

# Improving Diabetes Self-Management and Health Among the Native Hawaiian Population in Hawaii

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## Background

Live Healthy...Work Well (LHWW) is a competitive cooperative agreement administered by the US Department of Health and Human Services, Centers for Medicare & Medicaid Services (CMS).

A goal of LHWW is to examine how access to life coaching, pharmacist counseling, and other services impacts the self-efficacy and health of persons with diabetes.

The project, conducted on Oahu, Hawaii, includes many Native Hawaiians. Historically, health interventions with this population have been unsuccessful because of cultural incompatibility.\* The purpose of this poster is to determine if the LHWW was culturally compatible for Native Hawaiians by examining treatment effects by race.

## Research Questions

1. How does the diabetes health of working Native Hawaiian adults compare to other participants in the sample?
2. Does the impact of the treatment over six months vary between Native Hawaiians and other treatment participants?

## Treatment Components

### CULTURAL CHARACTERISTICS:

- Social Support
- Experiential
- Process Oriented

### ACCESS to:

- Life Coaching
- Medication Therapy Management (Pharmacist Counseling)
- Diabetes Education
- Nutrition Counseling
- 3 Mo. Fitness Membership

### REFERRALS to:

- Diabetes Classes
- Peer Support Groups
- Employment Supports

### REIMBURSEMENTS for:

- Diabetes-Related Medical Costs

## Baseline Eligibility Criteria

- Diagnosed with Diabetes OR Hemoglobin A1c Level of 6.5 or Higher

- 18-62 Years of Age

- Employed At Least 10 hrs/wk For 4 Consecutive Weeks

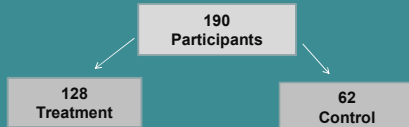
- Receiving Federal Minimum Wage or Higher

- Not Receiving Supplemental Security Income or Social Security Disability Insurance

- Living on Oahu

## Randomization Process

Stratified Permuted Block (k = 9) Based on Diabetes Type Unbalanced Random Assignment Ratio (T:C, 2:1 Ratio)



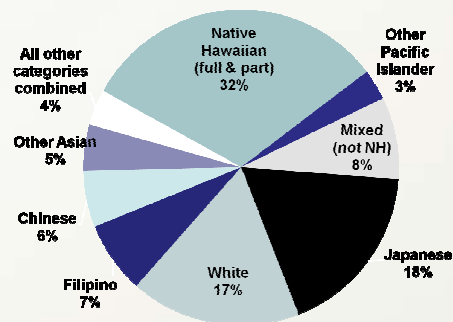
## Research Methods

Design	Longitudinal Randomized Controlled Trial Data Collected At Baseline and 6 Months
Key Variables	Diabetes Self- Efficacy (DES), Hemoglobin A1c, Body Mass Index (BMI)
Measures	• Surveys Completed by Participants • Biometrics Completed by Physician
Analysis	T-tests and Chi-Square to Compare Native Hawaiians to Other Participants in the Sample

## Demographic Profile of Participants

Mean Age	42.5 (Range 20 to 62)
% Female	62.6
% College Graduate	50.6
% Uninsured	2.6
% Type 2 Diabetes	85.8

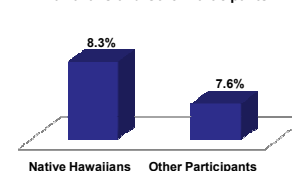
## Race /Ethnicity of Participants



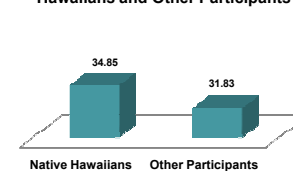
## Native Hawaiians in Poorer Health At Baseline

- Native Hawaiians had a higher hemoglobin A1c level than other participants (t = -2.78, p = .006; normal level <7%)
- Native Hawaiians had a higher BMI than other participants (t = -2.18, p = .03)
- Levels of diabetes self-efficacy did not differ between Native Hawaiian and other participants (t = .80, p = .42)

Hemoglobin A1c Levels Among Native Hawaiians and Other Participants



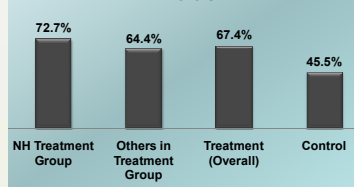
Body Mass Index Among Native Hawaiians and Other Participants



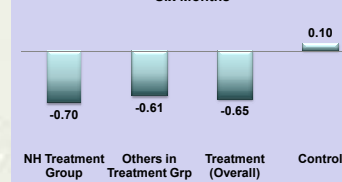
## Health Changes from Baseline to Six Months

- Health differences in A1c (t = -1.52, p = .13) and BMI (t = -2.95, p = .004) between Native Hawaiians and other participants disappeared at six months.
- Over six months, overweight and obese treatment participants lowered their BMI (t = -2.17, p = .03) and treatment participants improved their diabetes self-efficacy (X<sup>2</sup> = 4.58, p = .03). There were no changes in A1c (t = -.99, p = .32).
- The improvement in DES (X<sup>2</sup> = 1.32, p = .25) and BMI (t = .18, p = .86) over six months did not differ between Native Hawaiian treatment participants and other treatment participants.

Percentage of Participants Who Improved Their Diabetes Self-Efficacy Over Six Months



Mean Change in BMI Score Among Overweight and Obese Participants Over Six Months



## Summary and Next Steps:

- Native Hawaiians had a higher hemoglobin A1c and BMI than other populations in the study.
- Over six months, treatment members lowered their BMI and raised their diabetes self-efficacy over six months.
- Findings suggest the cultural compatibility of life coaching and diabetes support services for Native Hawaiian treatment participants who benefited to the same degree as other treatment participants.
- Further examination of longitudinal outcomes (at 12, 18 months) using statistical models (latent growth curve, mixed models) is needed.

\*Marr G, Burhanespanov, L, Corneil, C.M, et al. (1995). A research agenda for health education among underserved populations. Health Education Quarterly 22, 346-63.