HDPulse

An Ecosystem of Health Disparities and Minority Health Resources

Intervention IP-075: Ola Hou i ka Hula (Regaining health through hula): A Cultural-Based Cardiovascular Disease Prevention Program

Summary

This intervention was designed to test the effects of a hula-based intervention among 263 Native Hawaiians with uncontrolled hypertension. All participants received a brief culturally tailored heart health education before random assignment to the intervention or the control group. The intervention yielded greater reductions in systolic and diastolic blood pressure than control from baseline to six months. The 10-year CVD risk reduction was two times greater for the intervention group than the control group.

Overview

Purpose of Intervention:

To improve blood pressure control and reduce the risk of cardiovascular disease in Native Hawaiians and Pacific Islanders

Intervention Type:

Research-Tested — *Interventions with strong methodological rigor that have demonstrated short-term or long-term positive effects on one or more targeted health outcomes to improve minority health and/or health disparities through quantitative measures; Studies have a control or comparison group and are published in a peer-review journal; No pilot, demonstration or feasibility studies.*

Intervention Details

Intervention was Primarily Driven, Led, or Managed by:

Both Community and Academic/Clinical Researchers

Citations:

- Kaholokula JK, Look M, Mabellos T, Ahn HJ, Choi SY, Sinclair KA, Wills TA, Seto TB, de Silva M. A Cultural Dance Program Improves Hypertension Control and Cardiovascular Disease Risk in Native Hawaiians: A Randomized Controlled Trial. Annals of behavioral medicine : a publication of the Society of Behavioral Medicine. 2021 Oct 4;55(10):1006-1018.
  Relevance: Main Intervention

- Railey AF, Muller C, Noonan C, Schmitter-Edgecombe M, Sinclair K, Kim C, Look M, Kaholokula JK. Cost Effectiveness of a Cultural Physical Activity Intervention to Reduce Blood Pressure Among Native Hawaiians with Hypertension. PharmacoEconomics - open. 2022 Jan;6(1):85-94. Epub 2021 Aug 13. Relevance: Post-Intervention Outcomes

Adaptation of Another Research-based Intervention:

No

Contact Information

Primary Contact Affiliation:

University of Hawai'i

Intervention URL:

Not available

Results

Intentions

Improve minority health or the health of other populations with health disparities (e.g. rural populations, populations with low SES)

Intervention Primary Outcome:

Improve blood pressure control

Intervention Secondary Outcome:

Reduce 10-year risk of heart disease

Key Findings:

Based on intent-to-treat, the intervention yielded greater reductions in systolic (−15.3 mmHg ± 18.8) and diastolic (−6.4 mmHg ± 11.8) blood pressure than the education-only control (−11.8 mmHg ± 19.5 and −2.6 mmHg ± 11.3, respectively) from baseline to 6-month follow-up ($p < .05$). At 6 months, 43% of intervention participants compared to 21% of controls achieved a hypertension (HTN) stage <130/80 mmHg ($p < .001$). The 10-year cardiovascular (CVD) risk reduction was two times greater for the intervention group (−5.2% ± 10.9) than the education-only control group (−2.5% ± 9.5) based on the Framingham Risk Score calculator ($p = .02$). All improvements for intervention participants were maintained at 12 months. A majority of the intervention participants remained below 140/90 mmHg (69.5%) and 135/85 mmHg (55%) at 12-month follow-up, with 38.2% below 130/80 mmHg.

Statistical Method Used:

Intention-to-treat and complete case analyses were done. Multivariable logistic regressions calculated adjusted relative risk (95% confidence intervals comparing HTN stages mmHg) between groups. Outcome analyses were adjusted for baseline value of dependent variable, community site, and unbalanced variables. For intervention

group, same set of analyses were done using linear mixed-effects modeling to examine change from 6 to 12 months to determine maintenance of blood pressure improvements.

Evaluations and Assessments

Were Any of the Following Assessments Conducted (Economic Evaluation, Needs Assessment, Process Evaluation)?:

Yes

- **Economic Evaluation:** The hula-based program may be cost effective for low-resource community-based organizations. Maintenance of blood pressure reductions at 6 and 12 months in the intervention group contributed to potential cost effectiveness.

Demographic and Implementation Description

Diseases, Disorders, or Conditions:

Coronary Artery Disease, Hypertension

Race/Ethnicity:

Native Hawaiian or other Pacific Islander

Populations with Health Disparities:

People with Lower Socioeconomic Status (SES), Racial and Ethnic Minority Populations, Underserved Rural Communities

Age:

Young Adults (18 - 39 years), Middle-Aged Adults (40 - 64 years), Older Adults (65+ years)

Socio-demographics / Population Characteristics

Community Type:

Rural, Suburban, Urban / Inner City, Hawaiian homestead communities

Other Populations with Health Disparities:

Unspecified

Geographic Location:

Hawaii

Socio-Economic Status:

Low SES, Middle SES, High SES

Minority Health and Health Disparities Research Framework

		Levels of Influence			
		Individual	**Interpersonal**	**Community**	**Societal**
Determinant Types	**Biological**	✔			
	Behavioral	✔	✔		
	Physical / Built Environment	✔	✔		
	Sociocultural Environment	✔	✔		
	Health Care System				

Community Involvement

The community's role in different areas of the Intervention (Choices are "No Role", "Participation", and "Leadership"):

Design:

Leadership

Dissemination:

Leadership

Evaluation:

Leadership

Implementation:

Leadership

Outreach:

Leadership

Planning :

Leadership

Recruitment:

Leadership

Sustainability:

Leadership

Characteristics and Implementation

Intervention Focus Area:

Behavior Change, Psychosocial and sociocultural change

Disease Continuum:

Primary Prevention, Tertiary Prevention

Delivery Setting:

Clinic / Health Care Facility, Local Community (e.g. Barbershops, Beauty / Hair Salon, Laundromats, Food Markets, Community Centers)

Mode of Delivery:

In-person

Who delivered the Intervention?:

Community Health Worker/Promoters, Healthcare Professional (Physician, Nurse, Technician), Peer(s), Hula dance expert

Conceptual Framework

Intervention Theory:

Social Cognitive / Social Learning Theory, Social Identity Theory, Self-regulation theory

Intervention Framework:

Community Organization / Community Building, Social Determinants of Health Conceptual Framework, Social Ecological Model

Implementation

Intervention Study Design:

Individual Randomized Controlled Trial/Comparative (requires random assignment, a control/comparison group, and pre and post intervention outcome assessments)

Targeted Intervention Sample Size:

263

Actual Intervention Sample Size:

242

Start Year:

2015

End Year:

2019

Intervention Exposures

Duration of Intervention/How Long it Lasted:

4-6 months

Frequency of Intervention Delivery:

Weekly

Number of Sessions/Meetings/Visits/Interactions:

More than 10 Sessions

Average Length of Each Session/Meeting/Visit/Interaction:

1-2 Hours

Format of Delivery:

Group (e.g. Community leaders)

Highest Reading Level of Intervention Materials Provided to Participants:

Grade 8-9

Impact, Lessons, Components

Produced an impact or change beyond the primary or secondary outcome:

Yes

It also improved 10-year CVD risk and anti-hypertensive medication adherence.

Essential Aspects for Success:

The first three months (phase 1) of the intervention are essential and showed the greatest improvements in blood pressure. However, the latter three months of the intervention (phase 2) are likely necessary for long-term maintenance of blood pressure control.

Intervention Impact:

It also improved 10-year CVD risk and anti-hypertensive medication adherence.

Lessons Learned

Key Lessons Learned and/or Things That Could be Changed or Done Differently:

No changes recommended.

Insights Gained During Implementation

Insight Category	Insight Description
Cost of Implementing or Sustaining	Intervention cost was US$361/person. The 6-month incremental cost-effectiveness ratio (ICER) was US$103/mmHg reduction in systolic BP and US$95/mmHg in diastolic BP. The change in blood pressure at 12 months resulted in ICERs of US$100/mmHg reduction in systolic BP and US$93/mmHg in diastolic BP.
Logistics	A large enough space to accommodate 8 to 12 people for the hula lessons is needed.
Training / Technical Assistance	Kumu hula (hula experts) providing the hula lessons are needed to be trained on the intervention protocols and hula lessons necessary to achieve a moderate-to-high level of physical activity.
Staffing	An expert in hula (traditional Hawaiian dance) is needed along with a community health worker or peer educator.
Recruitment	We exceeded our recruitment goal because of community demand. However, we had challenges recruiting men. This may be due to lack of interest in a dance-based intervention and/or the fact that our recruiters and hula instructors were females. The men who did participate tended to be younger in age.

Intervention Components

Intervention Has Multiple Components:

Yes

Assessed Each Unique Contribution:

No

Products, Materials, and Funding

Expertise, Partnerships, and Funding Sources

	Used for Implementation	Needed for Sustainability
Expertise		
Hula (Hawaiian Dance)	Yes	Yes
Health Education / Health Literacy	Yes	Yes
Translation/linguistics	Yes	Yes
Partnerships		
Community groups (e.g. faith-based organizations, barbershops, beauty-salons, laundromats, food markets, community centers, cultural associations, tribal groups)	Yes	Yes
Health care facilities (local clinics)	Yes	Yes
Funding Sources		
Public funding (e.g., federal, state or local government)	Yes	No

Product/Material/Tools

	Tailored For Language	Language(s) if other than English	Material
Outreach/Recruitment Tools			
Publicity Materials (e.g. Posters, Flyers, Press Releases)	No		Attachment available for request at the bottom of the page.
Participant Educational Tools			
Brochures/Factsheets/Pamphlets	No		Attachment available for request at the bottom of the page.
Brochures/Factsheets/Pamphlets	No		Attachment available for request at the bottom of the page.
Brochures/Factsheets/Pamphlets	No		Attachment available for request at the bottom of the page.
Brochures/Factsheets/Pamphlets	No		Attachment available for request at the bottom of the page.
Measurement Tools			
Standardized Instrument/Measures	No		Attachment available for request at the bottom of the page.

Implementation Materials and Products

	Material
Implementation/Delivery Materials	
Coordinator or Facilitator’s Guides	Attachment available for request at the bottom of the page.
Training/Operations manual	Attachment available for request at the bottom of the page.
Implementation/Output Materials	
Social/traditional media publicity/news coverage, Dissemination Video	https://www.youtube.com/watch?v=jVCUah3fids
Social/traditional media publicity/news coverage	https://manoa.hawaii.edu/news/article.php?aId=10180
Social/traditional media publicity/news coverage	https://www.civilbeat.org/2019/09/fighting-heart-disease-with-hula/

Articles Related to Submitted Intervention

	Article
Reports/Monographs	
Assessment report on NHPI health featuring our hula-based intervention	Attachment available for request at the bottom of the page.
Additional Articles	
Evaluation	Attachment available for request at the bottom of the page.
Cost-related	Attachment available for request at the bottom of the page.
Methodology	Attachment available for request at the bottom of the page.

Materials Available for Request

- Ola Hou recruit flyer example.3mth.pptx
- Ola Hou Participant Packet Lesson 1.pdf
- Ola Hou Participant Packet Lesson 2 (1).pdf
- Ola Hou Participant Pack Lesson 3.pdf
- Student_Work_Book.pdf
- All forms_1 14 16.pdf
- Facilitator_Guide.pdf

- KaHOLO MOP.pdf
- NPHI HlthAssessmentPriorities Rpt2020.pdf
- KaHOLO Outcomes paper 2021.pdf
- Cost Effectiveness of a Cultural Physical Activity Intervention to Reduce Blood Pressure Among Native Hawaiians with Hypertension.pdf
- art%3A10.1186%2Fs12889-017-4246-3.pdf