7.368	
Standard deviation		3.31		3.007	
F-test			P=0.172		
Unpaired Student-t test			P=0.052		
Mann- Whitney test					

IV. Discussion

For primary data (gender, age, height, weight, systolic blood pressure, diastolic blood pressure), participants were statistically significantly older and underweight than rural participants.

The average value of blood pressure was within the normal renge for both Nagoya data and Yakumo data. However, the Nagoya data was statistically significantly lower than the Yakkumo data.

In addition, there were regional differences in subjective dizziness in this survey.

Urban participants said they were statistically significantly dizzier than country participants.

However, there were no regional differences in the salty taste test results.

And also, there was no regional difference in the olfactory test results in the present data.

However, the P-value after statistical processing was P=0.052, so if we increased the data for urban residents, there was a possibility that there would be a statistically significant difference in the olfactory test results.

The frequency of eating out was statistically significantly higher among participants in urban areas. Still, there was no significant difference between the two regions regarding the seasoning of things. Research results on the relationship between salty test results [24-27] and blood pressure[28] have also been reported, so that future studies, we will investigate the association between dietary habits and blood pressure. It is necessary to investigate this in more detail.

Changes due to age[29] and association with Alzheimer's dementia[30] results such as application to patients[31] have been presented. We think it will be important to investigate resional differences in Japan in the future.

We will continue to do research and collect more data in the future, and not only subjective feelings of dizziness but also stabilization tests by using Stabilometer.

We also believe that a detailed questionnaire survey on dietary habits is necessary.

V. Conclusion

Urban participants seid they were statistically significantly dizzier than country participants. However, there were no regional differences in the results of the salty taste test results. And also, there was no regional difference in the olfactory test results in the present data. However, the P-value after statistica processing was P=0.052, so if we increased the data for urban residents, there was a possibility that there would be a statistically significant difference in the olfactory test results. We look forward to future results.

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