

Evaluating the food consumption among Indonesian young adults lived in a different environment

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ABSTRACT

Background: Indonesian young adults who live abroad usually buy meals from café or catering. These meals tend to be less nutritious, including high fat, low fiber, and high carbohydrate.

Objective: This study aimed to investigate the pattern of food consumption among young Indonesian adults who lived in a different environment.

Materials and Methods: A cross-sectional observational study was carried out with 497 participants (73 men and 420 women). Data were collected using a validated food frequency questionnaire (FFQ) of 78 food groups. In addition, the Mann-Whitney U test was conducted to compare consumption patterns among study participants who lived in a different environment (Malang city, East Java, Indonesia, and Taipei City, Taiwan). Furthermore, the Chi-Square test and Fisher's exact test analyzed the consumption level by gender.

Results: Our study indicated no significant differences between food consumption of Indonesian young adults in Malang city, Indonesia, and Taipei City, Taiwan ($p=0.623$). Meanwhile, beverage (tea) was significantly different between gender in the home country ($p=0.005$). In contrast, participants who lived abroad showed significantly different consumption levels of fast food (instant noodle) and plant protein source (tofu) across gender ($p=0.01$ and $p=0.02$).

Conclusion: The present study showed that fruits were often changed into juices, especially more frequent in a home country than abroad. Meanwhile, several food items, including beverages (tea), fast food, and plant protein source (tofu), showed significant differences across gender.

Keywords: food consumption; young adults; Indonesian-style diet

BACKGROUND

Indonesian students who study abroad are experiencing many changes in order to adapt to the new environment, including a change in eating habits¹. A previous study by Doo and Kim (2017) indicated that changing dietary habits among international students might increase the risk of obesity². One cross-sectional study described that International students tended to fulfill their requirement of energy intake by purchasing meals from stores³. However, as dining out is becoming a trend, studies found that frequent dine-out eating habit was closely linked to obesity⁴. The more frequent having away-from-home meals, the more prevalent obesity⁵. According to previous investigations, meals are usually characterized by high energy content, total fat, saturated fat, and low micronutrient compositions^{3,4}. In addition, a previous study conducted in the United States indicated that caloric intake from adults who frequently eat out was higher than participants who consume at-home meals in daily habit⁶. Moreover, a study by Larson et al. (2011) reported that

frequent fast-food consumption was associated with a higher risk of getting overweight/obese in young adults⁷. In Indonesia, several observational studies had reported that dining out significantly elevated the risk of having higher body mass index (BMI) status^{8,9}. A study in 148 adolescents showed that local street food consumption (> 300 kcal) contributed 3.2 times to obesity⁹.

According to World Health Organization (WHO), overweight and obesity are defined as abnormal or excessive fat accumulation that adversely affects nearly all body's physiological functions and comprises a significant public health threat¹⁰. A general population measure of overweight and obesity is the BMI, calculated by dividing a person's weight (in kilograms) by the square of a person's height (in meters)¹¹. The Indonesian Ministry of Health specifies a BMI ≥ 25 kg/m² as overweight, while BMI ≥ 27 kg/m² as obese¹². The globalization of food systems that produce more processed and affordable food, nutrient-poor meals, and beverages has been identified as a significant reason for increased obesity worldwide¹³. In Indonesia, the

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prevalence of obesity among young adults was high among men (6.7%) and women (15%)¹⁴. Therefore, to prevent obesity, understanding possible differences in the living environment in the association between dietary patterns and obesity is essential.

Evidence from observational studies is limited regarding the most favorable consumption pattern to be healthy or unhealthy. Therefore, the objective of this study is to investigate the association between eating away from home and obesity and to evaluate the food consumption among Indonesian young adults in the home country and abroad.

MATERIALS AND METHODS

Study design

The cross-sectional survey recruited 497 Indonesian young adults aged 17-42 years. Our participants were divided into two groups, following their current living places. We collected data for living abroad participants from Indonesian people who resided in Taipei city, Taiwan (n=100) and living in their home country from Indonesian people who resided in Malang city (n= 397). This study was conducted from September to October 2016.

Dietary assessment

FFQ consisted of 10 sections comprised of 78 food items. Participants had to indicate the frequency of consumption of each food item during the last three months period. Frequency was measured in standard portions per day/week/month/rarely. There were six frequencies assessed 'more than one times a day' valued as 1, '1 times a day' valued as 2, '4-6 times a week' valued as 3, '1-3 times a week' valued as 4, '1-3 times a month' valued as 5, and 'never' valued as 6.

Food items were divided into staple food, fast food, animal protein sources, plant protein sources, dairy products, fruits, vegetables, snacks, beverages, and supplements. The staple food group comprised white rice, corn rice, red rice, noodle, sweet potato, cassava, bread, and potato. The fast-food group comprised cereal haver-mout, instant noodle, spaghetti, burger, french fries, pizza, nuggets, sausage, sardines, kebab, and fried chicken. Animal protein sources comprised beef, lamb, chicken, pork, egg, salted egg, innards, fish, salted fish, shrimp, and squid. Plant protein sources comprised mushrooms, tofu, Tempe, long bean, bean sprouts, and red beans. Vegetables comprised broccoli, carrot, mustard, tomato, spinach, kale, chayote, cabbage, papaya leaves, and lettuce. Fruits comprised apple, orange, guava, tomato cherry, banana, kiwi, dragon fruit, mango, melon, watermelon, pineapple, pear, blackberry, papaya, longan, and yoke. Dairy products comprised whole cream milk, skimmed milk, soy milk, yogurt, ice cream, cheese, and mayonnaise. The snack group comprised traditional cake, rice cake, mochi, moon cake, packaging food, frying food, meatball, sweet cake, pudding, chocolate, and candy. Beverages comprised fruit juices, soft drinks, coffee, tea, bubble tea, and alcohol. Supplements comprised honey, omega-3, vitamin C, vitamin B complex, and iron.

Ethics

A panel of experts reviewed a self-administered questionnaire. Prior to the commencement of research, ethical approval was obtained from the IRB of Poltekkes Kemenkes Malang with the register no.190/KEPK-POLKESMA/2016. Written consent was obtained from all participants.

Statistical analysis

Statistical analyses were performed using SPSS software version 25.0. Descriptive statistics were used to describe the distribution of the variables. The Wilcoxon Mann Whitney U test was conducted to compare consumption patterns in Malang and Taipei. Two-tailed statistical significance was set at $p < 0.05$. The comparison of level consumption and gender were assessed with the Chi-Square test and Fisher's exact test.

RESULTS

Food frequency in the home country

Figure 1 showed that young adults who lived in a home country (Malang city, Indonesia) tended to consume white rice more than once a day as the main staple food (n=319, 80.4%). The fast-food group frequently consumed instant noodles around 1 – 3 times a week (n=136, 34.3%). Favorite animal protein sources for Indonesian young adults were chicken (n=105, 26.4%) and egg (n=129, 32.5%) approximately 4 – 6 times a week. Malang city consumed Tempe (n=136, 34.3%) and tofu (n=131, 32.9%) as plant protein sources 4 – 6 times a week. The vegetable group consumed mustard (n=96, 24.2%) approximately 4 – 6 times a week. Moreover, they were seldom consuming apple, orange, banana, watermelon, and melon (n=130, 32.7%; n=138, 34.8%; n=111, 28%; n=127, 32%; n=126, 31.7%; respectively) around 1 – 3 times a month. For dairy products, ice cream (n=159, 40.1%), cheese (n=117, 29.5%), and full cream milk (n=101, 25.4%) became their favorite to consume in 1 – 3 times a month. Their favorite snacks group was packaging food, frying food, and meatball (n=121, 30.5%; n=123, 30.9%; n=138, 34.8%; respectively), consumed around 1 – 3 times a week. Furthermore, they consume juices (n=128, 32.2%) as their beverage 1 – 3 times a week. Last, they almost neither consumed honey (n=253, 63.7%) nor supplements (n=390, 98.2%).

Food frequency in abroad

In Figure 2, Indonesian young adults who lived abroad (Taipei City, Taiwan) consumed white rice (n=64, 64%) as their main staple food more than once a day. They also consumed instant noodles (n=42, 42%) as their favorite fast food approximately 1 – 3 times a week. They tended to consume chicken (n=35, 35%) and egg (n=32, 32%) around 1 – 3 times a week in animal protein sources. They frequently consumed tofu (n=34, 34%) as a plant protein source approximately 4 – 6 times a week. Vegetables group such as spinach, mustard, carrot, and tomato (n=32, 32%; n=35, 35%; n=35, 35%; n=32, 32%; respectively) were consumed around 1 – 3 times a week as well as fruit group such as banana (n=30, 30%). Most of them seldom consumed dairy products, especially ice cream (n=45, 45%) 1 – 3 times a month. For snacks, packaging food (n=35, 35%) was their favorite to consume

around 1 – 3 times a week. Tea (n=22, 22%) and its product such as bubble tea (n=27, 27%) became their favorite beverage to consume 1 – 3 times a week. Last, they did not consume honey (n=69, 69%) even supplements (n=71, 71%).

Comparison of food consumption in the home country and abroad

Table 1 showed no significant differences between food consumption of Indonesian young adults in Malang city and Taipei city (p=0.623). However, there were significant differences in consumption of pizza, sausage, nugget, spaghetti, chicken, egg, fish, shrimp, squid, tofu, tempeh, long beans, bean, kale, mustard, chayote, banana, watermelon, melon, yogurt, soy milk, frying food, traditional food, meatball, juices, tea, coffee, and bubble tea (p<0.01, respectively). Of fast food, pizza and spaghetti were more favorites in Taipei (1 – 3 times a month) than in Malang. On the other hand, young Malang adults consumed sausages and nuggets more frequently than in Taipei. Moreover, chicken and egg were less consumed (1 – 3 times a week) in Taipei than in Malang. They who lived abroad tended to consume seafood such as shrimp and squid 1 – 3 times a month than others who lived in their home country, but not for fish. In Taipei, tofu was more prevalent (4 – 6 times a week) than time. Nevertheless, young adults in Malang city more often consumed vegetables at least 1 – 3 times a week than Taipei, but the opposite for fruits. The favorite fruit of young adults who lived in Taipei was bananas (1 – 3 times a week). On the other hand, yogurt and soy milk were more often consumed (1 – 3 times a month) in Taipei than in Malang. Of snacks, frying food, and meatballs were often consumed (1 – 3 times a week) in the home country. The favorite beverage in Malang city was juices (1 – 3 times a week). However, tea and bubble tea were more frequently consumed in Taipei city (1 – 3 times a week) and coffee (1 – 3 times a month).

Characteristic of level consumption according to gender in the home country and abroad

Table 2. Staple food (white rice) is habitually consumed among Indonesian who live both in the home country (87.7% for women, 90% for men) and abroad (74.6% for women, 89.2% for men). In the home country, women had a higher intake of fruit (banana 11.5%), dairy products (full cream milk 14.2%), and snack (packaging food 19.9%) compared to men. While the proportion of staple food (white rice 90%), fast food (instant noodle 12.5%), an animal protein source (egg 37.5%), a plant protein source (tofu 50%), vegetable (mustard 22.5%), and beverage (tea 20%) among men was higher than women. Level consumption of beverage (tea) was significantly different between gender (p=0.005), but not in others.

Furthermore, abroad (Table 2), women tend to have a higher proportion of animal protein (egg 19%), a plant protein source (tofu 20.6%), vegetable (mustard 19%), snacks (packaging food 12.7%), beverage (tea 12.7%) than men. In contrast, the proportion of staple food (white rice 89.2%), fast food (instant noodle 10.8%), fruit (banana 8.1%), and dairy product (full cream milk 16.2%) consumption was higher among men than women.

Furthermore, level consumption of fast food (instant noodle) and plant protein source (tofu) were significantly different between gender (p=0.01 and p=0.02).

DISCUSSION

This study was based on a socio-demographic characteristic of participants in the previous study^{15,16}. In total, 397 participants lived in Malang city, while 100 participants lived in Taipei city as overseas students. This result shows no significant differences between the food consumption of Indonesian young adults in Malang city, Indonesia and Taipei city, Taiwan does not expect from the authors' hypothesis. Eating patterns describe how people eat at the level of an eating occasion and may include a range of indicators such as frequency, timing, skipping of meals, and frequency and timing of snacks¹⁵. An Indonesian-style diet consists of staple food, animal or plant protein sources, but sometimes with vegetables and fruits. Rice, especially white rice, is a typical starchy food eaten by Indonesian people. The important role of diet in preventing non-communicable diseases (e.g., cardiovascular disease and some cancers) is well documented¹⁶. Current dietary advice was framed around the amount and types of food populations should consume rather than considering eating patterns¹⁷. A recent study showed that animal protein sources were less consumed in Taipei. It might be because of the limited access to halal food and fear of eating non-halal food¹⁸. Because of that, they prefer seafood such as shrimp and squid.

Pizza and spaghetti were also more prevalent in Taipei city. The previous study indicated that high consumption of carbohydrate sources and a high dietary GI is associated with good sleep, especially good sleep duration. Meanwhile, higher noodle consumption is associated with poor sleep quality. The effects of starchy foods on sleep may differ according to their GI values. Diets with a high GI, especially those with high rice, may contribute to good sleep¹⁹. Despite this, consuming enough fruits and vegetables as a healthy dietary pattern could reduce the risk of obesity^{20,21}.

Moreover, limiting energy-dense food, low-nutrient food, and sugary drinks could also decrease heart disease 22 and type 2 diabetes^{23,24}. However, young adults did not consume enough fruits and vegetables²⁵. In this study, Indonesian young adults consumed fruits and vegetables once a week. Moreover, they frequently consumed frying food, meatballs, coffee, and tea or bubble tea. In addition, they often ate energy-dense food, low-nutrient food, and sugary drinks^{26,27}.

The tea consumption and instant noodle and tofu are significantly different among gender. This case may prove that men drinking tea are more habitual than women in both cities. On the contrary, Demura et al.²⁸ found more young females drank tea than males. In addition, men's instant noodles and tofu consumption are more different than women abroad. According to Huh et al. (2017), males are also more likely to consume instant noodles. Subjects who frequently consumed instant noodles had lower-income, more physical activity, and were more likely smokers²⁹. The present study showed that fruit juice had become the favorite healthy beverage of young adults in

their home country. In large parts of the world, food consumption has changed over the last decades towards higher intakes of processed and energy-rich foods, including beverages³⁰. Lately, great attention has been given to health aspects of beverage consumption, investigating the association between specific beverages and the development of metabolic diseases³¹.

Additionally, a previous review study on children reported that consuming 100% juice provided beneficial

nutrients and a higher overall diet quality³¹. In vitro study showed that fiber retention in the fruit smoothies might positively affect glycemic response and may contribute to daily fiber requirements³²—consumption of juice and tea associated with beneficial lifestyle characteristics including healthy food choices³¹. On the other hand, Snack behaviors seemed to be more variable and might represent a more significant opportunity for improving overall dietary profiles³³.

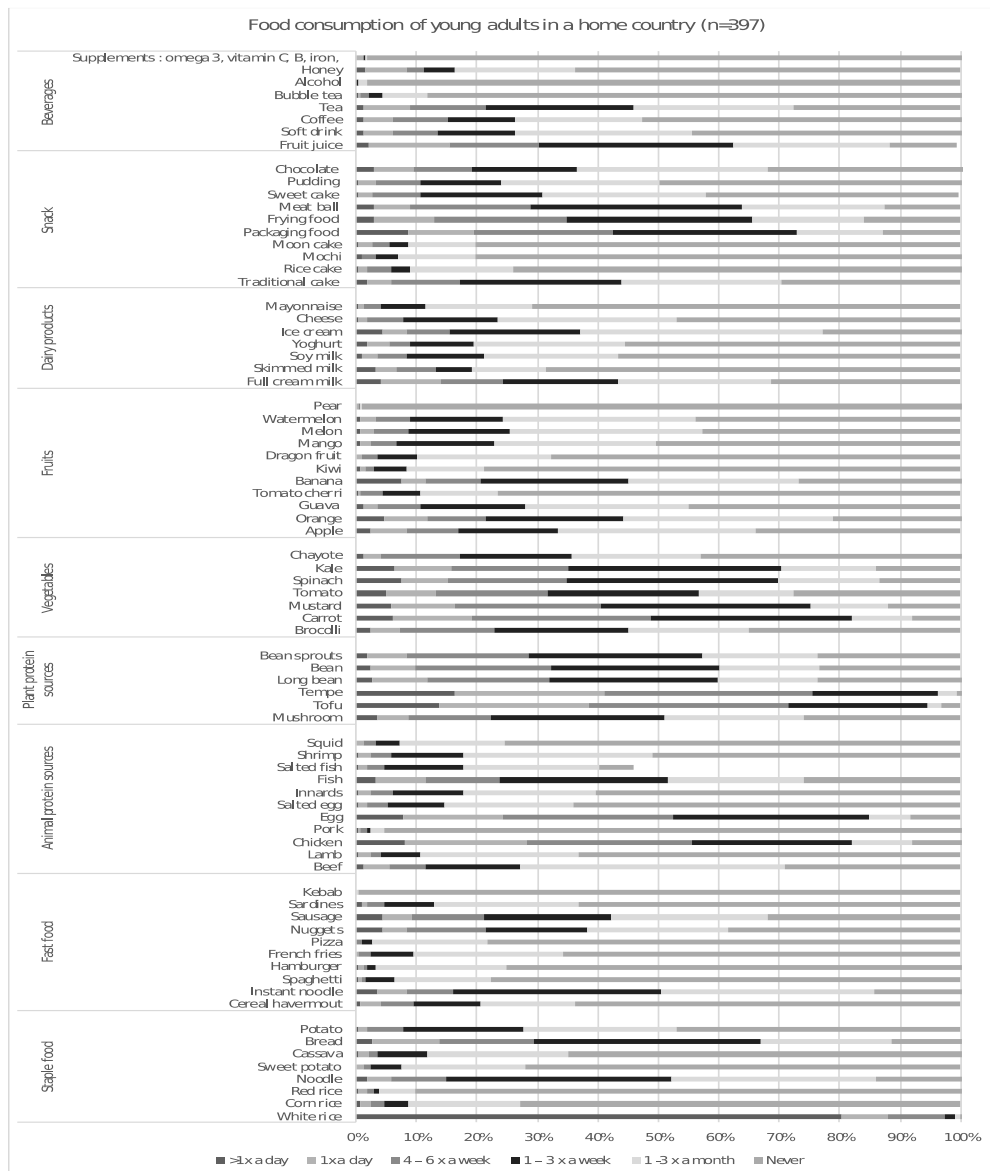


Figure 1. Food frequency in the home country (n=397)

Successful promotion of fruits and vegetable intake in young adults might require a constellation of efforts that influence young adults' eating behaviors³⁴. The development of multi-context or multilevel interventions needs to be considered. In particular, more effort was

necessary to improve home and school neighborhood environments to promote adolescents' healthy eating behaviors. In addition, parents' education through nationwide and local campaigns might be continually implemented³⁵.

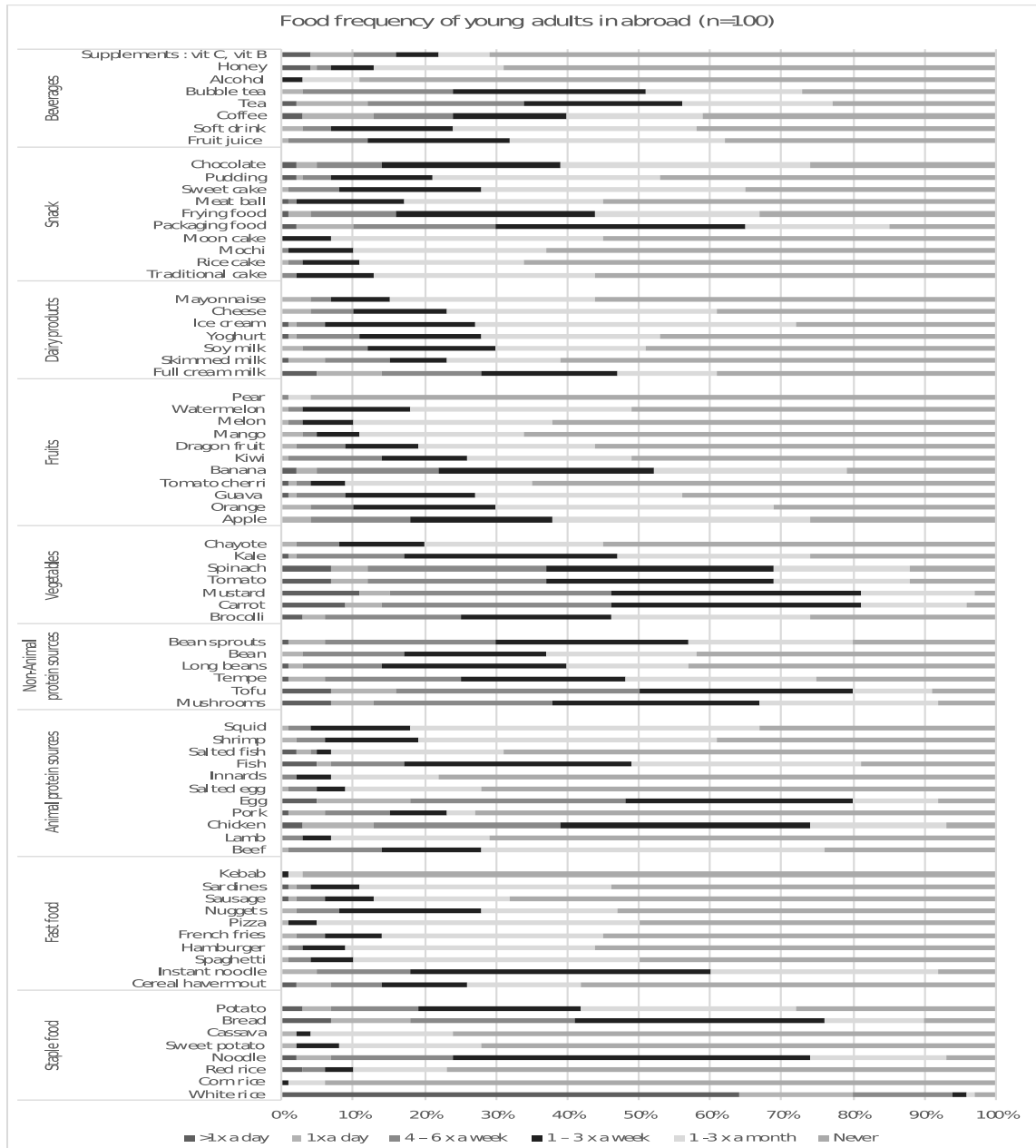


Figure 2. Food frequency in abroad (n=100)

There were limitations associated with the assessment of dietary intake. Even though FFQ were commonly used to infer dietary patterns and dietary intake in epidemiological studies, they were prone to inherent error and limited in their ability to assess all dietary components. Although 78 foods were considered within FFQ, other food consumed may have been missed. There were also drawbacks of dietary pattern analysis, including consolidation of the food items into groups, choosing the number of factors to be retained, selecting the rotation method, and naming the factor identified³⁶. As this was a cross-sectional study, dietary patterns were only assessed

at a single time point. Therefore we were unable to account for temporal changes over some time.

However, other studies had used comparable methods and highlighted the reproducibility of dietary patterns over time³⁷. The importance of adjusting for energy misreporting when examining relations between eating patterns, nutrient intakes, and diet quality³³.

CONCLUSIONS

This study presents no significant difference in food consumption among Indonesian young adults in Malang and Taipei. Overall, they seldom consumed healthy food such as yogurt, vegetables, and fruits. However, consuming fruits is often changed into juices,

especially more frequent in Malang city than Taipei city. Whereas, abroad, level consumption of fast food (instant Furthermore, the level of beverage consumption (tea) was significantly different between gender in the home country. noodle) and plant protein source (tofu) were significantly different between gender.

Table 1. The comparison of food consumption in home country (Indonesia) and abroad (Taiwan) (n=497)

Food Items	Home Country (n=397)			Abroad (n=100)			p-value
	Median	IQR	Min-Max	Median	IQR	Min-Max	
Staple food							
White rice	1	1 - 1	1 - 6	1	1 - 2	1 - 6	> 0.05
Bread	4	3 - 5	1 - 6	4	3 - 4	1 - 6	> 0.05
Noodle	4	4 - 5	1 - 6	4	4 - 5	1 - 6	> 0.05
Potato	5	4 - 6	1 - 6	5	4 - 6	1 - 6	> 0.05
Corn rice	6	5 - 6	1 - 6	6	6 - 6	4 - 6	> 0.05
Red rice	6	6 - 6	1 - 6	6	6 - 6	1 - 6	> 0.05
Sweet potato	6	5 - 6	2 - 6	6	5 - 6	2 - 6	> 0.05
Cassava	6	5 - 6	1 - 6	6	6 - 6	2 - 6	> 0.05
Fast food							
Cereal havermout	6	5 - 6	1 - 6	6	4 - 6	1 - 6	> 0.05
Instant noodle	4	4 - 5	1 - 6	4	4 - 5	1 - 6	> 0.05
Pizza	6	6 - 6	3 - 6	5	5 - 6	3 - 6	< 0.01*
Sausage	5	4 - 6	1 - 6	6	5 - 6	1 - 6	< 0.01*
Nugget	5	4 - 6	1 - 6	6	4 - 6	1 - 6	< 0.01*
Sardines	6	5 - 6	1 - 6	6	5 - 6	1 - 6	> 0.05
Spaghetti	6	6 - 6	1 - 6	5.5	5 - 6	2 - 6	< 0.01*
Hamburger	6	5.5 - 6	1 - 6	6	5 - 6	2 - 6	> 0.05
French fries	6	5 - 6	2 - 6	6	5 - 6	2 - 6	> 0.05
Kebab	6	6 - 6	5 - 6	6	6 - 6	4 - 6	> 0.05
Animal protein sources							
Chicken	3	2 - 4	1 - 6	4	3 - 5	1 - 6	< 0.01*
Egg	3	3 - 4	1 - 6	4	3 - 4	1 - 6	< 0.01*
Beef	5	4 - 6	1 - 6	5	4 - 5	1 - 6	> 0.05
Innards	6	5 - 6	1 - 6	6	6 - 6	1 - 6	> 0.05
Fish	4	4 - 6	1 - 6	5	4 - 5	1 - 6	< 0.01*
Shrimp	6	5 - 6	1 - 6	5	5 - 6	1 - 6	< 0.01*
Salted fish	6	5 - 6	1 - 6	6	5 - 6	1 - 6	> 0.05
Squid	6	6 - 6	1 - 6	5	5 - 6	2 - 6	< 0.01*
Lamb	6	5 - 6	1 - 6	6	5 - 6	3 - 6	> 0.05
Pork	6	6 - 6	1 - 6	6	5 - 6	1 - 6	> 0.05
Salted egg	6	5 - 6	1 - 6	6	5 - 6	2 - 6	> 0.05
Plant protein sources							
Mushroom	4	4 - 6	1 - 6	4	3 - 5	1 - 6	> 0.05
Tofu	3	2 - 4	1 - 6	3.5	3 - 4	1 - 6	< 0.01*
Tempe	3	2 - 3	1 - 6	5	3.25 - 5.75	1 - 6	< 0.01*
Long bean	4	3 - 5	1 - 6	5	4 - 6	1 - 6	< 0.01*
Bean sprouts	4	3 - 5	1 - 6	4	3 - 5	1 - 6	> 0.05
Bean	4	3 - 5	1 - 6	5	4 - 6	2 - 6	< 0.01*
Vegetables							
Spinach	4	3 - 5	1 - 6	4	3 - 5	1 - 6	> 0.05
Kale	4	3 - 5	1 - 6	5	4 - 6	1 - 6	< 0.01*
Mustard	3	3 - 4.5	1 - 6	4	3 - 4	1 - 6	< 0.01*
Carrot	4	3 - 4	1 - 6	4	3 - 4	1 - 6	> 0.05
Broccoli	5	4 - 6	1 - 6	5	3.25 - 6	1 - 6	> 0.05
Tomato	4	3 - 6	1 - 6	4	3 - 5	1 - 6	> 0.05
Chayote	5	4 - 6	1 - 6	6	5 - 6	2 - 6	< 0.01*
Fruits							
Apple	5	4 - 6	1 - 6	5	4 - 6	1 - 6	> 0.05

Food Items	Home Country (n=397)			Abroad (n=100)			p-value
	Median	IQR	Min-Max	Median	IQR	Min-Max	
Orange	5	4 - 5	1 - 6	5	4 - 6	1 - 6	> 0.05
Banana	5	4 - 6	1 - 6	4	4 - 5	1 - 6	< 0.01*
Watermelon	5	5 - 6	1 - 6	6	5 - 6	2 - 6	< 0.01*
Melon	5	4 - 6	1 - 6	6	5 - 6	2 - 6	< 0.01*
Guava	5	4 - 6	1 - 6	5	4 - 6	1 - 6	> 0.05
Tomato cherri	6	6 - 6	1 - 6	6	5 - 6	1 - 6	> 0.05
Kiwi	6	6 - 6	1 - 6	6	4 - 6	2 - 6	> 0.05
Dragon fruit	6	5 - 6	2 - 6	6	5 - 6	2 - 6	> 0.05
Mango	6	5 - 6	1 - 6	6	5 - 6	2 - 6	> 0.05
Pear	6	6 - 6	2 - 6	6	6 - 6	3 - 6	> 0.05
Dairy products							
Ice cream	5	4 - 5	1 - 6	5	4 - 6	1 - 6	> 0.05
Cheese	5	5 - 6	1 - 6	5	5 - 6	2 - 6	> 0.05
Full cream milk	5	4 - 6	1 - 6	5	3 - 6	1 - 6	> 0.05
Yogurt	6	5 - 6	1 - 6	5	4 - 6	1 - 6	< 0.01*
Skimmed milk	6	5 - 6	1 - 6	6	5 - 6	2 - 6	> 0.05
Soy milk	6	5 - 6	1 - 6	5	4 - 6	2 - 6	< 0.01*
Mayonnaise	6	5 - 6	1 - 6	6	5 - 6	2 - 6	> 0.05
Snacks							
Packaging food	4	3 - 5	1 - 6	4	3 - 5	1 - 6	> 0.05
Frying food	4	3 - 5	1 - 6	5	4 - 6	1 - 6	< 0.01*
Sweet cake	5	4 - 6	1 - 6	5	4 - 6	2 - 6	> 0.05
Traditional cake	5	4 - 6	1 - 6	6	5 - 6	3 - 6	< 0.01*
Meatball	4	3 - 5	1 - 6	6	5 - 6	1 - 6	< 0.01*
Pudding	5	5 - 6	1 - 6	5	5 - 6	1 - 6	> 0.05
Chocolate	5	4 - 6	1 - 6	5	4 - 6	1 - 6	> 0.05
Rice cake	6	5 - 6	1 - 6	6	5 - 6	2 - 6	> 0.05
Mochi	6	6 - 6	1 - 6	6	5 - 6	3 - 6	> 0.05
Moon cake	6	6 - 6	1 - 6	6	5 - 6	4 - 6	> 0.05
Beverages							
Juices	4	3 - 5	1 - 6	5	4 - 6	2 - 6	< 0.01*
Softdrink	5	4 - 6	1 - 6	5	5 - 6	2 - 6	> 0.05
Tea	5	4 - 6	1 - 6	4	3 - 5	1 - 6	< 0.01*
Coffee	6	4 - 6	1 - 6	5	4 - 6	1 - 6	< 0.01*
Bubble tea	6	6 - 6	1 - 6	4	4 - 6	2 - 6	< 0.01*
Alcohol	6	6 - 6	4 - 6	6	6 - 6	4 - 6	> 0.05
Honey	6	5 - 6	1 - 6	6	5 - 6	1 - 6	> 0.05
Supplements	6	6 - 6	2 - 6	6	5 - 6	1 - 6	> 0.05

*Statistical analysis was using Wilcoxon Mann Whitney U-test with significant p-value set at < 0.05.

P-value between home country and abroad was 0.62.

FFQ code: 1 is for more than one times a day, 2 is for one times a day, 3 is for 4-6 times a week, 4 is for 1-3 times a week, 5 for 1-3 times a month, 6 is for never.

Table 2. Characteristic of level consumption according to gender in home country (Indonesia) and abroad (Taiwan) (n=497)

Level consumption	Home country (n=397)			Abroad (n=100)		
	Women (n=357)	Men (n=40)	p-value	Women (n=63)	Men (n=37)	p-value
	n (%)	n (%)		n (%)	n (%)	
Staple food (white rice)			0.99			0.22
High	313 (87.7)	36 (90)		47 (74.6)	33 (89.2)	
Moderate	40 (11.2)	4 (10)		13 (20.6)	3 (8.1)	

Level consumption	Home country (n=397)			Abroad (n=100)		
	Women (n=357)	Men (n=40)	p-value	Women (n=63)	Men (n=37)	p-value
	n (%)	n (%)		n (%)	n (%)	
Low	4 (1.1)	0		3 (4.8)	1 (2.7)	
Fast food (instant noodle)			0.35			0.01*
High	29 (8.1)	5 (12.5)		1 (1.6)	4 (10.8)	
Moderate	147 (41.2)	19 (47.5)		32 (50.8)	23 (62.2)	
Low	181 (50.7)	16 (40)		30 (47.6)	10 (27)	
Animal protein source (Egg)			0.07			0.7
High	81 (22.7)	15 (37.5)		12 (19)	6 (16.2)	Chi-s
Moderate	219 (61.3)	22 (55)		40 (63.5)	22 (59.5)	
Low	57 (16)	3 (7.5)		11 (17.5)	9 (24.3)	
Plant protein source (Tofu)			0.35			0.02*
High	133 (37.3)	20 (50)		13 (20.6)	3 (8.1)	
Plant protein source (Tofu)			0.35			0.02*
Moderate	204 (57.1)	18 (45)		34 (54)	30 (81.1)	
Low	20 (5.6)	2 (5)		16 (25.4)	4 (10.8)	
Vegetable (Mustard)			0.24			0.32
High	56 (15.7)	9 (22.5)		12 (19)	3 (8.1)	
Moderate	208 (58.3)	25 (62.5)		39 (62)	27 (73)	
Low	93 (26)	6 (15)		12 (19)	7 (18.9)	
Fruit (Banana)			0.99			0.58
High	41 (11.5)	4 (10)		2 (3.2)	3 (8.1)	
Moderate	120 (33.6)	14 (35)		31 (49.2)	16 (43.2)	
Low	196 (54.9)	22 (55)		30 (47.6)	18 (48.7)	
Dairy product (Full cream milk)			0.88			0.82
High	51 (14.2)	5 (12.5)		8 (12.7)	6 (16.2)	
Moderate	103 (28.9)	13 (32.5)		22 (34.9)	11 (29.7)	
Low	203 (56.9)	22 (55)		33 (52.4)	20 (54)	
Snack (Packaging food)			0.95			0.45
High	71 (19.9)	7 (17.5)		8 (12.7)	2 (5.4)	
Moderate	190 (53.2)	22 (55)		35 (55.6)	20 (54.1)	
Low	96 (26.9)	11 (27.5)		20 (31.7)	15 (40.5)	
Beverage (Tea)			0.005*			0.07
High	28 (7.8)	8 (20)		8 (12.7)	4 (10.8)	
Moderate	127 (355.7)	19 (47.5)		22 (34.9)	22 (59.5)	
Low	202 (56.6)	13 (32.5)		33 (52.4)	11 (29.7)	

p-value was from the Chi-Square test and Fisher's exact test.

*Significant p-value set at < 0.05

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