

Anthropometrics, Dietary Habits, and Feelings About Health Among Wisconsin Hmong-Americans

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ABSTRACT

Lifestyle related diseases may be becoming more common in Hmong-Americans compared with Hmong in their native lands. To recognize and address important issues for Hmong-American health and wellness, we assessed basic anthropometrics, dietary and physical activity, and knowledge of and attitudes toward health and healthcare of Wisconsin Hmong-Americans. Body mass index (BMI) averaged 26.8 ± 6.5 , did not differ by gender, and was significantly higher in those reporting regular soda consumption (27.4 ± 7.0 , $n=39$ versus 24.5 ± 3.7 , $n=11$). BMIs were significantly higher in those identifying themselves as too fat (29.9 ± 7.0 , $n=23$) versus just right (24.4 ± 4.6 , $n=25$) or too thin (19.6 ± 1.9 , $n=2$). Nearly all subjects reported consuming rice, beef, chicken, pork, and various fruits and vegetables regularly. Among subjects, 84, 82, 80, 64, and 58% identified vegetables, grains/breads, meats, fruits, and dairy, respectively, as major food groups. Hours reported in various activities were not significantly correlated with BMI, however, the majority of subjects ($n=25$) reported that they do not get enough exercise. Most subjects ($n=33$) consult both physicians and traditional healers of either gender ($n=42$) about health issues. Our results suggest that overweight is an issue for Hmong-Americans related to exercise, diet, and nutrition awareness and warrant further study.

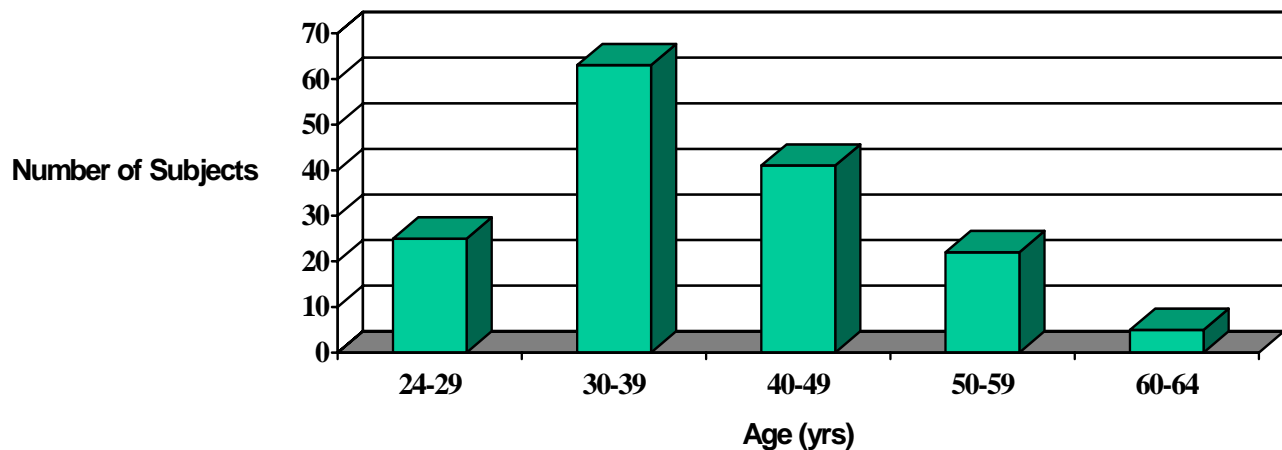
INTRODUCTION

In their native homeland, the Hmong lifestyle revolves around farming and raising livestock. Many hours are spent walking to and from and working in fields in mountainous regions. The traditional dietary staples include rice and vegetables with some kind of meat on special occasions. In America, Hmong-Americans are employed in manufacturing and other non-agricultural jobs and spend most hours of the day working. While some Hmong-Americans lease land for farming, there is less time and resources to garden, even when the climate permits. From the author's personal experience, it seems that a wider variety of food choices are available in America. Although rice and vegetables are still considered staples for most Hmong-American families, meat has become a regular menu item; more dishes are also available at mealtime; more food is consumed per individual; and communal dining is being replaced by more individualized meals.

Traditionally, Hmong have relied on community healers, shamans, and those knowledgeable of herbal medicine to treat and cure sickness. They may not have specific names to refer to lifestyle-related diseases. For these reasons communication barriers among patients, their family members, and non-traditional health care providers may exist. Many Hmong-Americans have an understandable fear and skepticism of American medicine.

Recently, La Crosse County Public Health Department staff collected health data from 156 (60 male, 96 female) Hmong residents. The age distribution and results of this unpublished pilot screening are shown in Figure 1. Some of the health parameters measured suggest that health risks previously less-existent or unrecognized in the Hmong homeland, may be emerging in the La Crosse area Hmong-American population as they adapt to American lifestyles.

The purpose of this research was to: 1) study the relationship among dietary habits and feelings about health within and among Wisconsin Hmong-American families, 2) assess BMI, diet, and physical activity habits in the recently immigrated Hmong-American population, and 3) recognize and address important issues for health and wellness so that appropriate educational tools may be developed to support Hmong-American health and wellness.



ELEVATED PARAMETER	RISK CATEGORY		
	MODERATE	HIGH	TOTAL
Weight	20%	41%	61%
Waist: hip	47%	31%	78%
Blood total cholesterol	25%	13%	38%
Blood glucose	14%	5%	19%
Blood pressure	21%	21%	42%

Figure 1. La Crosse County Public Health Department Health Screen Data.

METHOD

The Institutional Review Board for the Protection of Human Subjects at the University of Wisconsin-La Crosse approved our research protocol. Fifty Hmong-American individuals were recruited from the La Crosse and Wausau, Wisconsin areas. Subject participation was voluntary and each provided informed consent prior to data collection. Four prizes were awarded by raffle to participants as incentive for their participation. The participants were also given a traditional Hmong and American food list (Table 1) and asked to indicate regularly consumed foods. Each participant was given a list of questions (Table 2 contains examples) to answer about their diet and health related issues. The questionnaires were available in both English and Hmong. The researcher also acted as the translator/interviewer where the participating individual could not read, but could understand, the spoken language. Each participant had his or her weight and height recorded at the interview. Subject weights were measured with a Siltec®, model PS500L, scale. Heights were measured in bare or stocking feet with a Seca® 2-14 Road Rod stadiometer. Body Mass Index (BMI) was calculated as follows: $BMI = \text{weight (kg)} \div \text{height (m)}^2$. SPSS® was used for descriptive, correlative, analysis of variance (ANOVA) and post-hoc statistics. Group variable differences were considered statistically significant at $p < 0.05$.

Table 1. List of Food Items Consumed Weekly By Subjects.

	Food Items Consume on a Regular Basis				
	Male		Female		
	Yes	No	Yes	No	
breakfast cereal	5	21	4	20	50
hamburger	10	16	6	18	50
pizza	9	17	3	21	50
soda pop/soft drink	24	2	15	9	50
milk (chocolate too)	10	16	7	17	50
salty snack foods (such as chips)	14	12	7	17	50
sweet snack foods (such as cookies, cake)	12	14	12	12	50
submarine sandwich	7	19	3	21	50
ice cream	10	16	8	16	50
salad	7	19	7	17	50
french fries	14	12	4	20	50
beer	8	18	2	22	50
grape wine	0	26	0	24	50
hard liquor	0	26	1	23	50
rice	26	0	23	1	50
curry noodles	14	12	11	13	50
Italian spaghetti	1	25	5	19	50
Hmong rice stick (pho)	9	17	13	11	50
rice noodles	13	13	10	14	50
raman noodles	15	11	14	10	50
tomato	12	14	11	13	50
orange	14	12	9	15	50
peach	14	12	9	15	50
banana	16	10	10	14	50
mango	12	14	5	19	50
papaya	13	13	4	20	50
cabbage	16	10	15	9	50
greens	18	8	13	11	50
broccoli	13	13	11	13	50
pepper	23	3	13	11	50
squash	4	22	3	21	50
pumpkin	4	22	4	20	50
fish	16	10	8	16	50
pork	26	0	20	4	50
beef	25	1	16	8	50
chicken	26	0	22	2	50
water	26	0	24	0	50
tapioca drink	3	23	1	23	50
hard candy	6	20	11	13	50
dried fruit	4	22	2	22	50
nuts	3	23	4	20	50
egg roll	9	17	7	17	50
spring roll (not fried)	5	21	5	19	50
papaya salad	10	16	3	21	50
cigarettes	0	26	1	23	50

Table 2: Questions Regarding Meal Patterns and Health.

	Yes	No	Unsure
Do you eat one thing from each food group with every meal?	10	24	16
Do you believe eating the right foods helps your body stay well?	47	1	2
Do you feel that you get enough exercise?	11	25	14
Do you see a doctor for a check up yearly?	14	15	21
Do you believe your body is well and free of illness?	14	15	21
Do you have an illness that does not get better?	4	33	13
Have you seen a doctor in the last 2 years?	31	18	1
Have you seen a Hmong healer in the last 2 years?	12	37	1

	Better	Gone	No Answer
If you are taking a prescribed medication when do you stop taking it?	29	11	10

	Hmong	American	Both
Do you prefer using Hmong Medicine or American Medicine?	4	4	42
Do you prefer to see Hmong healers or American doctors?	6	11	33

	0	0.5	1	2	3	>3	Unsure
How many meals do you usually eat in a day?			0	35	13	2	
How many meals do you eat at home in one week that are prepared from raw ingredients?	2		5	12	7	24	
How many meals do you eat that are pre-prepared at home in one week? (examples: microwave chicken, lunchables, can soup)	13		18	10	5	4	
How often do you eat at (or from) a fast food restaurant in one week?	15		15	7	6	6	
How many servings do you usually have during each meal?			6	20	1	6	17
How much rice do you consider to be in a serving? (measured in cups)		9	21	7	2		11

RESULTS

Twenty-six males and 24 females, ages 18-45 years, completed all measurements. With regard to health and healthcare (Table 2), most respondents recognized that the food they consume and the amount of exercise they accomplish impacts their health. While only 28% of subjects reported seeing a doctor yearly, 62% reported a visit to the doctor in the last 2 years and only 24% reported seeing a traditional healer in that same time. The majority of subjects valued both Hmong and American medicine and healers/doctors. Interestingly, for those who stated a preference for one or the other modes of healthcare, the reasons given were strikingly similar: healer/doctor takes time to explain and increase understanding of illness, comfort with one, or discomfort with the other. Seven of 11 participants that favored doctors for healthcare suggested that they had the facts or science to back up their medicine. Answers to the questions regarding the use of over the counter and prescription medications were hard to interpret, as we felt some respondents did not clearly understand the difference.

As shown in Table 2, most subjects reported eating 2-3 meals per day and 2 or more servings at each meal, although several subjects were unsure of how many servings they ate and the amount of food (rice) in a serving. Subjects reported eating more meals at home from raw ingredients than either pre-prepared foods or from fast food restaurants. Most subjects recognized that there were specific food groups, but few could list them all (Figure 2). The entire food list and reports of weekly consumption of each food item are shown in Table 1. There were no vegetarian subjects and all subjects reported eating both Asian and American foods as identified by the researchers.

Body mass index averaged 26.8 ± 6.5 (mean \pm standard deviation), which we consider of concern since the average age of subjects was 22.1 ± 6.3 . BMIs did not differ by gender and was significantly higher in those reporting regular soda consumption (Figure 4). BMIs were observed to be significantly higher in those identifying themselves as too fat (29.9 ± 7.0 , $n=23$) versus just right (24.4 ± 4.6 , $n=25$) or too thin (19.6 ± 1.9 , $n=2$). The number of hours

reported in various activities were not significantly correlated with BMI, however, the majority of subjects (n=25) reported that they do not get enough exercise.

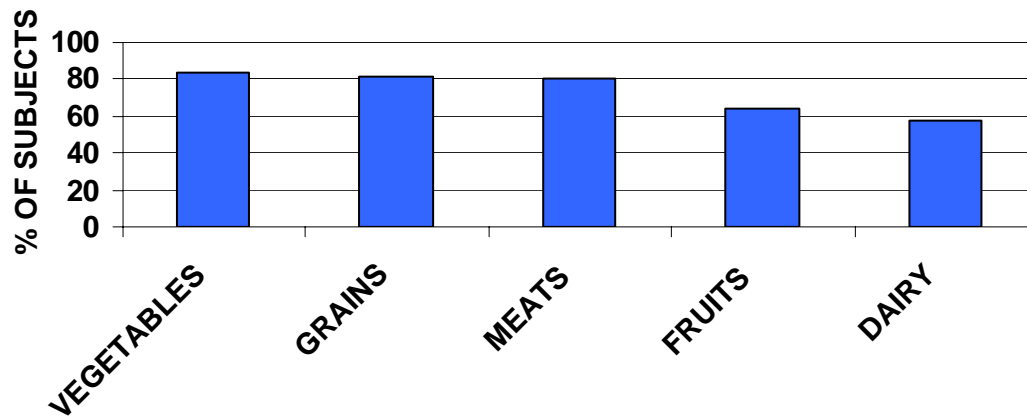


Figure 2. Number of Subjects Who Correctly Identified Corresponding Food Category.

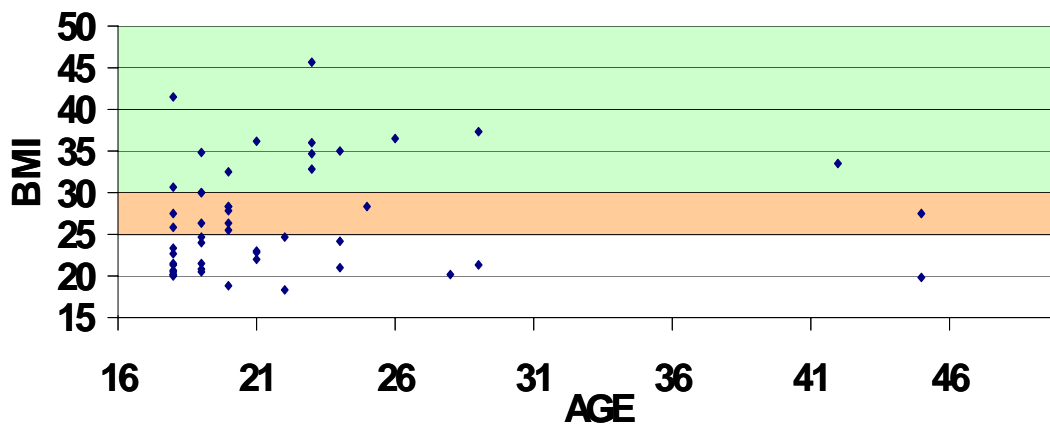


Figure 3. BMI Distribution of Subjects by Age. The peach and sage backgrounds correspond with overweight and obese BMIs, respectively.

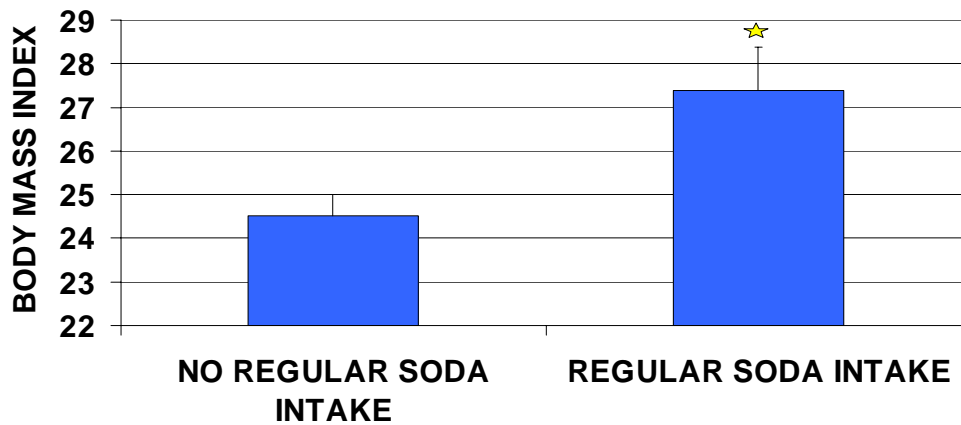


Figure 4. BMI of Participants Based on Soda Intake.

DISCUSSION

We originally planned to study Wisconsin Hmong-Americans adults of all ages. Recruitment of middle age and senior subjects was very difficult, due to employment schedules, family responsibilities, and willingness of people in the older age groups. In addition, all but 6 of the subjects were college students. Therefore, our findings are representative of the younger generation of Wisconsin Hmong-Americans who have graduated from high school. Our results indicate that this group of first and second generation Hmong refugees may be adapting to the American lifestyle that is associated with overweight, obesity and increased risk of chronic diseases, such as diabetes mellitus and cardiovascular disease. This group also seemed to be accepting of both traditional and American health care and may thus respond to preventive interventions if they are adequately explained. Our research needs further analysis and follow-up to address how the dietary patterns of this group may be increasing their health risks. Educational measures might be aimed at promoting preservation of the healthy aspects of the traditional Hmong lifestyle and reducing unhealthy eating and physical activity patterns developing in America.

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