

Utilizing Traditional Food Systems to Address Health Outcomes in Native Hawaiians

Aysha-Lynn K. W. Estrella

Syracuse University, Southern Plains Tribal Health Board



Introduction

Obesity and food insecurity pose a significant challenge for Native Hawaiians in Hawai'i. Historical factors, socio-economic disparities, and the shift towards Western diets have disrupted traditional food systems, which has led to adverse health outcomes.

Food sovereignty, "the right of peoples to healthy and culturally appropriate food produced through ecologically sound and sustainable methods,"⁹ offers a promising approach to address food insecurity and obesity. Gardening, specifically, can help improve access to fresh, locally grown produce, which can help address food insecurity as well as nutrition needs in a way that is sustainable and culturally appropriate.

Currently Hawai'i imports about 90% of their food and has a 5-7 day food supply⁵. This makes Hawai'i's food system incredibly vulnerable. A shift to traditional food systems like community and home gardening can increase food security for Native Hawaiians, especially since they are disproportionately burdened⁵.

Public Health Issue

Obesity: An adult with a BMI 30.0 or higher

- 1 in 5 children and 1 in 3 adults are affected
- Increases prevalence of Obesity-related non-communicable diseases¹³
 - Type 2 diabetes, coronary heart disease, stroke, cancer, asthma, and chronic obstructive pulmonary disease
- Accounts for \$172.74 billion of annual expenditures¹⁵
 - Individual increases in BMI over 30 is associated with \$253 of additional costs per person
- Undernutrition and obesity coexist and can be consequences of food insecurity¹

Food Insecurity: limited or uncertain access to adequate food

- 13.8 million households were food insecure at some time during 2020¹⁴
- Increases risk for multiple chronic diseases¹⁰
 - Type 2 diabetes, obesity, heart disease, and mood and sleep disorders

Hawai'i's Current Food System: 90% of food is imported and only has a 5-7 day food supply at any given time.

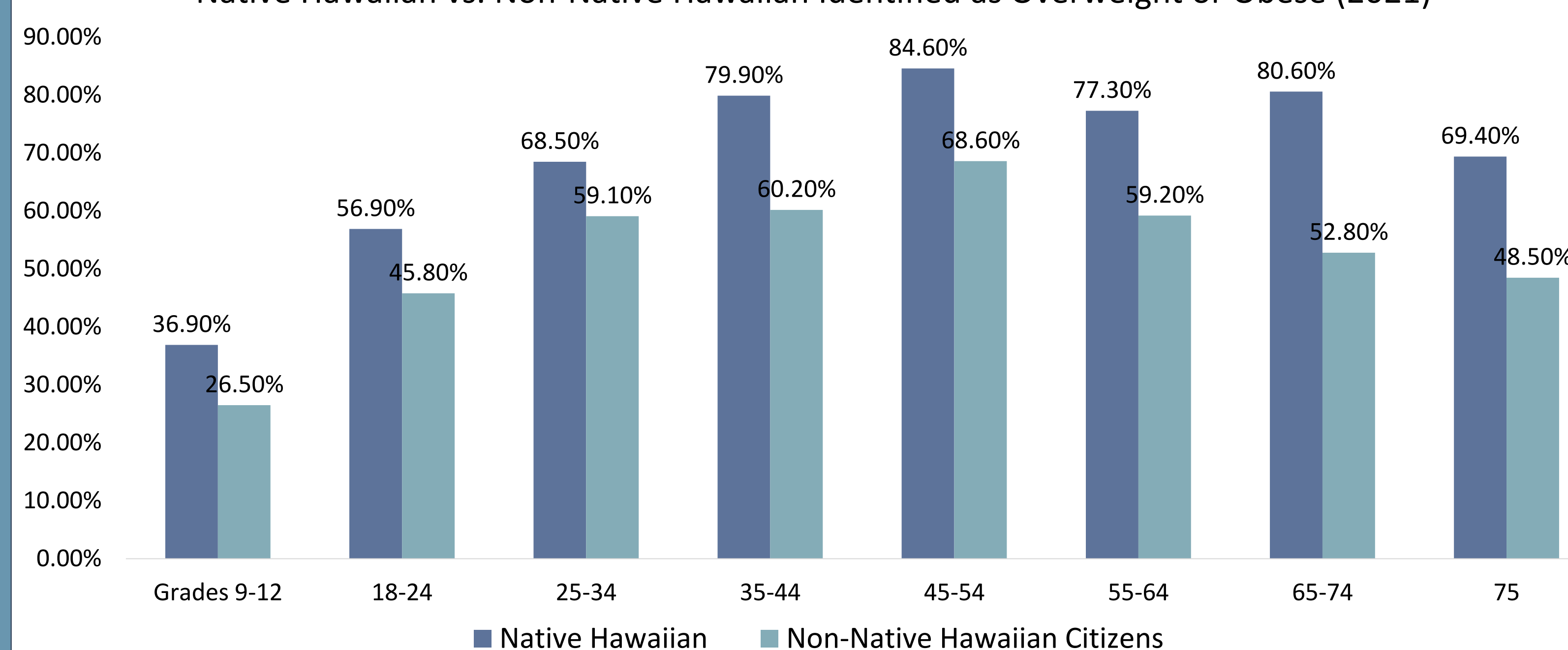
- Hawai'i is geographically the most remote island chain in the world, 2,506 miles from the continental U.S.
- Food import costs \$3 billion a year⁷
- In 2019, 0.43% of Hawai'i's GDP was from agriculture, farming, forestry and fishing¹¹
- Out of 7 million acres of land in Hawai'i, only 1.1 million is available for farming as of 2017¹¹

Target Population

Native Hawaiians living within the State of Hawai'i: any individual whose ancestors were native to the Hawaiian Islands prior to 1778

- Native Hawaiian ancestry is associated with an increased risk of obesity, Type-2 diabetes, and heart failure¹²
- Native Hawaiian prevalence for overweight/obesity in Hawai'i is 73.5%²
- 20.5% of Native Hawaiians and other Pacific Islander adults within the U.S. face food insecurity⁶
- Native Hawaiians facing food insecurity have higher odds of developing diabetes, cardiovascular disease, hypertension, and asthma

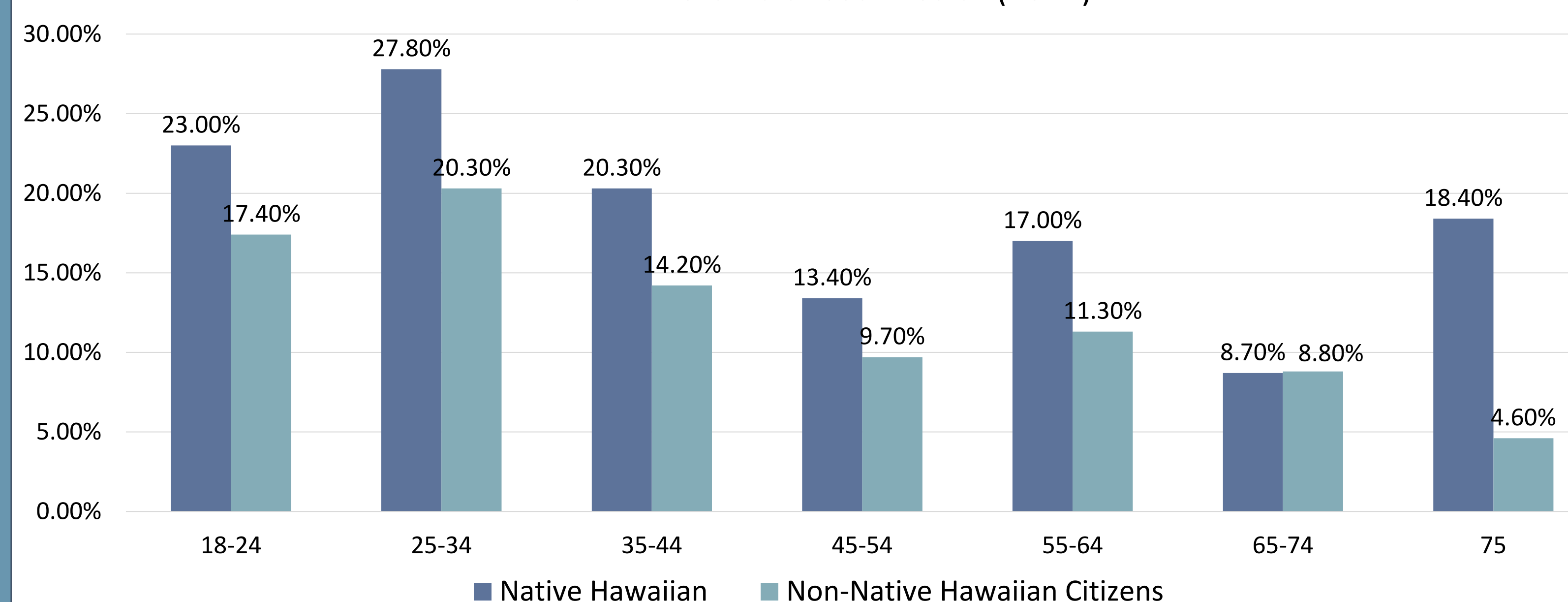
Native Hawaiian vs. Non-Native Hawaiian Identified as Overweight or Obese (2021)



Query results from adults who answered telephone survey questions: "How much do you weigh without shoes? How tall are you without shoes? (Overweight is defined as a BMI 25 to less than 30; Obese is defined as a BMI of 30 or more.)"

Data obtained from Hawaii's Behavioral Risk Factor Surveillance System (BRFSS)

Native Hawaiian vs. Non-Native Hawaiian Identified as Food Insecure "Can't Afford Balanced Meals" (2021)



Query results from adults who answered "Often" or "Sometimes" to the telephone survey question: "(I or we) couldn't afford to eat balanced meals." Was that often, sometimes, or never true for (you or your household) in the last 30 days?"

Data obtained from Hawaii's Behavioral Risk Factor Surveillance System (BRFSS)

Evolution of the THD Programs

Year	1987	1989	2002
Name	Moloka'i Diet Study	Wai'anae Diet Study	Uli'eo Koa
Key innovation	28-day isocaloric diet of traditional Hawaiian foods	21-day ad libitum THD	21-day ad libitum THD plus low-fat, low-protein recipes from other cultures plus exercise plus 2 months of 2 meals per week and exercise.
Participant profile	Individuals with elevated blood lipid profiles from the Moloka'i Heart Study	Obese and overweight individuals with medical conditions that could be helped by weight loss.	Normal to moderately overweight individuals that led physically active lifestyles.
Key finding from the study	Changing the source of calories can reduce serum lipids, glucose, and lower blood pressure and resolve or improve some chronic disease conditions.	With the high carbohydrate to fat/protein ratio, participants consumed fewer calories to feel full. They lost weight without feeling hungry and made other health gains.	The THD supports a regimen of high/intense exercise and is therefore appropriate for very active individuals as well as the sedentary.

Note: Adapted from "The traditional Hawaiian diet: a review of the literature," by R. Fujita, K. L. Braun, C. K. Hughes, 2004, *Pacific Health Dialog*, 11(2), p. 254.

Weight loss and obesity prevention programs implemented within the state of Hawai'i with the traditional Hawaiian diet and cultural values at the center of the intervention program. Reviews of the program showed that a key factor of sustaining weight loss and adhering to THD programs is access to fresh and affordable produce.

Recommendations for Health Equity

Support Local Food Production:

- Providing financial incentives, grants and technical assistance to local farmers to increase their production capacity and adopt traditional farming practices
- Greater land allocation for Native Hawaiians
- Establish agricultural cooperatives to promote traditional farming practices and planting of native crops

Enhance Agricultural Education and Training:

- Develop and fund agricultural education programs in public schools to promote farming knowledge, skills, and appreciation for local food
- Establish educational programs, training, and mentorship opportunities to encourage more individuals to start home gardens and navigate grant applications

Research and Development:

- Allocate funding for research and development programs focused on native crop farming, traditional farming techniques and innovative solutions to address food security and nutrition challenges
- Establish a comprehensive monitoring and evaluation system to assess the impact of food sovereignty initiatives on food security, obesity rates, economic development and environmental sustainability
- Use the gathered data to inform future policy adjustments and ensure the effectiveness of implemented programs

Discussion

As a Native Hawaiian, the discussion of food sovereignty is incredibly personal, especially as I see a loss of access to land and natural resources. Recently there has been talks of taking away land rights and providing housing for Native Hawaiians in the form of apartments to keep up with the housing demand and the urbanization of the state. This proposal would be detrimental to Native Hawaiian health. My research has shown that access and use of land can improve health. The use of traditional gardening practices and adopting a traditional diet can improve obesity and food insecurity rates as seen in other indigenous populations⁸. The purpose of my research is to highlight the importance of land to Native Hawaiians and encourage policy changes that will allow for the use and access to the natural resources, which will allow Native Hawaiians to adopt traditional gardening and diet practices.

References

Works used and referenced in this research poster can be found in the document linked at this QR code:

