

AN ABSTRACT OF THE THESIS OF

Akiko Miura for the degree of Master of Science in Nutrition and Food Management presented on November 20, 1998. Title: The Food Habits of Vietnamese College Women at Oregon State University

Abstract approved: _____


Mary Kelsey

This study reports the food habits of Vietnamese college women in association with college life and their cultural background. Their food habits, food associated beliefs, and the influences on their food choices were examined.

Interviews, using semi-structured questionnaire, were conducted with 25 Vietnamese college women at Oregon State University. The questionnaire included general and particular food consumption, cooking/eating out practices, and food associated beliefs.

The busy schedules of the Vietnamese college students in college life greatly influenced their food choices. They preferred eating the same foods as before college, which were mainly Vietnamese foods. However, they also considered convenience for their food choices since they did not have enough time and/or skills to prepare and eat meals. Generally they kept eating Vietnamese foods, such as rice and Vietnamese flavored dishes; however, they increased eating easy to prepare food, such as pasta, sandwiches, and fast foods in college life, which were not often eaten with their families

before college. All of them had rice cookers, chopsticks, and fish sauce, that are substantial for a Vietnamese diet.

Their preference of eating Vietnamese foods led to their unique meal patterns. They tended to adjust mealtime in order to eat Vietnamese foods at home and avoided eating meals on campus. Instead, the high frequency of snack consumption was reported.

They had strong beliefs that Vietnamese foods were healthy. The Vietnamese foods, which consisted of rice, a wide variety of vegetables, and small amount of meat, tend to be low in fat. It led to avoidance of commercialized low-fat and low-calorie foods. The Vietnamese diet was also believed to be a balanced diet. This was associated with the small credibility of a vegetarian diet in spite of the fact that they considered vegetables played an important role in their diets. Generally they were comfortable to keep eating Vietnamese foods because of their health concerns, as well as their taste preferences.

In college life, they consumed some foods that were not Vietnamese and not often eaten with their families before. However, it could be temporary mainly because of their busy schedules. They preferred to eat the same foods as before, if their schedule allowed, and they considered that Vietnamese foods should be eaten as their real meals.

**The Food Habits of Vietnamese College Women
at Oregon State University**

by

Akiko Miura

A THESIS

submitted to

Oregon State University

in partial fulfillment of
the requirements for the
degree of

Master of Science

Presented November 20, 1998
Commencement June 1999

Master of Science thesis of Akiko Miura presented on November 20, 1998

APPROVED:

Major professor, representing Nutrition and Food Management

Chair of Department of Nutrition and Food Management

Dean of Graduate School

I understand that my thesis will become part of the permanent collection of Oregon State University libraries. My signature below authorizes release of my thesis to any reader upon request.

Akiko Miura, Author

ACKNOWLEDGMENT

First of all, I wish to acknowledge and thank my thesis adviser, Mary Kelsey for her support and guidance through this project. I appreciate her warm encouragement, which supported me throughout my graduate career. I also wish to thank my committee members Carolyn Raab, Nancy Rosenberger, and Rebecca Donatelle for their assistance.

I wish to specially thank my parents for their constant love and encouragement. I am grateful for the opportunity of studying at Oregon State University, which would not be possible without their support, both emotionally and financially.

My final thanks goes to my friends, Kasidit Chansawat, Chanokporn Phaosiri, and Pallop Huabsomboon, who have supported me through every part of my life as a graduate student and have given me a life-long influence. I also sincerely thank Roger Chen who has supported me constantly with his warmth and strength.

TABLE OF CONTENTS

	<u>Page</u>
INTRODUCTION	1
LITERATURE REVIEW	3
Vietnamese Food Habits	3
The Changes in Food Habits in the United States	4
The Food Habits of College Students	5
Influence of Cultural Factor on Food Choice of Asian College Students	8
METHODS	10
Development of the Questionnaire	10
Selection of the Subjects	11
Interview	12
Data interpretation	12
RESULTS	13
Demographic Description of the Subjects	13
Present Eating Habits	16
Food Consumption on a Day	16
General Food Consumption	19
Breakfast Food Consumption	22
Beverage Consumption	23
Snack Food Consumption	24
Convenient Food Consumption	26
Diet Food Consumption	27
Cooking Practices	29

TABLE OF CONTENTS, CONTINUED

	<u>Page</u>
Eating Out Practices	31
Fast Food Consumption	31
Restaurant Food Consumption	32
Food Preference	33
Food Beliefs	34
Healthy Food	34
Vegetarian Diet	36
Vitamin/ Mineral Supplementation	36
The Priority for Food Selection	37
The Difference in Meal Practices	38
DISCUSSION	40
Food Consumption	40
Cereal Grains	40
Vegetables and Fruits	41
Meat, Poultry, and Fish	42
Dairy Products	42
Beverages	43
Snack Foods	44
Meal Pattern	44
Food Beliefs	47
Influences on Food Choices	48
Taste	49
Health	49
Convenience	50
Price	50
Calorie Contents	51
Childhood Eating Habits/ Eating Habits of Friends	52

TABLE OF CONTENTS, CONTINUED

	<u>Page</u>
CONCLUSIONS	53
BIBLIOGRAPHY	56
APPENDIX Food Habit Questionnaire	59

LIST OF TABLES

<u>Table</u>	<u>Page</u>
1. The Age Distribution of the Subjects	14
2. The Distribution of Length of the Stay of the Subjects in the United States	14
3. The BMI Distribution of the Subjects	15
4. The Means of Age, Length of the Stay, and BMI of the Subjects	15
5. The Foods the Subjects Consumed on a Day	18
6. The Foods the Subjects Often Consumed	21
7. The Foods the Subjects Often Consumed for their Breakfast	22
8. The Beverages the Subjects Often Consumed at their Main Meals	23
9. The Foods the Subjects Often Consumed for their Snacks	25
10. The Prepared Frozen Foods the Subjects Consumed	26
11. The Canned Foods the Subjects Consumed	27
12. The Foods the Subjects Chose for Low-fat	28
13. The Seasonings the Subjects Had in their Kitchen	30
14. The Kitchen Utensils the Subjects Had in their Kitchen	30
15. The Foods the Subjects Considered as Healthy and Unhealthy	35
16. The Important Influences on Choosing Food.....	37

The Food Habits of Vietnamese College Women at Oregon State University

INTRODUCTION

The diets and foods that people prefer and select are the outcome of a complex mixture of availability and cultural, social, and economic factors. Everyone has a cultural identity, which is reflected in the choice of foods. Food preferences, availability, quality, attitudes and beliefs, cultural background, and ecological factors influence dietary change (Kuhnlein 1989).

Since 1975, hundreds of thousands of Vietnamese refugees have resettled in the United States. The influx of Vietnamese continues today. Having resided in the United States for only a few years, they have made apparent changes in their food habits. Each individual accepted new foods differently, but a few generalizations were made regarding food choices.

While they continued to eat some Vietnamese foods in the United States, they more frequently ate foods characteristic of the American diet (Crane and Green 1980). Furthermore, children tend to accept new foods easier than their parents and the elderly. The children adopted American diets through school lunch programs or their friends' influences. The children were likely to prefer American foods, and more changes were anticipated in food preferences and food habits in the younger age groups, as they grew older (Story and Harris 1988).

The food habits of general college students have been studied by many researchers. College students have strong interests in health and/or weight gain (Hernon

et al. 1986), which associates their dietary practice in the frequent use of high intensity sweeteners, the popularity of vegetarian eating habits (Walker 1995), and the use of dietary supplements (Eldridge and Sheehan 1994). They also pursued convenience and ease in cooking and/or eating (Betts et al. 1995), and showed a high rate of eating out compared to the other population (Hertzler and Frary 1992).

Among studies about food habits of Vietnamese immigrants, there was no study found concerning these of college students. The large number of Vietnamese children in first generation may be in college, assuming from the studies examining food habits of Vietnamese children in secondary school several years ago. College life is usually the first time for most of the students to live alone and have the main responsibility for meal preparation. Therefore, the examination of their food habits can reveal another aspect of the cultural influence on the dietary life of Vietnamese immigrants. In this study, the food habits of Vietnamese college women were described in association with their cultural background. The objectives of the study are:

1. the description of their food habits (food consumption, food preference, and cooking/eating out practices)
2. the revealing factors that influence their food habits

LITERATURE REVIEW

Vietnamese Food Habits

The basic foods in Vietnam are rice accompanied with vegetables, eggs, and small amounts of meat and fish. Vietnamese eat a wide variety of vegetables and fruits that are usually eaten fresh and sometimes pickled with salt. Poultry and eggs are favored, and pork and organ meats are primarily used. Beef is sold mostly in the cities and is very expensive. Fish and seafood are served almost everyday, and fish sauce (*nuoc mam*) is a principle ingredient in almost all Vietnamese dishes. Tea is served at almost every meal, and carbonated beverages are sometimes offered. Milk and other dairy products are not so familiar except in the cities (Tong 1991).

The Vietnamese have three meals a day with some snacking on fruits or clear soup. For breakfast, “*pho*,” which is beef noodle soup with rice or egg noodle, thin slices of beef, chicken, or pork, bean sprouts and fresh herbs, is commonly eaten as well as rice porridge, boiled eggs, or bread. For lunch and dinner, rice, fish or meat, vegetable dishes, tea or coffee are eaten. These meals are usually prepared with at least three different selections: a salty dish, a stir-fried item, and a soup. Both lunch and dinner are similar in food content with smaller portions for dinner (Kittler and Sucher 1997).

Though Vietnamese cooking is similar to that of Chinese, it uses little fat or oil for frying. While the Vietnamese enjoy many fried foods and stir-fried dishes, they have preference for lean meats, fatless soups, and a dislike for foods that taste greasy. Most

dishes are steamed or boiled or very quickly stir-fried, and most foods that are fatty are skimmed, trimmed, or handled to remove the fat (Barer-Stein 1979).

The Changes in Food Habits in the United States

There are several reports that Vietnamese immigrants in the United State have gone through changes in their dietary life, concerning family (Crane and Green 1980, Hung, S. et al.1995), elderly (Tong 1991), and adolescents (Nguyen et al. 1983, Story and Harris 1988). Having resided in the United States for only a few years, they made apparent changes in their food habits. Each individual accepted new foods differently, but a few generalizations were made regarding food choices.

While they continued to eat some of the same foods eaten in Vietnam, such as rice, fresh vegetables, fish sauce, and tea in the United States, they more frequently ate foods characteristic of the American diet, such as milk, beef, butter, eggs, candy, and soft drinks. Instead, fish consumption was obviously decreased. Since the respondents still showed strong preferences for the Vietnamese diet, it is suggested that several factors could influence the change in food habits in addition to food preference such as income level, length of time in the United States, media exposure, food availability, and the relative price of food (Crane and Green 1980). Furthermore, children tend to accept new foods easier than their parents and the elderly people.

After 11 to 15 years in the United States, the elderly kept living a similar life to that in Vietnam. They mostly ate *pho* or rice at breakfast, while only some (one fifth of the elderly in the study) adopted an American style breakfast: cereals with milk, toast and

butter, or fried eggs. The majority of the elderly consumed rice at both lunch and dinner, and usually did not eat snacks. Most of the elderly (87%) prepared the Vietnamese type of meals daily, while the remaining elderly occasionally ate lunches and suppers at the local senior citizens center at reduced prices to cope with the economic and living conditions (Tong 1991).

On the contrary, even for less than a five-year-stay, Vietnamese high school students tended to adopt American diets through school lunch programs while maintaining a preference for Vietnamese foods (Story and Harris 1988). The Vietnamese children consumed fresh milk daily or almost daily, and pizza and hot dogs weekly, which are offered in the school lunch program. They did not dislike such American foods, which the elderly tended not to accept.

Nutritionists have been concerned about the increase in high-fat or less nutritious food consumption among these acceptances. The children were likely to prefer American foods, and more changes were anticipated in food preferences and food habits in the younger age groups as they grew older (Nguyen et al. 1983).

The Food Habits of College Students

The food habits of college students have been studied as a unique population, which is in transition from being controlled by parents to controlling their own lives and developing their own food habits (Eckstein 1980). They have a greater risk of developing poor eating habits, and factors that influence the food choice behavior have been examined in several studies. (Bailey and Goldberg 1989, Betts et al. 1994, Betts et al.

1997, Koszewski and Kuo 1996, Hernon, J. et al. 1986, Hertzler and Frary 1989, Hertzler and Frary 1992, and Sneed and Holdt 1991).

The college students, especially women, are reported to have weight concerns, which influence meal patterns and frequency (Bailey and Goldberg 1989). Bailey and Goldberg categorized the eating patterns of the college students into four patterns, which explained meal frequency variance in association with weight concerns. In addition to “regular eaters”, who ate three meals at certain times and were not so concerned about their weight, the college students were categorized as “morning eaters”, “concerned eaters”, and “lunch avoiders.” The morning eaters had high frequencies for breakfast and morning snacks and low frequency for dinner and evening snacks. The concerned eaters, who were concerned about being overweight, had high frequency of breakfast and dinner and reduced frequency of lunch. The lunch avoiders, who considered themselves underweight, reported moderate frequency for breakfast, evening snacks, and dinner with low frequency for lunch and afternoon snacks.

In addition, the positive linear relationship was found between the levels of weight satisfaction and frequency of meals and diet adequacy (Koszewski and Kuo 1996). Most women were dissatisfied with their weight and restricted their food intake by limiting the number of meals.

The convenience, price, and health concerns were reported to have great impacts on food choices of students and other young adults (Betts et al. 1994). The impact of time on food choices was the most influential factor for young adults, especially students, which required convenience in their food choice. Their food choices depended on their schedules and time available. Most of the students discussed the difficulty in balancing

their school schedules plus leisure activity with finding time to eat. Because of time restrictions, microwavable prepared food, or obtaining food from a fast-food restaurant was often mentioned as necessary by participants. Price of food was also an important factor for the students, and health concerns, which may induce the interests in fat and cholesterol contents of foods, was an often mentioned factor in the study. In a later study, which examined the factors influencing food choices of young adults, college students were reported to consider convenience the most, compared to young adults (Betts et al. 1997). Between students and non-students, there were generally not many differences except the convenience consideration for students. Instead, the importance of nutrients disappeared from the most important factors. College students, compared to the other population, were found to have a high rate of eating out (Hertzler and Frary 1992). The students ate out an average of three times a week, especially at fast food restaurants (Sneed 1991).

On the contrary, college students were reported to make more healthful choices than non-students of the same age (Georgiou et al. 1997). The female college students were less often overweight than female non-students, and ate more grain foods high in dietary fiber, more fruits and dark-green vegetables. The college students were also reported to have higher interests in vegetarian eating habits (Walker 1995) and the use of dietary supplements (Eldridge and Sheehan 1994).

College students, who were concerned about the healthful food choices, might practice the ways which make a diet lower in fat. There were four ways suggested to do this: exclusion, replacement, substitution, and modification. Exclusion was leaving out certain classes of food items or preparation techniques, such as not eating meat, not frying

potatoes, or not seasoning cooked vegetables with butter. Replacement described changes in diet, for example, eating yogurt-based cream soups or fresh fruits for dessert. Apart from the replacement, substitution described the pattern of choosing their specially manufactured low-fat products, such as low-fat cream or low-fat mayonnaise instead of their high-fat counterparts. Modification described altering commonly available foods to be lower in fat, for example, removing skin from chicken. Substitution was reported to be a popular and easy way to make low-fat diets (Kristal et al. 1990).

Influence of Cultural Factor on Food Choice of Asian College Students

Socio-cultural values influence the eating and dieting behaviors in association with body image of each culture. It influences food choice of college students, since students in the United States tend to have high concern about their weight as described above. It had been reported that when people of different racial groups adopt the Caucasian norms of thinness as the ideal, a greater degree of disordered eating and body dissatisfaction is observed (Pate et al. 1992).

In the study of the comparison of the eating behaviors and attitudes in African-American, Asian-American, and Caucasian college women, cultural factors were suggested to influence weight, eating behaviors and attitudes, and body dissatisfaction (Akan and Grilo 1995). Compared to Caucasian students, Asian-Americans showed lesser levels of concerns in eating and dieting practices and body image. Within the racial group, a consistent pattern was seen.

This pattern is consistent with the study examining dieting behavior and food intake of Asian women attending a university in the United States (Tsai et al. 1998). It showed that the restrained eating of the Asian women occurred as about half as often with the United States' women, and that the restrained group consumed fewer high-fat foods than did the unrestrained group both in the US and Asian college women.

These studies suggest that the body image of each culture influences the food habits of college students.

METHODS

Development of the Questionnaire

A questionnaire designed to examine food habits of Vietnamese college students was developed. A copy of the questionnaire is found in the appendix. The questionnaire consists of the semi-structured format, containing qualitative and quantitative aspects. Because of the limitation of small number of subject and characteristics of research, qualitative research was appropriate (Chapman and Maclean 1990). However, within the limitation, to maximize use of the data, quantitative methods were introduced in some of the questions, such as measuring influences of food choices (Stewart and Tinsley 1995). Some questions were taken from the questionnaire of previous research, which examined food habits of Vietnamese women in Oregon, who had school aged children (Kelsey 1992).

The first section of the questionnaire contains the question about several types of food consumption. It asked the subjects to name foods and frequencies of their consumption, such as often eaten foods, low-fat foods, and convenient foods. Associated with those questions, 24 hour recall food consumption was followed in a later section, asking the subjects to name the food that they consumed for each meal; breakfast, lunch, and dinner on a weekday, and breakfast on the next day. It introduced the examples of their general food consumption, associated with their often eaten food consumption. The second section of the questionnaire asked their food associated beliefs. They were concerned about their health and weight interests, and followed detailed interviews if it

was appropriate. The third section of the questionnaire was asking the influences on their food choices in college life, followed by open-ended question about the changes in their food habits in college life, compared to before college. The demographic characteristics, such as their age, length of stay, and their height and weight, were asked.

Three Vietnamese college women were interviewed to enhance the development of the questionnaire. Prior to pilot testing, the questionnaire was reviewed by major professor Mary Kelsey, co-major professor Carolyn Raab, and minor professor Nancy Rosenberger. The questionnaire, including the informed consent, was approved for human subjects' usage by the University Institutional Review Board at Oregon State University.

Selection of the Subjects

Names of Vietnamese women at Oregon State University, basically who came to the United States as a first generation of immigrants, were acquired through a student association at Oregon State University or through personal contacts. Women were chosen because they were assumed to be more involved in meal preparation than men. Thirty-three names were acquired through the research period, and thirty women agreed to participate in the interviews. Most of them were from the Portland area, where previous research was conducted by Kelsey (1992).

Interview

Twenty- to 30-minute interviews were conducted by the author between March and June in 1998, using a semi-structured questionnaire (appendix). They were conducted in public places, such as student lounge or food court on campus. The questions were open-ended and interviews were tape-recorded and transcribed verbatim.

Data interpretation

The responses in open-ended questions were interpreted by the author, combined with the responses in other sections, if it was appropriate. The responses between those who were born in Vietnam and in the United States were not distinguished and were combined for data interpretation.

RESULTS

Demographic Description of the Subjects

Thirty female Vietnamese students at Oregon State University were interviewed. The data of two students, who lived in dormitories, and three students, who lived with their parents, were excluded, and 25 of them were qualified to be included in terms of their living status (living in an apartment without parents).

The identification of the subjects, whose data was used, is shown in tables 1, 2, and 3. The mean age of the subjects was 20.9 with a range between 19 and 28. All but one were undergraduate students. The mean length of stay in the United States of the subjects was 14.5 with a range between 6 and 22 years. Body mass index (BMI), which indicates the ideal body composition, was calculated by dividing weight by the square of height. The mean BMI of the subjects was 20.3 with a range between 15.7 and 29.1.

Among the subjects, eight were born in the United States. Their length of stay in the United States was between 18 and 22 years. All of them had stayed with their Vietnamese parents since they were born. The means of the age, the length of stay, and BMI for each of those who were born in Vietnam and in the United States are shown in table 4. The answers of those who were born in the United States were not distinguished from those who emigrated from Vietnam, so the answers for both were combined unless it was mentioned.

At college, twenty subjects (80%) lived with Vietnamese students, including eight of them (40%) living with their brothers or sisters. Three (12%) lived with Asian

students other than Vietnamese, two (8%) lived alone, and one (4%) lived with an American.

Table 1. The Age Distribution of the Subjects

Age in years	No. of respondents	Percent of subjects
18	1	4
19	6	24
20	5	20
21	5	20
22	3	12
23	4	16
28	1	4

Table 2. The Distribution of Length of the Stay of the Subjects in the United States

Length in years	No. of respondents	Percent of subjects
6	4	16
7	2	8
8	1	4
10	2	8
14	1	4
15	1	4
16	1	4
17	2	8
18	3	12
19	2	8
20	3	12
21	2	8
22	1	4

Table 3. The BMI Distribution of the Subjects

BMI	No. of respondents	Percent of subjects
15.0 - 15.9	1	4
16.0 - 16.9	1	4
17.0 - 17.9	3	12
18.0 - 18.9	3	12
19.0 - 19.9	3	12
20.0 - 20.9	2	8
21.0 - 21.9	2	8
22.0 - 22.9	2	8
23.0 - 23.9	3	12
25.0 - 25.9	1	4
29.0 - 19.9	1	4

Table 4. The Means of Age, Length of Stay, and BMI of the Subjects

Variables	All subjects	Subjects who were born in Vietnam (N=17)	Subjects who were born in the US (N=8)
Age	20.9 \pm 2.1	21.2 \pm 2.3	20.1 \pm 1.2
Length of stay	14.5 \pm 5.9	11.9 \pm 5.2	20.3 \pm 1.4
BMI	20.3 \pm 3.0	19.6 \pm 2.1	21.8 \pm 1.4

Present Eating Habits

First, the subjects' eating practice from their food consumption on a weekday is introduced, and later, the detailed practices and their food beliefs are introduced in each section.

Food Consumption on a Day

The foods that the subjects ate on a weekday are shown in table 3. The majority (48%) did not eat anything for breakfast on that day. Those who ate something for breakfast liked to have something easy and fast to eat, such as cereal or bread. None ate the Vietnamese traditional breakfast, *pho*, and even rice was not eaten for breakfast on that day.

Some subjects ate something before going to school as early lunch or late breakfast. Therefore, even though many subjects did not usually eat anything for breakfast, they might eat brunch instead, depending on their class schedule.

Many subjects had rice and stir-fried meat and vegetables (32%), and some ate pasta or sandwiches for lunch (8% each). Those who had rice might eat meals at their apartments before or between their classes, instead of eating meals on campus. Quite a few subjects did not eat specifically for lunch (48%). They might eat a lot for their late breakfast and eat just snacks for lunch in school.

The majority ate rice and side dishes for dinner (56%). Rice is the staple food for Vietnamese, and it used to be eaten everyday at home with their families. Even though the subjects were too busy to prepare meals, many of them at least still cook rice. A

subject stated that she could eat rice alone with soy sauce or chili. However, most of them also mentioned that they increased eating something instead of rice, such as pasta or sandwiches, which were easy and fast to prepare and also inexpensive, even for dinner. All subjects ate dinner at home, even though the food could be bought.

The majority, 64% of subjects stated that there were differences between weekdays and weekends. On weekends, meals tended to be bigger and more varied because the subjects had more time to prepare food. The food on weekends was “more special”, such as curry or noodle soup (*pho*). They had time to “sit and eat” and “be relaxed” during weekends. A subject stated that she increased the amount of the snacks as well as meals. She might “eat something all day.” The mealtime could be later than that on weekdays, and meals might be eaten with friends. Many subjects who were from the Portland area might go back home during weekends and eat “more varied Vietnamese dishes” with family.

Table 5. The Foods the Subjects Consumed on a Day

Meal type	Food	No. of respondents	Percent of subjects
Breakfast	nothing	12	48
	cereal	9	36
	milk	7	28
	bagel, bread	5	20
	yogurt	2	8
	tea	2	8
	fruits	2	8
	noodle soup	1	4
	soup	1	4
	orange juice	1	4
	cracker	1	4
Lunch	nothing	12	48
	rice, fried rice	8	32
	stir-fry	7	28
	pasta	2	8
	sandwiches	2	8
	noodles	1	4
	curry	1	4
	egg	1	4
	fresh vegetable	1	4
	baked vegetable	1	4
	fresh fruits	1	4
	orange juice	1	4
Dinner	rice, fried rice	19	76
	noodle soup	4	16
	fresh vegetables	3	12
	noodles	2	8
	pasta	2	8
	egg rolls	2	8
	stir-fry	2	8
	chicken	2	8
	pork	2	8
	fruits	2	8
	canned tuna	1	4
	bread	1	4
	sandwiches	1	4
	burrito	1	4

General Food Consumption

The foods that subjects often ate are shown in table 6. It is determined that food for breakfast has some different characteristics from food for lunch and dinner for the subjects, and it is specifically presented in the next section.

They often ate rice (either steamed or fried), meat (beef, pork, and chicken), vegetables (either fresh or cooked), noodle soup (*pho*), noodles, stir-fry, seafood (fish and shrimp), fruits, eggs, pasta, bread, and sandwiches. The answers were based on the food they often ate, and each person named three foods average. All subjects ate rice, which is staple food for Vietnamese. Many subjects (36%) often ate meat, which was usually cut into small pieces and stir-fried with vegetables. Thirty-two percent of subjects often ate vegetables. Some of them mentioned that vegetables were very important for Vietnamese dishes, which contained various vegetables either fresh or cooked. Twenty-eight percent of them specifically differentiated Vietnamese noodle soup (*pho*) from noodles as an often eaten food. *Pho* is based on meat broth soup, consisting of rice or egg noodles covered with pieces of meat, various vegetables, bean sprouts, and herbs. It is originally eaten for breakfast in Vietnam, but can be eaten for light meals. None of the subjects ate *pho* for breakfast, but some of them still often ate *pho* for their other meals. They usually used soup stock cubes, and it could be an easy meal to prepare.

Most of the subjects (88%) often ate the same foods that were previously eaten with their families. All subjects used to eat Vietnamese food at home with their families everyday. Therefore, those who often ate the same foods as before kept eating more Vietnamese food than American food. Eighteen percent of them even ate Vietnamese

food everyday. However, some of the subjects mentioned that they ate “Asian food,” which was not exactly Vietnamese. They ate rice and some dishes flavored with Asian seasoning, which were compatible with rice.

Even those who mostly ate Vietnamese food in college life did have some foods that they did not eat as often or not at all. Previously they ate “more varied” Vietnamese foods, which they did not know how to cook or which require much time to prepare, such as “elaborate Vietnamese dishes,” “deep-fried foods,” and “a special Vietnamese noodle dish.” Also, they did not eat fish and seafood when they were alone as often as when with their families. Some subjects mentioned that they did not eat “everyday rice” in college life.

Those who did not often eat the same foods as before still wanted to eat the same foods; however, they tended to consume some American foods, which were easy to prepare, such as pasta, sandwiches, or fast food.

Table 6. The Foods the Subjects Often Consumed

Food	No. of respondents	Percent of subjects
rice	16	64
noodle soup (pho)	7	28
noodles	6	24
stir-fry	5	20
meat		
chicken	9	36
beef	5	20
pork	4	16
vegetables	8	32
seafood	3	12
bread	1	4
sandwiches	1	4
pasta	1	4
curry	1	4
egg	1	4
fruits	1	4

Breakfast Food Consumption

The foods the subjects often ate for breakfast are shown in table 7. Each person could choose as many answers as wanted. The response receiving the largest number was that they ate nothing (40%). They did not have enough time to eat, and depending on their class schedules, they might eat brunch instead. Those who ate breakfast usually ate bread or cereal as easy-to-prepare foods, and none ate the traditional Vietnamese breakfast *pho*. As for *pho*, one subject mentioned that Vietnamese do not usually eat *pho* as early breakfast as tradition. It is usually consumed in the late morning (between 10:00am to 1:00pm), so it can be considered as brunch or lunch among those who live in the United States. Two subjects usually ate rice for breakfast; however, neither of them cooked the rice in the morning. The rice was usually left over from a previous meal, and if they did not have rice in the morning, they ate cereal or bread.

Table 7. The Foods the Subjects Often Consumed for their Breakfast

Food	No. of respondents	Percent of subjects
nothing	10	40
bread, bagel	6	24
cereal	8	32
milk	3	12
leftover rice	2	8
orange juice	2	8
yogurt	1	4
fruits	1	4
tea	1	4

Beverage Consumption

The beverages the subjects often drank for their main meals are shown in table 8. The subjects usually did not consume drinks for meal. At the main meal, many of them just drank tap water (60%). Among them, 66% filtered or boiled the water before drinking. They might sometimes drink fruit juice (28%), milk (12%), pop (8%), or tea or coffee (8%). For snacks, they also mostly drank water (44%), followed by fruit juices (24%) and carbonated beverages (16%) (table 7).

Table 8. The Beverages the Subjects Often Consumed at their Main Meals

Beverages	No. of respondents	Percent of subjects
water	15	60
fruits juice	7	28
milk	3	12
carbonated beverages	2	8
tea, coffee	2	8

Snack Food Consumption

Most subjects had snacks once or more than once a day (72%); 48% eat snacks more than once a day. Among the rest of subjects, 12% had snacks at least once a week, and 16% hardly had snacks (at most less than once a week). Most of them (76%) ate snacks between lunch and dinner, which was associated with their class schedules. Instead of “sitting to eat meals,” just having snacks in school was common among subjects. Eight percent often ate snacks after dinner during studying, and 16% ate snacks whenever they felt hungry. A subject expressed her snack habits as eating “all the time.” She always had snacks in her backpack and ate whenever she wanted.

The foods they often ate for snacks are shown in table 9. Many subjects stated that they ate any snacks that were considered to be American snacks such as chips, cookies, candies, or crackers. Fruits were also popular among the subjects. However, one subject commented that there was less variety of fruits in the United States, and that she was tired of eating only “apples and oranges.” Some subjects kept rice all the time and ate it as a snack whenever they felt hungry. The rice could be eaten alone just with soy sauce or chili. Having rice or bagels for snacks might be also associated with their class schedule.

The mealtime for the subjects was much influenced by class schedules. Depending on their schedules, they might eat something just before going to school or after coming back from school, and it could be a light meal rather than snacks for the subjects. Some subjects did consider eating something for a light meal at a different time from the usual mealtime as snacks. Therefore, high frequency of snack habits among the

subjects did not necessarily mean they ate “sweets” or “junk food” all the time. Also many subjects (48%) wanted to avoid eating meals on campus and have snacks because they had narrow choices for meals on campus, which consisted mostly fast food places, in addition to money and time reasons. This also induced frequent consumption of the snacks in spite of the fact that having snacks is not so common for Vietnamese.

Table 9. The Foods the Subjects Often Consumed for their Snacks

Food	No. of respondents	Percent of subjects
chips	11	44
fruits	9	36
cookies	6	24
candy, chocolate	6	24
fruits juice	6	24
cracker, pretzel	5	20
carbonated beverages	4	16
vegetables	2	8
bagel	2	8
rice	1	4

Convenient Food Consumption

The majority did not eat any prepared frozen food (44%). Thirty-two percent and 16% of the subjects ate them often and sometimes, respectively. The prepared frozen foods the subjects ate are shown in table 10. None of them ate those foods for everyday meals. Those who went back home during weekends might have their original prepared frozen meal. They brought the foods their mothers cooked and froze them for the weekdays.

Compared with the prepared frozen foods, canned foods were more accepted among the subjects. Seventy-six percent of the subjects used canned foods, while 24% did not use any canned food. The canned foods the subjects used are shown in table 11. Canned vegetables and fruits were used commonly among the subjects. Some of the subjects used canned soup or sauce.

Table 10. The Prepared Frozen Foods the Subjects Consumed

Food	No. of respondents	Percent of subjects
pizza	6	24
pasta, lasagna	2	8
prepared meat	2	8
hamburger, corndog	2	8
fried chicken	1	4
egg roll	1	4
pea & carrot	1	4
green beans	1	4

Table 11. The Canned Foods the Subjects Consumed

Food	No. of respondents	Percent of subjects
corn	12	48
green beans	8	32
fruits	7	28
soup	6	24
tuna fish	5	20
pasta sauce	3	12
gravy	1	4
Chinese vegetables	1	4
Vietnamese desserts	1	4

Diet Food Consumption

Eighty-four percent of the subjects did not drink diet drinks at all. Twelve percent sometimes drank them, and only one subject always chose to drink diet drinks.

Fifty-two percent of the subjects did not eat any low-fat or low-calorie foods. Twelve percent and 24% ate them sometimes and always, respectively. The foods they chose for low fat or low-calorie are shown in table 12. Even those who always ate low-fat foods might just consume milk or yogurt. Generally all but one seemed not to pay much attention to the low fat claims. Among those who consumed low-fat food, two subjects stated that they did not “look for the low-fat food.” Three subjects mentioned that they might happen to eat those foods because they did not pay any attention to the low fat claims.

The diets for the most of the subjects might be low fat, since they tended to consume rice, vegetables, and fruits, with small amounts of meats. One subject did try to eat low-fat food like rice, vegetables, and fruits, instead of high calorie food, but not commercialized “low-fat claimed” foods. Another subject recognized her diet as a low-fat diet because she did not eat much meat, any cheese, or any milk, and she did not know much about low-fat claimed foods.

Table 12. The Foods the Subjects Chose for Low-fat

Food	No. of respondents	Percent of subjects
milk	7	28
yogurt	7	28
dessert (pudding)	2	8
cheese	1	4
dressing	1	4

Cooking Practices

The preference for Vietnamese foods led more frequent occasion of cooking Vietnamese foods than cooking American foods even among those who ate more American foods. All but two subjects cooked Vietnamese foods more than American foods. They tended to eat American foods away from home and cooked more Vietnamese foods at home. Some of them mentioned that they ate Vietnamese foods as meals and American foods as light meals including snacks.

The seasonings the subjects had in their kitchens are shown in table 13. All subjects had fish sauce, which is essential for Vietnamese dishes. Even two Vietnamese students living in dormitories and eating at dining halls kept fish sauce and chopsticks in their rooms. In addition to fish sauce, most of them had oyster sauce (84%), hoisin sauce (80%), chilies (72%), and herbs (64%). Those seasonings were commonly used for Vietnamese dishes, and might be used to make stir-fry type of dishes by the subjects. According to some subjects, the foods they cooked might not be authentic Vietnamese foods, but they had typical Vietnamese flavor and could be an accompaniment to rice.

The kitchen utensils the subjects had in their kitchen are listed in table 14. All of the subjects had chopsticks and rice cookers. Other than these pieces of equipment, not many subjects owned specific equipment for Vietnamese cooking, such as bamboo steamers or mortars and pestles. They were necessary for some Vietnamese dishes, but the subjects did not usually prepare such "elaborate dishes," which took time to cook.

Table 13. The Seasonings the Subjects Had in their Kitchen

Seasoning	No. of respondents	Percent of subjects
fish sauce	25	100
pepper	25	100
oyster sauce	21	84
hoisin sauce	20	80
chilis	18	72
flour	18	72
herbs	16	64
coconut milk	10	40
curry spices	9	36
five spice powder	9	36
soy sauce	9	36
sesame oil	9	36
sugar cane	6	24
shrimp paste	5	20

Table 14. The Kitchen Utensils the Subjects Had in their Kitchen

Utensils	No. of respondents	Percent of subjects
chopsticks	25	100
rice cooker	25	100
graters	8	32
mortar & pestle	6	24
mini-chop	4	16
wok	4	16
steamer	1	4

Eating Out Practices

Fast Food Consumption

The majority ate at fast food restaurants less than once a week (48%). Among those who ate at fast food restaurants more than once a week, 28%, 12%, and 12% ate once a week, two to three times a week, and four to five times a week, respectively. Depending on the class schedules, some subjects ate lunch at fast food restaurants on campus. All of those who ate fast food four to five times a week stated that they “had to eat something” on campus for lunch on weekdays. The major reason for eating fast food was that it was “quick to eat and cheap.”

Those who answered eating less than once a week avoided eating on campus. The fast food restaurants are popular among students, and one of the biggest reasons is that they are inexpensive. However, some of the subjects did not like eating American or Mexican fast foods, such as hamburgers or tacos. There is no Vietnamese fast food restaurant on or close to the campus. If the subjects wanted to eat Vietnamese food out, they had to eat at a conventional restaurant, which is more expensive and students might not be able to afford to eat there everyday. Also, the subjects were too busy to “sit and eat” at restaurants. Many subjects (48%) did not eat anything for specific meals on campus, which resulted in frequent snack consumption.

The fast food restaurants where the subjects ate were MacDonald’s (44%), Burger King (40%), Panda Express (20%), Tacobell (20%), and Pizza Hut (8%). Those who ate at fast food restaurants on campus did not seem to prefer certain types of fast foods

among the three types of fast food restaurants on campus (Burger King, Tacobell, and Panda Express).

There were two opposite tendencies toward fast food consumption in college life among the subjects. While the majority increased the consumption of fast food in college life, some subjects decreased fast food consumption. Those who decreased eating fast food stated that they used to eat at fast food restaurants with their friends for special occasions besides eating meals at home. However, they did not feel like eating these as their meals instead of eating “a real meal,” which meant rice for them. They further stated that the fast food was more like an entertainment meal, while eating rice at home was usual.

One subject tried not to eat fast foods because she had to take care of her health by herself for study, and always eating at fast food restaurants made her feel she was careless about her health.

Restaurant Food Consumption

Different from eating at fast food restaurants, eating at a conventional restaurant was more entertaining, and the majority ate at restaurants less than once a month (40%). Among those who ate at restaurants more than once a month, 16%, 16%, and 28% ate there less than once a week, once a week, and two to three times a week, respectively.

The types of restaurants where they ate were Chinese (48%), Vietnamese (40%), American (24%), Italian (16%), Thai (8%) and Japanese and Korean (4%). Some of them categorized the restaurant where they ate as “Asian restaurants.” Because of narrow

choices in town, they could not be choosy about eating at any restaurants that offer dishes accompanied by rice (Vietnamese, Chinese, Thai, Korean and Japanese). However, the subjects generally preferred eating Chinese next to Vietnamese. Most of them who ate at Vietnamese restaurants mentioned that they normally ate in Portland. Those who came from the Portland area might often go back home during weekends. One of the reasons for frequently going back was to eat “good Vietnamese food” with family or friends at restaurants, as well as eating at home.

Food Preference

All subjects preferred eating Vietnamese foods to American foods. They did not present any specific reasons why. Some subjects stated that Vietnamese food was more flavorful.

However, many subjects did not want to pay more for Vietnamese food (32%). Actually, most of the subjects stated that they did not have to pay more for cooking Vietnamese dishes. Most of the materials they used for Vietnamese dishes could be obtained at local supermarkets, where they were sold at reasonable prices. Even the foods that could be sold only at Asian markets were not expensive. Therefore, the subjects did not pay more to acquire most of the basic materials for Vietnamese dishes.

Those who indicated they paid more for Vietnamese food meant that they might pay more for eating good food at Vietnamese restaurants (60%). They wanted to eat good food at restaurants with family or friends for special occasions. In addition to eating at

restaurants, some subjects (8%) were willing to pay more for seafood, which tended to be more expensive than meat.

The majority answered they did not dislike anything specially. As less liked foods, seafood (16%), cheese (12%), meat (12%), overall fast food (12%), Mexican food (8%), tomatoes (8%), potatoes (4%), and Italian food (4%) were given. Other than specific foods, four of them answered they did not like oily foods, and one did not like creamy foods. Two mentioned that they did not like “too much meat.”

Food Beliefs

Healthy Food

The foods the subjects considered as healthy and unhealthy are shown in table 15. Almost all subjects thought that vegetables are healthy (80%). Some of the subjects thought that the Vietnamese diet could be healthier than some other diet because it contained a lot of vegetables. Among those who thought of vegetable as healthy, some specified fresh or steamed vegetables as healthy.

Rice was considered a healthy food by many subjects (40%), as well as other grain products, including pasta, noodles, and bread. Seafood and meat were considered as healthy by 12% and 8% subjects, respectively. However, “lots of meat” or “fatty meat” is considered to be unhealthy, as well as fast food, commercially prepared food, fried food, oily food, and some snacks.

One subject, who thought that overall Vietnamese food was healthy, commented that she considered *pho* or egg rolls as Vietnamese fast food, and that even fast food was

healthy in the Vietnamese diet. However, another subject stated that there were some unhealthy Vietnamese foods, and it really depended on what they were and how they were cooked. According to that subject, some of the Vietnamese cooking used “much coconut milk for curry” or “oil for flavor,” which could not be so healthy.

Table 15. The Foods the Subjects Considered as Healthy and Unhealthy

Food		No. of respondents	Percent of subjects
Healthy	vegetables	20	80
	general vegetables	14	56
	fresh vegetables	3	12
	steamed vegetables	2	8
	leafy vegetables	1	4
	grains		
	general grains	3	12
	rice	10	40
	noodles	1	4
	breads	1	4
	fresh fruits	5	20
	milk	2	8
	seafood, fish	3	12
	meat	2	8
	meat without fat	1	4
	soup	2	8
	steamed foods	2	8
	Vietnamese foods	1	4
Unhealthy	fast foods	5	20
	meat	4	16
	lots of meat	3	12
	fatty meat	1	4
	pizza	4	16
	fried food	2	8
	cheese	2	8
	sweets	2	8
	snacks, chips	2	8
	peanut butter	1	4
	prepared meals	1	4

Vegetarian Diet

In association with the Vietnamese diet, many subjects thought vegetables were healthy food. However, when it came to the vegetarian diets, not all subjects considered them as healthy diets; 40% did not think vegetarian diets were healthy, while 48% did think they were healthy. The reasons why vegetarian diets were not considered healthy were; “a little amount of meat is needed,” “protein from meat is important,” and “it is difficult to get enough protein and essential vitamins without meat.” Even those who thought vegetarian diets were healthy considered that it must be difficult for busy students to keep healthy diet because they needed extra efforts and time to prepare vegetarian meals. One of them commented that meatless was not necessary and that substitution must be considered.

The comments among those who thought vegetarian diets were healthy were “possible, but need to be watched,” “yes, but not for myself,” “yes, if protein can be taken properly,” and “soybean can give protein.” Two subjects were thinking about being vegetarians.

Vitamin/ Mineral supplementation

Only 8% currently took multivitamins and beepollen. The other 92% did not take any supplement.

The Priority for Food Selection

Two most important and two least important influences on choosing food were selected among nine choices; taste, health, convenience, price, calorie content, brand, appearance, childhood eating habits, and eating habits of friends (table 16). Taste was the major priority for food selection, followed by health, convenience, and childhood eating habits. Appearance, eating habits of friends, and brand were not chosen as the most important aspects of food selection. None chose the taste and health aspects at least important for food selection.

Table 16. The Important Influences on Choosing Food

Influences	Most important		Least important	
	No. of respondents	Percent of subjects	No. of respondents	Percent of subjects
taste	21	42	0	0
health	15	30	0	0
convenience	8	16	2	4
childhood eating	4	8	4	8
price	1	2	9	18
calorie content	1	2	5	10
appearance	0	0	5	10
eating habits of friends	0	0	9	18
brand	0	0	14	28

The Difference in Meal Practices

There were many changes in meal practices in college life for the subjects, compared to the life before college. In life before college, all of the subjects lived with their families, and none had the main responsibility for meal preparation. The meal was fixed at home, and there was school lunch in high school. In college life, they had to prepare their meals by themselves either by cooking or buying. The subjects did not eat meals as regularly as before. Many subjects did not eat either breakfast or lunch, and tended to eat meals later than before. Depending on their class schedules, they might eat brunch, early dinner, and frequent snacks. In addition, many subjects ate less than before. They did not have enough time or skill to cook and/or eat.

There were two opposite tendencies with the changes. While some of the subjects ate less healthy than before, the others stated that they ate healthier.

Those who ate less healthy in college tended to decrease in eating rice. They were “too busy to sit down for eating,” and ate more prepared foods or fast foods. They did not eat Vietnamese foods as often because it was easy to obtain American foods when they bought cooked foods or cooked easy foods, such as pasta or sandwiches. Their diets were considered to become unhealthy since they tended to think that balanced diets, including rice, were healthy diets and that eating the other foods without rice was less healthy. One subject also mentioned that eating rice was a real meal, and eating something without rice made her feel as if she were eating snacks.

As for those who thought their diets became healthier, they ate less meat and less fast food. Among those who ate less meat, one subject mentioned about school lunch in

high school, which contained much meat. In college life, she tried to eat more vegetables and less meat, for which many Vietnamese dishes can apply.

Many subjects who decreased fast food consumption did not like their taste. Before college, eating at fast food places was one of their entertainments because they usually ate meals at home. In college life, they could choose what and where they ate. They basically preferred eating Vietnamese food for their meals, and if it was not necessary to eat at fast food restaurants, they did not choose to eat there.

There were differences in meal practices, depending on where and with whom they lived. Three subjects who used to live in dormitories said that they did not have much choice in foods. They decided to live in an apartment mainly because of the meal problems in the dormitories. They had to eat “chunks of meat” or “pasta for dinner instead of rice,” and they did not have chances to eat Vietnamese food. Two of them were even thinking about being vegetarian after eating too much meat and kept thinking of healthy diets. Two Vietnamese students who currently lived in dormitories confirmed their narrow choices. They still missed the Vietnamese food; however, they had to keep eating the foods that dormitories offered. Most of the Vietnamese students tended to live in apartments, and even though they might not cook Vietnamese food every day, they had more opportunity to keep their favorite diets.

DISCUSSION

The subjects have lived in the United States for more than six years. Therefore, Vietnamese foods, for them, mostly meant the foods that were eaten at home with their families. When they mentioned Vietnamese foods, they could have been already modified in the United States. The further modification of food habits and their food associate beliefs in comparison with previous studies of Vietnamese food habits are discussed. To understand the modification, the factors influencing their food choices are also examined, combining questions asked in several sections.

Food Consumption

Cereal Grains

Rice was the only food that almost all subjects often ate. Rice is the central food to the Vietnamese diet. The Vietnamese college students in this study continued to eat it in college life, which is consistent with all studies concerning Vietnamese food habits in the United States (Crane and Green 1980, Hung et al. 1995, Nguyen et al. 1983, Story and Harris 1988, and Tong 1991). Noodles, either rice or egg, were also consumed occasionally.

Bread and breakfast cereal were popular for breakfast among the Vietnamese college students. Crane and Green (1980) reported that breakfast cereal was not familiar food in Vietnam, and that it was not accepted by some of the Vietnamese immigrants

(41%) in their study. In this study, none showed dislikes for either bread or breakfast cereal. Some of the subjects consumed bread as sandwiches even for dinner because they were easy to prepare. However, many subjects mentioned that meals without rice were not considered meals.

Pasta, which was hardly mentioned in previous studies of Vietnamese food habits, was mentioned in this study. Both pasta and sandwiches were popular among general college students (Huang et al. 1994), and they were well accepted by some Vietnamese college students in this study because of their busy college lives.

Vegetables and Fruits

Vegetables are added to soup or combined with meat in many Vietnamese dishes. They were eaten either fresh or cooked by the subjects. Most vegetables that the subjects wanted could be obtained easily in the local grocery stores. One subject mentioned that she used canned Chinese vegetables because of limited access to some specific vegetables. Generally fresh produce was preferred over frozen or canned in spite of the wide use of vegetables in Vietnamese dishes and the availability of canned vegetables in the United States, which is consistent to the previous studies (Campbell and Loewen 1981, Crane and Green 1980). However, some vegetables, such as corn and green beans were preferred to be used canned or frozen.

Huang et al. (1994) reported that potatoes were popular among general college students, and three out of four often-consumed vegetable dishes by them were potatoes, such as French fries, baked potatoes, and mashed potatoes. In spite of the fact that the

subjects in this study consumed wide varieties of vegetables, they hardly mentioned eating potatoes. It suggests that the Vietnamese college students in this study tended to eat Vietnamese food, since those popular potato dishes are all American styles.

Meat, Poultry, and Fish

Protein consumption generally increased after immigration because animal protein foods were more plentiful and less expensive (Crane and Green 1980).

None of the subjects were vegetarians, and they mainly consumed small amount of meat. Some students preferred using specific meat; 36%, 20%, and 16% often used chicken, beef, and pork, respectively.

Huang et al. (1994) reported that low fat meat selections, such as turkey and chicken, were popular with college students for single meat dishes. The Vietnamese college students in this study tended not to consume single meat dishes, but some of them selected low-fat meat for Vietnamese dishes because of health interests.

Fish, which is often eaten in Vietnam, was not as popular as meat among the subjects. It tends to be more expensive and less available in the United States, which greatly influences food choices of college students (Betts et al. 1994, Betts et al. 1997).

Dairy Products

Milk was consumed either alone or with breakfast cereals by the subjects. Usually its fat content was 2% or less, which was also preferred by general college students (Huang et al. 1994).

Milk and other milk products are not traditional foods in Vietnamese diets, but the increase in consumption was reported in previous studies (Campbell and Loewen 1981, Crane and Green 1980). In the study of food habits of Vietnamese high school students, more than one-half drank milk daily or almost daily (Story and Harris 1988). It suggested the high acceptability of milk to Vietnamese children through school lunch programs. Some Vietnamese college students in this study who drank milk regularly also mentioned the importance of drinking milk for their health concerns.

The dislike of cheese, which was seen among Vietnamese high school students (Story and Harris 1988) was not mentioned by the Vietnamese college students in this study except by one student.

Beverages

Water was normally consumed at main meals, and fruit juices were consumed occasionally. Increase in soft drink consumption after settlement in the United States was reported in previous studies (Campbell and Loewen 1981, Crane and Green 1980). Soft drinks appeared to be well accepted by the Vietnamese college students in this study.

Tea and coffee were hardly mentioned in this study in spite of the fact that they were continued to be consumed by the general Vietnamese population in the United States (Crane and Green 1980).

The majority of the subjects did not drink diet drinks. However, diet drinks were well accepted among the general college students, especially women (Huang et al. 1994).

This difference might be associated with cultural psychological factors and their weight concerns.

Snack Foods

The majority of the Vietnamese college students in this study consumed snacks at least once a day. Chips, cookies, crackers, candies, and fruits were consumed as snacks.

Traditionally, Vietnamese are not heavy snackers, and high-fat, high sugar foods (candy, donuts and soft drinks) are generally not common in Vietnam. Story and Harris (1988) showed that between-meal snacking was uncommon among Vietnamese high school students in their study, with only 20% to 25% of them snacking in the afternoon or evening, while American teen-agers tend to snack more often; 56% of US teen-agers snack at least once a day. The most common snacks among the Vietnamese high school students in their study were leftover rice and carbonated drinks.

However, snacks were one of the fast-accepted foods by some Vietnamese after settlement (Campbell and Loewen 1981). This study shows high acceptance of snacking in college life among the Vietnamese students.

Meal Pattern

The Vietnamese college students in this study preferred eating three meals a day: breakfast, lunch, and dinner. However, their school schedules greatly influenced their meal patterns.

Breakfast was most often missed by the Vietnamese college students in this study. Breakfast is the most frequently skipped meal by all age groups, and young adults skip this meal more often than other age groups (Pao et al. 1989). Huang et al. (1994) reported that 20 to 25% of general college students in their study skipped breakfast. The study examining the factors influencing the food habits of young adults showed that they perceived that lack of time and busy schedules largely impacted on eating and food choices. Their time commitments for work or school made them not always able to eat (Betts et al. 1995).

High rates of missing lunch, compared to the general college students, was seen among the Vietnamese college students in this study. As mentioned above, almost 25% of general college students skipped breakfast; however, only 7.2% skipped lunch (Huang et al. 1994). Compared to the data, the Vietnamese students skipped lunch more often. Depending on their school schedules, they might need to eat meals at lunch time on campus. However, many subjects seemed to avoid eating lunch on campus not only because of their busy schedules but also because of the narrow food choices on campus. They would rather eat Vietnamese foods at a different time than lunch time. Because of school schedules, they might eat a late breakfast and a late lunch at home in order to eat Vietnamese foods.

The meal patterns of the Vietnamese students, which showed that they skipped lunch more frequently than general college students, might be associated with their weight concerns. The eating patterns of the college students were categorized in four patterns and explained meal frequency variances in association with weight concerns (Bailey 1989). The Vietnamese students avoided eating lunch on campus because of taste

and price concerns. However, their behavior might be explained that they were categorized as lunch avoiders, who had moderate frequency for breakfast, evening snacks, and dinner with low frequency for lunch and afternoon snacks, and considered themselves underweight.

Instead of eating lunch, frequent snack consumption was reported by the subjects in spite of the low frequent snack consumption in Vietnam. This high frequency of snack consumption was also associate with the college life style. Huang et al. (1994) reported that almost 80% of general college students had snacks at least once a day in their study.

Dinner was eaten regularly by all Vietnamese college students in this study. They ate dinner mostly at home, even when they bought food outside.

During weekends, the subjects might have a different meal pattern from weekdays. The mealtime tended to be later, and the amount of meals was more on weekends.

The meal pattern of the subjects was very influenced by college life, compared to that of Vietnamese high school students in previous study (Story and Harris 1988). They reported that Vietnamese high school students also skipped breakfast often; only 26% of females ate breakfast regularly. However, since they had free school lunch, most of the students ate lunch regularly, and 75% liked the food served in the school lunch program. Between-meal snacking was an uncommon occurrence for the Vietnamese high school students. Because the Vietnamese college students had more choices in where and what to eat, their meal patterns were more various, depending on individuals.

Food Beliefs

The subjects tended to consider grains healthy foods. Among grains, specifically rice, which is central in Vietnamese diets, was most mentioned as a healthy food. It was regarded as a cultural super-food, including health-enhancing benefits as seen in the study of food habits of Vietnamese high school students (Story and Harris 1988). In their study, 71% of Southeast Asian high school students considered rice as one of the foods that made one healthy and strong.

Many subjects also thought vegetables were healthy foods. Vegetables are widely used in Vietnamese foods, and together with rice, the subjects believed that Vietnamese foods were healthy.

In contrast to the grains and vegetable groups, milk and milk products have not acquired an important role in the Vietnamese diet, and only two subjects in this study mentioned that milk was healthy food. This is also shown in the study of the food habits of Vietnamese elderly (Tong 1991). Only 5% of the elderly thought drinking milk or eating cheese was part of good diet. Furthermore, the study of Vietnamese high school students shows that 59% believed that dairy products (cheese, milk, and ice cream) would make one fat rather than making one healthy and strong (Story and Harris 1988).

Though the Vietnamese students agreed that vegetables were an important part of a healthy diet, a vegetarian diet was not so accepted. Vegetarian eating habits were popular among general college students who were concerned about fat (Walker 1995). Many young vegetarians chose not to eat meat in order to reduce the intake of fat. However, almost half of the Vietnamese students did not think that a vegetarian diet was

healthy. The importance of balanced diets was often mentioned by the subjects, and many subjects thought meat was important for a balanced diet. The other half of the Vietnamese students thought a vegetarian diet was healthy; however, most of them also commented that they did not need to eat a vegetarian diet. Many subjects believed that the Vietnamese food, which contained small amounts of meat and various vegetables, was a healthy and balanced diet. It is consistent with the study of food habits of Vietnamese elderly (Tong 1991). The elderly in the study thought that a nutritionally balanced meal should include rice and bread (97%), fresh vegetables and fruits (85%), and meat and fish (77%), which was associated with the preference of their traditional diet.

Influences on Food Choices

Taste, health, and convenience were considered as the most important influences on food choice for Vietnamese students. Price and calorie content were not selected as important factors in spite of the high concern among college students. Each factor that reveals the food habits and beliefs of the Vietnamese college students in this study is discussed later. The childhood eating habits and food habits of friends were not selected as important factors; however, they are also discussed since some of the comments by the subjects showed that they greatly influenced their food choices.

Taste

The Vietnamese students considered taste as the most impact factor. It made their meal patterns unique from general college students who tended to think of convenience as the biggest influence on food consumption. Generally college students ate out often, especially at fast food restaurants (Sneed 1991). Vietnamese students did eat out; however, most of the subjects hardly ate at fast food restaurants because they did not like the taste of fast foods. Some mentioned hamburgers and Mexican fast foods as dislikes. Many subjects avoided eating meals on campus since the places to eat on campus tended to be fast food places. They often consumed snacks instead of meals on campus, and most subjects consumed snacks more than once a day. None showed specific dislikes in snacks, concerning tastes.

Health

Though many subjects were too busy to care about what they ate, their health concerns still influenced their food choices. The reason why they mentioned health in spite of their busy schedules was that most of the subjects thought that the Vietnamese diet was healthy itself. Even though some did not have much concern for health in their food consumption, they tended to think that their diets were healthy as long as they ate Vietnamese foods. The comments in which Vietnamese students implied that Vietnamese food is healthy were such as “Vietnamese foods contain various vegetables,” “rice is core food for Vietnamese food,” and “Vietnamese food is well balanced with small amounts of meat and vegetables.”

As unhealthy foods, fast food, meat, pizza, fried food, and cheese were mentioned in association with oily and fatty food, and the subjects believed that they were found more in American foods. Even though most subjects mentioned their careless habits in food choices, they were still comfortable to some extent as long as they ate Vietnamese foods.

Convenience

The comments relating to the impact of time on food choices were often mentioned, though it was not the first priority for choosing foods. Depending on school schedule, some subjects needed to eat out or skipping meals. However, eating out for them was more entertainment than convenience since they tended not to eat at fast food restaurants. They ate just rice alone or with something easy to prepare instead of eating out. Even though they talked about their busy lives and careless food habits, most showed dislikes of using prepared frozen foods, and they hardly used commercialized prepared frozen foods.

Price

Though price was not selected as one of the most important factors by the subjects, it showed some influence on their food choices. The subjects, who avoided eating at fast food restaurants, tended to eat meals at home because they could not afford to eat at Vietnamese or Chinese restaurants daily. They tried to adjust their mealtimes

and might eat late breakfast or early lunch before going to school and eat something after coming back.

Most of the subjects did not buy expensive Vietnamese food materials. Their food habits were already modified in the United States, and they might not have strong preferences for the very specific Vietnamese foods, which could be expensive in the United States. Most of the food that Vietnamese students used was obtained at local supermarkets and not expensive.

Calorie Contents

The food choices of Vietnamese students were influenced very little by calorie contents of foods. This might be associated with their lower BMI than that of general college students. According to BMI, 40% of the subjects was considered underweight ($BMI < 19.1$), 56% was in normal range ($19.1 < BMI < 25.8$), and one subject (4%) was overweight ($25.8 < BMI$). Even though they mentioned the cultural expectation to be slim, most subjects seemed to avoid, or paid no attention to, low fat products. Some subjects did consider the calorie contents; however, they tried to make their diets lower in fat in different ways. They applied replacement, which describes changes of high fat foods for low fat foods, or exclusion, which describes eliminating high-fat foods and cooking methods; however, not substitution, which uses specially manufactured low-fat products as substitution of their usual counterparts. One subject described her low-fat diet as not eating much meat or drinking milk. Another subject mentioned that she chose pretzels instead of chips. However the Vietnamese diet already excludes high fat foods

and replaces them with lower fat materials, so it might not be necessary for many subjects to specially introduce low-fat products in their diets. Some of the subjects even showed contempt for the usage of low fat foods and diet drinks, considering their use “cheating.”

Childhood Eating Habits/ Eating Habits of Friends

Many of the subjects lived with one or two other students, who could be a brother or a sister. The subjects who did not have brothers or sisters tended to live with their Vietnamese friends. Some of them often had meals together, especially dinner, and the meals they had together were more likely to be Vietnamese.

Though not many specifically mentioned the eating habits of childhood as important influence, they obviously acquired favorite tastes in Vietnamese foods. All subjects but one preferred eating Vietnamese foods, and they tended to cook Vietnamese foods at home.

Both eating habits of friends and childhood eating habits, which led to higher frequency of eating Vietnamese foods, were the biggest factors influencing their food habits in college life in spite of the fact that they hardly mentioned either factor as an important influence.

CONCLUSIONS

All Vietnamese college students in this study preferred eating Vietnamese foods, and most of them cooked Vietnamese foods more often than American foods. The Vietnamese foods the subjects often ate were rice and mostly stir-fry type of dishes with small amounts of meat and various vegetables, using Vietnamese seasoning, such as fish sauce, pepper, oyster sauce, hoisin sauce, chilis, and herbs. The fish sauce, which is substantial for Vietnamese dishes, was owned by all subjects, including those who lived in dormitories. Other seasonings were owned, depending on how often they cooked at home. Some of the subjects who cooked their meals everyday had most of the seasonings, but limited the use of some seasonings. The subjects might cook “Asian foods”, which were not exactly Vietnamese, but had familiar flavor with those seasonings and could be eaten with rice. The dishes that they cooked tended to be easy and did not require special skill or specific Vietnamese equipment. All subjects had rice cookers and chopsticks, but only a few of them had special utensils for Vietnamese cooking.

In addition to rice, noodles were also popular, and “*pho*” was often mentioned as a traditional Vietnamese dish. However, the subjects less often ate it at home because of time availability. Vegetables were important for Vietnamese dishes, and in addition to health concerns, the subjects tended to eat them often. Red meat and poultry were consumed as their main protein sources more often than seafood because of economics and time availability.

Most of the food for Vietnamese dishes could be obtained in local grocery stores, except some of the specific Vietnamese seasonings or noodles; therefore, it was not

expensive to cook Vietnamese foods. Even those that had to be obtained in Asian grocery stores were not expensive. The very specific Vietnamese foods, which could be expensive in the United States, might not so be familiar for the subjects who lived in the United States for most of their lives. Generally the subjects did not want to pay more to eat Vietnamese food. They sometimes paid more for “good Vietnamese foods” in restaurants, especially in Portland.

Though most subjects kept eating Vietnamese food, they did increase their eating of American food. They presented pasta, sandwiches, or fast foods as often eaten American foods, which were fast to eat, easy to prepare, and inexpensive, all of which were important factors for college students. Those foods were found more among American foods, and resulted in high consumption of “American foods” in spite of high preference of “Vietnamese foods.” The busy schedules of the subjects in college life greatly influenced when and what they ate.

However, the subjects generally kept eating their own style of Vietnamese foods in college life. They considered the taste of food as the most important factor for their food choices. This was associated with the unique meal pattern of the subjects, which showed low frequency of lunch and high frequency of snacks. They tended to eat meals at home in order to eat rice, which is the central food for their diets. Many subjects considered that the Vietnamese foods, which consisted of rice and many vegetables, were healthy. This also enhanced their Vietnamese food consumption in college life, in addition to their taste concern. Interestingly the subjects in this study were not so much acculturated where food was concerned, even among those who had lived in the United States for their whole lives.

In conclusion, though the subjects mentioned about their busy schedules and careless food habits, which led to their consumption of some foods that were not Vietnamese and not often eaten with their families before, they considered that it could be temporary and that the Vietnamese foods should be eaten as real meals. Their food consumption was similar to those in other studies about food habits of Vietnamese immigrants with the feature of convenient foods, such as pasta, sandwiches, and fast foods in college life. However, the data in this study was limited by the small number of subjects and limited area of the data collection. Future research is needed for any generalization.

BIBLIOGRAPHY

- Akan, G., & Grilo, C. 1995. Sociocultural influences on eating attitudes and behaviors, body image, and psychological functioning: a comparison of African-American, Asian-American, and Caucasian college women. International Journal of Eating Disorders, 18(2), 181.
- Bailey, S., & Goldberg, J. 1989. Eating patterns and weight concerns of college women. The Journal of the American Dietetic Association, 89(1), 95.
- Barer-Stain, T. 1979. *You Eat What You Are*. Toronto, McClelland and Stewart Ltd.
- Betts, N., Amos, R., Georgiou, C., Hoerr, S., Ivaturi, R., Keim, K., Tinsley, A., & Voichick, J. 1995. What young adults say about factors affecting their food intake. Ecology of Food and Nutrition, 34, 59.
- Betts, N., Amos, R., Keim, K., Peters, P., & Stewart, B. 1997. Ways young adults view foods. The Journal of Nutrition Education, 29(2), 73.
- Campbell, M. & Loewen, R. 1981. The food habits of Southeast Asian refugees. Canadian Home Economics Journal, 31(2); 92.
- Chapman, G., & Maclean, H. 1990. Qualitative research in home economics. The Canadian Home Economics Journal, 40(3), 129.
- Crane, N., & Green, N. 1980. Food habit and food preferences of Vietnamese refugees living in northern Florida. The Journal of the American Dietetic Association, 76, 561.
- Eckstein, E. 1980. *Food, People and Nutrition*. AVI Publishing Co., Westport, CT.
- Eldridge, A., & Sheehan, E. 1994. Food supplement use and related beliefs: survey of community college students. The Journal of Nutrition Education, 26(6), 259.
- Georgiou, C., Betts N., Hoerr, S., Keim, K., Peters, P., Stewart, B., & Voichik, J. 1997. Among young adults, college students and graduates practiced more healthful habits and made more healthful food choices than did nonstudents. The Journal of the American Dietetic Association, 97(7), 754.
- Hertzler, A., & Frary, R. 1992. Dietary status and eating out practices of college students. The Journal of the American Dietetic Association, 92(7), 867.
- Hertzler, A., & Frary, R. 1989. Food behavior of college students. Adolescence, 24, 349.

- Hernon, J., Skinner, J., Andrews, F., & Penfield, M. 1986. Nutrient intakes and food selected by college students: comparisons among subgroups divided by energy intakes. The Journal of the American Dietetic Association, 86, 217.
- Huang, Y., Song, W., Schemmel, R., and Hoerr, S. 1994. What do college students eat? Food selection and meal pattern. Nutrition Research, 14(8), 1143.
- Hung, S. et al. 1995. Dietary intake patterns of Vietnamese in California. The Journal of Nutrition Education, 27, 63.
- Kelsey, M. 1992. The food habits of Vietnamese immigrants in Oregon. Unpublished.
- Kittler, P., & Sucher, K. 1997. Food and Culture in America: A Nutrition Handbook, 2nd edition. West/Wadsworth.
- Koszewski, W., & Kuo, M. 1996. Factors that influence the food consumption behavior and nutrition adequacy of college women. The Journal of the American Dietetic Association, 96(12), 1286.
- Kristal, A., Shattuck, A., & Henry, H. 1990. Patterns of dietary behavior associated with selecting diets low in fat. The Journal of American Dietetics Association, 90, 214.
- Kuhnlein, H. 1989. Culture and ecology in dietetics and nutrition. The Journal of American Dietetics Association, 89(8), 1059.
- Nguyen, T., Do, T., Craig, W., & Zimmerman, G. 1983. Food habits and preferences of Vietnamese children. The Journal of School Health, 53, 144.
- Pao, E., Sykes, K., & Cypel, Y. 1989. USDA methodological research for large-scale dietary intake survey, 1975-1988. 82.
- Pate, J., Pumariega, A., Hester, C., & Garner, D. 1992. Cross-cultural patterns in eating disorders: A review. Journal of the American Academy of Child and Adolescent Psychiatry, 31, 802.
- Sneed, J., and Holdt, C. 1991. Many factors influence college students' eating patterns. The Journal of the American Dietetic Association, 91, 1380.
- Stewart, B., & Tinsley, A. 1995. From qualitative to quantitative: development of an instrument to assess food choice influences of young adults. Ecology of food and nutrition, 34, 171-181.
- Story, M., & Harris, L. 1988. Food preferences, beliefs, and practices of Southeast Asian refugee adolescents. The Journal of School Health, 58(7), 273.

Tong, A. 1991. Eating habits of elderly Vietnamese in the United States. The Journal of Nutrition for the Elderly, 10(2), 35.

Tsai, C., Hoerr, S., & Song, W. 1998. Dieting behavior of Asian college women attending a US university. Journal of American College Health, 46, 163.

Walker, C. 1995. Meet the new vegetarian. American Demographics, 17(1), 9.

APPENDIX

Food Habit Questionnaire

Informed consent

This survey is developed for investigating food habits of Vietnamese young women in Oregon. It takes you no more than 20 minutes to complete this survey. It is strictly confidential and there is no known risk involved. Your response will be identified only by a code number and used as pooled results. Participation in this study is voluntary and you can discontinue participation at any time. If you have questions about the survey later, please contact Akiko Miura at 713-6734.

My signature below indicates that I have read and that I understand the procedures described above and voluntary consent to participate in this study. I understand that I will receive a signed copy of this consent form.

Signature

Date signed

Section 1
Food habits information

1. What do you often eat for breakfast?

2. How often do you eat snacks?

once a day or more 2-3 times a week once a week less

If you eat snacks

Between what meals?

What do you eat or drink?

3. How often do you eat at fast food restaurant?

Once a day or more 2-3 times a week once a week less

If you eat at fast food restaurants, name the type of restaurant.

4. How often do you eat at restaurant?

Once a day or more 2-3 times a week once a week less

If you eat at restaurant, name the type of restaurant.

5. Name foods that you often eat.

Did you also eat these foods often at home with your family?

Yes No

Name foods that you do not often eat now, which you often ate with your family.

6. Name foods that you do not eat because they are distasteful to you.

7. What beverages do you usually consume at your main meal?

soup
tea
beer
wine
soda
coffee
milk
boiled water
tap water
Vietnam drinks
other

8. Which do you prefer to eat, Vietnamese foods or American foods?

Vietnamese American Same

Are you willing to pay more for Vietnamese foods?

Which foods?

9. How often do you eat Vietnamese foods / American foods?

More Vietnamese more American almost same

Name foods you often eat.

10. How often do you cook Vietnamese foods / American foods?

More Vietnamese more American almost same

Name foods you often cook.

11. What seasonings do you have in your kitchen?

chiles (*ot*)
 coconut milk (*nuoc cot dua*)
 curry spices (*ca-ri*)
 flour (*bot*)
 five spice powder (*ngu vi huong*)
 herbs (*rau*)
 pepper
 fish sauce (*nuoc mam*)
 hoisin sauce (*tuong ngot*)
 oyster sauce (*dau hao*)
 bean sauce (*tuong cu da*), soy sauce
 sesame oil (*dau me*)
 shrimp paste (*mam tom*)
 sugar cane (*mia*)
 other

12. What kitchen utensils do you have?

bamboo steamer
 chopsticks
 graters
 mini-chop
 mortar and pestle
 wok
 rice cooker

13. Do you eat prepared frozen foods?

Yes No

Name those foods.

How often do you use them?

14. Do you eat canned foods?

Yes No

Name those foods.

How often do you use them?

15. Do you drink diet drinks?

Yes No Sometimes

16. Do you eat low-fat / low-calorie foods?

Yes No Sometimes

Name those foods.

How often do you eat them?

Section 2

Food associate beliefs

1. What foods do you consider as healthy foods / not healthy foods?

2. Do you think of vegetarian diet as healthy diet?

3. Do you currently take any diet supplement? If yes, which ones?

Section 3

Influences on food choices

1. What influences the type of foods that you choose for your main meal?
Choose first two and last two among those influences.

health
price
taste
convenience
appearance
calorie content
brand
childhood eating habits
eating habits of friends

Food consumption on a day

What did you eat for your breakfast yesterday?

What did you eat for your lunch yesterday?

What did you eat for your dinner yesterday?

What did you eat for your breakfast today?

1. Is this a typical day?

Yes No

If it is no, what is the main difference?

2. Is there a difference between the weekend and weekday?

Yes No

If it is yes, what is the main difference?

3. Have your food habits changed at college?

Yes No

If it is yes, what are the main differences between what you eat here at college and at home with your family?

Demographic information

1. Age and place of birth
2. Height and weight
3. How long have you been in the United States?
4. Where were your parents born?

Are they Chinese-Vietnamese?

5. With whom did you live before college? Where?
6. With whom do you live now?
7. Who cooks at home?
8. Where do you live now?
apartment dormitory