

Children's Healthy Living Program for Remote Underserved Minority Populations in the Pacific Region

Dededo



United States Department of Agriculture
National Institute of Food and Agriculture
Agriculture and Food Research Initiative (AFRI)
No. 2011-68001-30335

Dededo Baseline Obesity Prevalence Survey Results

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Executive Summary



I. Executive Summary

Introduction to the Report

The CHL program utilizes three major strategies towards its goals: 1) training, 2) extension – intervention, and 3) research. The purpose of this document is to report on the measures of these three strategic areas in your community at the beginning (baseline) of the project. It includes information about CHL training, and the research results of the Children’s Healthy Living Program Survey at the individual and household level. This report includes only the baseline data. The results of the CHL-wide intervention study examining changes between baseline and 24-month data will be available later in a separate report.

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Thank you for your interest and efforts for children’s health!

Suggested Citation:

Mark Acosta, L. Robert Barber Jr., and Rachael T. Leon Guerrero, editors. 2017. Children’s Healthy Living Program for Remote Underserved Minority Populations in the Pacific Region: Dededo Prevalence Survey Results. College of Natural & Applied Science, University of Guam, Mangilao, Guam.

Children's Healthy Living Program (CHL)



II. Children's Healthy Living Program (CHL)

The Children's Healthy Living Program for Remote Underserved Minority Populations in the Pacific Region (CHL) is a partnership among the remote Pacific jurisdictions of Alaska; American Samoa; Commonwealth of the Northern Mariana Islands (CNMI); the Federated States of Micronesia (FSM), the Republic of the Marshall Islands (RMI), the Republic of Palau; Guam; and Hawaii to study childhood obesity among Pacific children, ages two to eight years old.

The program is funded by the United States Department of Agriculture (USDA), National Institute of Food and Agriculture, and the Agriculture and Food Research Initiative (Grant no. 2011-68001-30335). CHL is coordinated from the Department of Human Nutrition, Food and Animal Sciences in the College of Tropical Agriculture, at the University of Hawaii at Manoa with contracts to the University of Guam, University of Alaska Fairbanks, American Samoa Community College, Northern Marianas College, and the University of Hawaii Cancer Center.

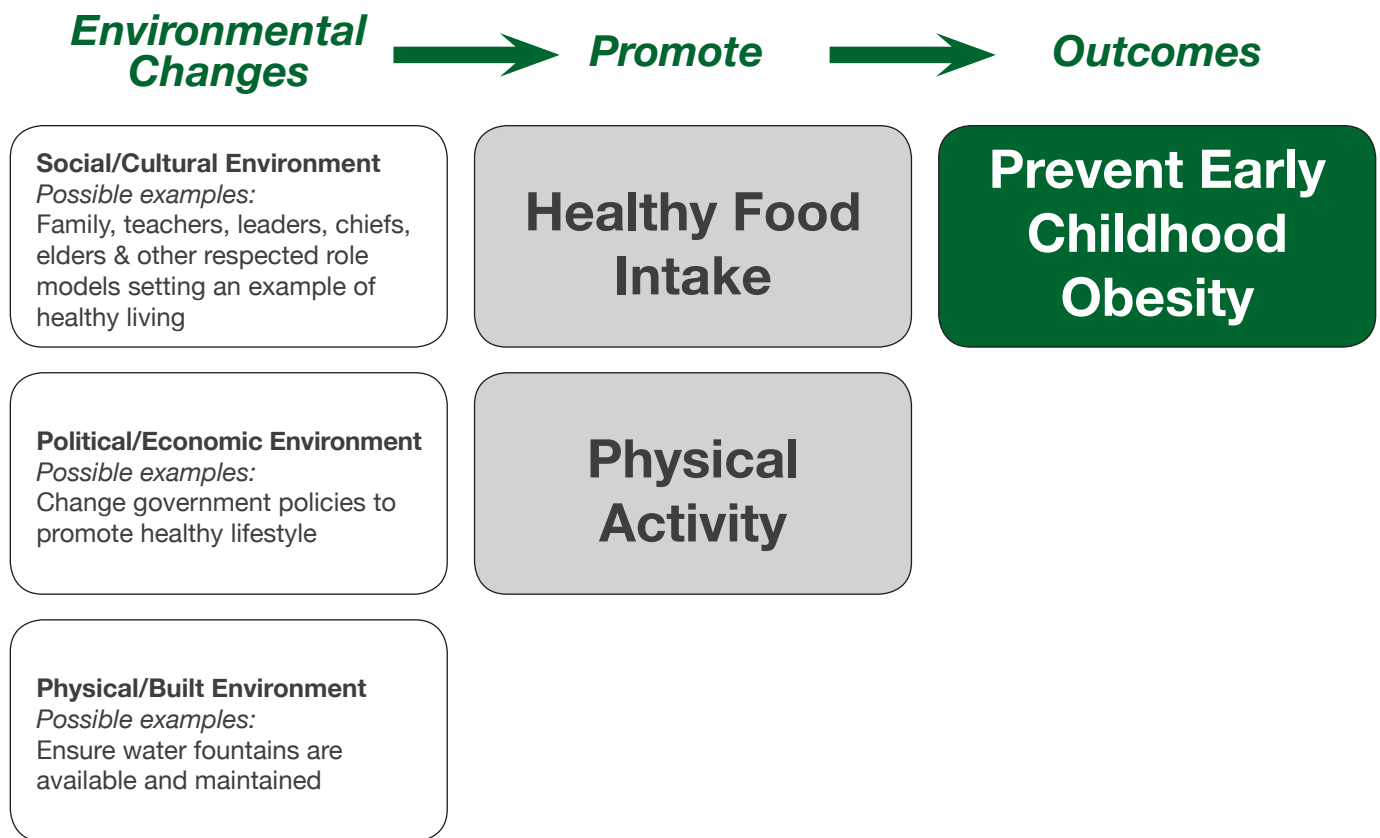
The goal of CHL is to help to create a social, cultural, political, economic, and physical environment in the Pacific Region that supports active play, physical activity, and eating healthy food, in order to promote health. In partnership with participating communities, our mission is to elevate the capacity of the region to build and sustain a healthy food and physical environment to help maintain healthy weight and prevent obesity among young children in the Pacific region.

CHL strived for the following behavior targets:

1. Lower weight and BMI gain
2. Increased physical activity
3. Higher fruit and vegetable intake
4. Increased sleep
5. Higher water intake
6. Reduced consumption of sugar-sweetened beverages (SSB)
7. Reduced TV/video viewing
8. Lower prevalence of acanthosis nigricans (AN)

Figure 1 illustrates CHL's model to influence multiple aspects of the environment to promote healthy food intake and physical activity in young children ages two to eight years old (Braun et al., 2014).

Figure 1. CHL Conceptual Model



CHL Research Activities



III. CHL Research Activities

A. CHL Research Aims and Design

CHL measured two to eight-year-old children to identify young child overweight and obesity, acanthosis nigricans, and health behavior information about sleep, physical activity, screen time, eating of fruits and vegetables, and consumption of sugar-sweetened beverages and water.

B. Research Methods

Study Design

The cross-sectional CHL study design collected data on body size, functional outcomes of obesity (acanthosis nigricans), food intake, physical activity, lifestyle behavior which included screen time, and demographics (baseline or prevalence). These were measured through anthropometry (height, weight, and waist circumference), food and activity logs, questionnaires, accelerometry, and visual inspection (of the neck).

Data were collected between October 2012 and September 2013 in American Samoa, Alaska, Commonwealth of the Northern Mariana Islands (CNMI), Guam and Hawaii, and between October 2013 and June 2015 in FAS.

This CHL research includes the data from the Federated States of Micronesia (Yap, Chuuk, Kosrae, and Pohnpei), the Republic of the Marshall Islands, and the Republic of Palau; referred to collectively in CHL as the Freely Associated States (FAS), and all other CHL jurisdictions -- Alaska, American Samoa, CNMI, Guam, and Hawaii.

Selection of Communities

Communities were identified in Alaska, American Samoa, CNMI, Guam and Hawaii using the 2000 U.S. Census tract data (U.S. Census Bureau). In the FAS, 2010 country census data were used to inform selection of sites. The community eligibility criteria included population size of >1000 (except for FAS), >25% of the population of indigenous/native descent (except 15% in Alaska due to no targeted census tract within the CHL catchment area with a population of more than 1000 having more than 25% indigenous/native), and >10% of the population under age 10 years. Additional selection criteria included adequate settings for measuring children (e.g., schools), reasonable accessibility for the CHL team, and geographic representation for FAS.

Longitudinal Study

For the study of the effectiveness of the CHL intervention in American Samoa, CNMI, Guam and Hawaii, communities were selected as matched pairs. Four communities were selected (two matched-pairs). Two communities were selected (1 matched-pair) in Alaska. The matching included similar criteria as above, as well as community characteristics such as access to food stores and ethnic distribution. In each pair, one community was randomly assigned to intervention and the other to a delayed optimized intervention (community will receive intervention at the end of the main study). Two additional non-matched communities (third and fourth for Alaska and fifth and sixth for other jurisdictions) were selected from the eligible list of communities to serve as temporal indicators.

A second round of measurement occurred around 24-months from the baseline in Alaska, American Samoa, and Commonwealth of the Northern Mariana Islands (CNMI), Guam, and Hawaii to examine if CHL intervention activities in those jurisdictions were effective. Smaller amounts of data were collected from the “temporal” communities. The temporal communities served to show changes in BMI over time, in communities that did not have any CHL activities.

This report includes only the baseline data and a few questions that were not in the baseline survey that were collected at a second data collection period in some jurisdictions. The results of the CHL-wide intervention study examining changes between baseline and 24-month data will be available later in a separate report.

Selection of Participants

Recruitment activities involved schools and other community venues and activities. Recruitment took place at Head Start sites, preschools, day care centers, kindergartens, WIC sites, and other appropriate venues (e.g., parks and community recreation centers). Recruitment efforts, led by CHL staff in each jurisdiction, involved close collaboration with community liaisons (e.g., teachers, school staff, program directors, matai, mayors) to enhance participation. The teams in all jurisdictions tailored the recruitment strategies to work effectively with the stakeholder organizations while meeting recruitment goals of CHL. *NOTE: The following numbers are based on consented, rather than those who completed the measures.***

Table 2: Number of Participants Consented in each Jurisdiction for CHL Research

Jurisdiction	Number Consent
Alaska <i>Anchorage, Fairbanks, Kenai, Mat-Su Valley</i>	713
American Samoa <i>Fagaitua/Pagai/Amaua/Auto/Utusia, Leloaloe/Aua, Onenoa/Tula/Alao, Aoloau/Aasu</i>	978
CNMI <i>Koblerville/San Antonio, Oleai, Kagman, San Roque, Saipan, Village</i>	924
Guam <i>Yigo, Yona/Talafofo, Agat/Santa Rita, Sinajana and Agana Heights, Dededo</i>	885
Hawaii <i>Nanakuli, Waimanalo, Hilo, Wailuku, Kauai, Molokai</i>	988
CHL Intervention Study Data (total)	4,498

Jurisdiction	Number Consent
Freely Associated States	
Pohnpei <i>Nett, Mand, Sekere, Wenik</i>	212
Republic of the Marshall Islands <i>Majuro, Ebeye (Kwajalein atoll), Ailinglaplap</i>	218
Palau <i>Koror, Ngaraard, Melekeok, Airai</i>	214
Yap <i>Rull, Tomil, Weloy, Ulithi</i>	205
Kosrae <i>Tafunsak, Lelu, Sansrik, Malem, Utwe/Walung</i>	207
Chuuk <i>Weno (Sapuk, Iras), Tol, Tonoas, Uman</i>	231
FAS Prevalence Data (total)	1,287
CHL Total (CHL Intervention + FAS Prevalence)	5,785

CHL Community Activities Overview



IV. CHL Community Intervention Strategies and Activities

A. Target Behaviors, Strategies, and Cross Cutting Functions

CHL's goal was to achieve healthy weight among young children (ages 2 to 8 years) by promoting **six target behaviors**:

1. Increase consumption of fruits and vegetables, preferably locally grown fruits and vegetables
2. Increase physical activity
3. Increase water consumption
4. Increase hours of sleep
5. Decrease consumption of sugar sweetened beverages (SSB)
6. Decrease screen time

To promote these target behaviors in communities with young children, the CHL team conducted community meetings, reviewed literature, and worked together to identify strategies and activities that would be appropriate for young children and their caregivers. The culture and environment of children and families also were taken into account.

Based on these data, CHL jurisdictions agreed to engage in **six strategies** to promote the target behaviors.

1. Introduce, enhance, and support policy for healthy eating and physical activity of 2 to 8 year-old children
2. Engage 2 to 8 year-old children in growing and eating local healthy foods
3. Train and support role models to promote CHL's six target behaviors
4. Increase accessibility of environments for safe play and physical activity for young children and their families
5. Increase accessibility of drinking water for young children
6. Provide other education and training related to CHL's six target behaviors

These six intervention strategies were collapsed into **four cross-cutting functions**, signifying the four action areas of the intervention:

1. Strengthen and actualize school wellness policies
2. Partner and advocate for environmental (social and built) change
3. Promote the CHL message
4. Train trainers (capacity building)

Specific recommended activities under each cross-cutting function were provided. Relationships between these activities and the CHL's behavior-change objectives are shown in Table 2. Specific types of activities and venues identified for use in Guam interventions are shown in the Areas of Focus Column.

Table 2. Relationship of Areas of Focus to CHL Cross-Cutting Function and Target Behavior

Cross-Cutting Function	Area of Focus	Target Behavior Addressed
Review Assessment Data for the Policy and Physical Environment related to the 6 CHL behaviors		
a) Review preschool wellness policy assessment data to identify training needs.	Preschool Wellness Policies & Trainings	All behaviors (Increase fruit & vegetable consumption; Increase physical activity; Increase water consumption; Increase sleep; Decrease sugar sweetened beverage consumption; Decrease screen time)
i) Review preschool wellness policy assessment data to identify policy gaps		
ii) Address policy gaps with preschool administration	Preschool Wellness Policies & Trainings	All behaviors
iii) Assess policy implementation quality (ID strengths and weaknesses)	Preschool Wellness Policies & Trainings	All behaviors
iv) Work with preschool administrators to address weaknesses in policy implementation	Preschool Wellness Policies & Trainings	All behaviors
b) Review CAT (community assessment toolbox) data related to the physical environment to identify areas for advocacy.	Community Gathering Spaces & Schools	<ul style="list-style-type: none"> • Increase Fruit & Vegetable consumption • Increase Physical Activity • Increase Water consumption • Decrease sugar sweetened beverages
i) Assess the physical environment using the CAT		
ii) Review CAT data related to the physical environment to identify areas for improvements and advocacy	Mayors' Offices, NCD, and Schools on: Community Gathering Spaces & School Grounds	<ul style="list-style-type: none"> • Increase Fruit & Vegetable consumption • Increase Physical Activity • Increase Water consumption • Decrease sugar sweetened beverages
iii) Improve CAT-indicated physical activity environments	Mayors' Offices, NCD, and Schools on: Community Gathering Spaces & School Grounds	<ul style="list-style-type: none"> • Increase Fruit & Vegetable consumption • Increase Physical Activity • Increase Water consumption • Decrease sugar sweetened beverages

Cross-Cutting Function	Area of Focus	Target Behavior Addressed
iv) Advocate (with partners, stakeholders, role models, coalitions, etc.) for CAT-indicated physical activity environment changes	NCD, Mayors' Offices & Schools; Community Gathering Spaces & Schools	<ul style="list-style-type: none"> • Increase Fruit & Vegetable consumption • Increase Physical Activity • Increase Water consumption • Decrease sugar sweetened beverages
Partner and Advocate for Environmental Change		
a) Work with existing community organizations and coalitions and/or form new coalitions to advocate for:	NCD, Mayors' Office & Schools; Community Gathering Spaces & Schools	
i) Better access to parks that are safe and inviting	NCD, Mayors' Offices & Schools; Community Gathering	Increase Physical Activity
ii) Better access to clean water	NCD, Mayors' Offices & Schools; Community Gathering	Increase Water consumption
iii) Safer environments for walking, biking, etc. (e.g., bike lanes/racks, sidewalks, greenways)	NCD, Mayors' Offices; Community Gathering Spaces	Increase Physical Activity
iv) Better food placement in stores	NCD	<ul style="list-style-type: none"> • Increase Fruit & Vegetable consumption • Increase Physical Activity • Increase Water consumption • Decrease sugar sweetened beverages
v) Gardens and hydroponics	NCD, Mayors' Offices & Schools; School Grounds and Families	Increase Fruit & Vegetable Consumption
b) Partner with existing entities to purchase or obtain sponsorship for: i) Water in the preschools and childcare centers	Mayors' Offices	Increase Water Consumption
ii) Gardening supplies for preschool kids	Community Gathering Spaces, NCD & CE&O: Schools & Families	Increase Fruit & Vegetable Consumption
iii) Sports/play equipment for preschool kids	Schools; SPARK & Food Friends & Mighty Moves	Increase Physical Activity
iv) Campaigns and messages	NCD, Mayors Office & Schools	All behaviors

Cross-Cutting Function	Area of Focus	Target Behavior Addressed
Promote the CHL Message		
a) Support Role Models to deliver CHL messages in various ways (using the CHL role model curriculum as a guide)	NCD, Mayors' Offices & Schools: Support Community Role Models	All behaviors
b) Enhance existing social marketing campaigns in the intervention communities, and/or develop low-cost local social marketing campaigns related to the 6 CHL behaviors	NCD, Mayors' Offices & Schools: Support Community Role Models	All behaviors
c) Advertise CHL or other activities that promote 6 CHL target behaviors	NCD, Mayors' Offices & Schools: Support Community Role Models	All behaviors
Train the Trainers		
a) Train individuals to promote gardening in preschools and communities	Gardening Curriculum Development, Workshops, and Partnerships	Increase fruit & vegetable consumption
b) Train individuals to lead interactive, hands-on sessions to promote the 6 CHL behaviors	Workshops on Curriculum	All behaviors
c) Train individuals to organize and lead family-based activities that support the 6 CHL behaviors (park clean-ups, hikes, cooking sessions, etc.)	NCD, Mayors' Offices and Community Activities	All behaviors
d) Provide TA to preschool and childcare staff on wellness policies	Preschool Wellness Policies & Trainings	All behaviors
e) Train childcare providers and preschool teachers in curricula related to 6 CHL behaviors	Preschool Wellness Policies & Trainings	All behaviors to some extent – emphasis on Increasing Fruit & Vegetable Consumption and Increasing Physical Activity
f) Train role models (community champions, role celebrities, role models)	NCD, School Teachers and Mayors' Offices: Support Community Role Models	All behaviors

B. Guam Intervention Phases and Focus for Sustainability

CHL aimed to put the health and well-being of young children in the forefront of our communities and help the communities and local organizations move together to create an environment that enhances the health and well-being of young children. The CHL interventions for Guam's four communities were divided into two phases to accommodate the project's research goals. These two phases were; the initial intervention, and the delayed optimized intervention.

The initial intervention was implemented in the Yona/Talofofu, and Yigo communities immediately following the baseline data collection that is the subject of this report. The delayed optimized intervention was conducted in the Sinajana/Agana Heights and the Agat/Santa Rita communities following the 24-month data collection period that followed the initial intervention. These interventions used common components with the delayed optimized intervention communities, like Yigo, benefiting from the lessons learned in the initial intervention.

In order to create a lasting impact and increase the sustainability of Guam's CHL efforts we sought community agencies and organizations whose mission and activities aligned with CHL's goals to partner with. To do this CHL strove to convene, facilitate, and unite people, groups, and organizations concerned about the health and well-being of young children in efforts to support obesity prevention strategies in their work. We tried to increase community readiness and the communities' capacity to advocate and make environmental and policy changes that enhance the health and well-being of young children and their families. We were guided by the belief that it is important to identify, empower, and support role models in the community and persuade or motivate adults in the community, that have children under their care, to be better role models of healthy behaviors.

The activities, strategies, and results of the initial and optimized interventions and the results of the 24-month data collection effort and analysis will be provided in a later report to follow this report on the baseline data collection.

The CHL Training Program

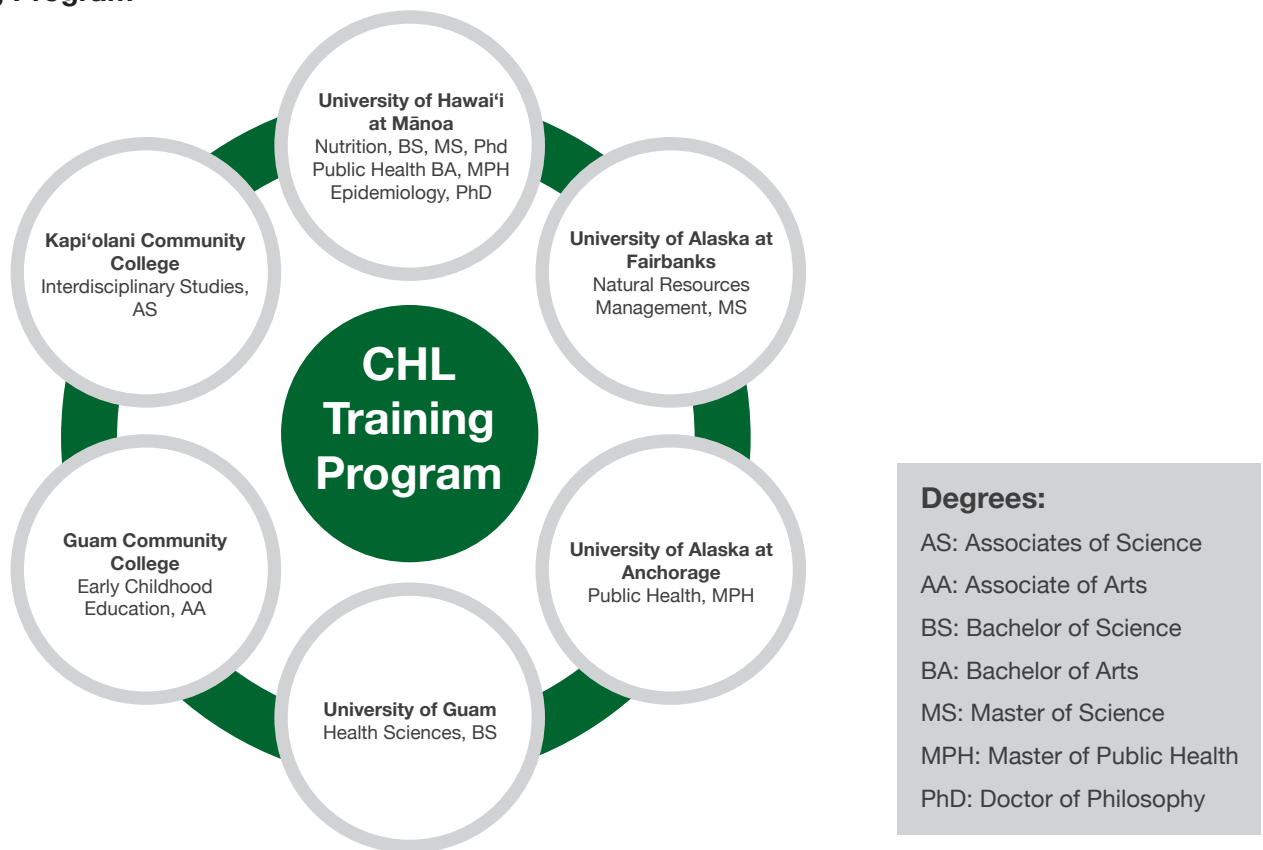


V. The CHL Training Program

A. Training Program Objectives

The development of the CHL Training Program (CHL-TP) is an essential component of CHL’s multilevel approach to prevent childhood obesity. Approximately, one third of the program’s resources are invested in training. The CHL-TP’s first objective is to train 22 United States Affiliated Pacific Region students in child obesity prevention through selected academic degree programs. A second objective is to enhance the students’ academic education with training on childhood obesity prevention strategies and tools, through the offering of culturally appropriate and regionally relevant obesity prevention-related courses and programs.

Figure 2. Institutions, academic program areas and degrees in the Children’s Healthy Living (CHL) Training Program



From: Fialkowski MK, et al. Indigenous Workforce Training by the Children’s Healthy Living Program (CHL) to Prevent Childhood Obesity in the Underserved US Affiliated Pacific Region. *J Health Care Poor Underserved*. 2015; 26(2 Supplement): 83-95.

B. Training Program Partnerships

The CHL-TP is a collaborative effort with institutions across the Pacific. Students selected for the program have attended courses at the University of Hawai'i at Mānoa, the University of Guam, Guam Community College, Kapi'olani Community College, and the University of Alaska at Fairbanks and Anchorage (Figure 2).

Partner jurisdictions created selection committees who screened and interviewed student applicants and identified the top candidates for the scholarship awards. Two students from each of Alaska, American Samoa, CNMI, Chuuk (FSM), Guam, Hawai'i, Kosrae (FSM), Pohnpei (FSM), the Republic of the Marshall Islands, the Republic of Palau, and Yap (FSM) were selected for a scholarship to enroll in a degree program at one of the partner institutions (Table 1).

C. Training Program Accomplishments

The CHL-TP developed a series of six 1-2 credit seminars that addressed the multiple causes of obesity and provided evidenced-based strategies for childhood obesity prevention. Conducting seminars using an online collaborative approach provided an opportunity for all the CHL trainees to engage in distance learning together while strengthening their bond as a cohort and their ties to the CHL-TP. The CHL-TP also partnered with the University of Hawai'i at Mānoa Public Health Program to allow CHL Trainees to take an indigenous health seminar as a part of their CHL seminar experience.

In addition to the CHL-TP seminar curriculum, CHL modified curriculum for the Food Science and Nutrition (FSHN) course, The Science of Human Nutrition (FSHN 185), offered both through the University of Hawai'i at Mānoa and the University of Hawai'i Outreach College. FSHN 185 utilizes an online platform, which allows for flexible and adaptive nutrition education delivery across the vast region of the Pacific and beyond. The modifications broadened the curriculum to reflect the unique environment and cultural diversity of the Pacific region. New modifications incorporate nutrition education with aspects of commonly consumed food and their significance in societal structure. To further support this Pacific adapted introductory nutrition course, a Pacific Food Guide was developed to help students enrolled in FSHN 185, to better connect the traditional foods of the Pacific with concepts of nutrition.

Other new curriculum and education materials developed by the CHL-TP included a comprehensive workshop to provide standardized measurement training to staff and field workers conducting measurements in anthropometry, dietary intake, physical activity, and acanthosis nigricans. The measurement training workshops conducted by CHL were successful in standardizing over 100 measurers in 5 years across the Pacific region from Alaska to Micronesia. Workshop materials will continue to be utilized for standardization of educators and staff conducting regional measurements such as Head Start staff and community workers and will be part of future curriculum being planned.

Students accepted into the CHL-TP conducted a CHL project in their home jurisdictions that supported childhood obesity prevention. Students at the graduate level blended these projects with their final theses and dissertations. All trainees were required to present their projects and budgets to a selected project committee for approval prior to implementation. Upon completion of their project all students were required to submit a formal write up and conduct an oral presentation. Examples of projects completed by graduates of the CHL-TP are outlined in Table 1.

As of this report, 24 students have participated in the CHL-TP. Two Trainees dropped out of the program after their first year, due to personal reasons. The two vacant scholarship positions were offered to two other qualified Trainees from those respective jurisdictions. Two Trainees were released from

the program due to poor performance. To date, 6 students (5 graduate and 1 undergraduate) have completed the CHL-TP and attained their degrees (Table 1). One graduate-level Trainee from Alaska is expected to complete a MPH degree in the Spring of 2016. One graduate level Trainee from American Samoa is working towards a PhD in Epidemiology and is expected to complete the degree in Summer of 2016. Two graduate level Trainees from CNMI are working on their MPH degrees. Three undergraduate Trainees from American Samoa, Chuuk, and Kosrae are expected to graduate by Spring 2016 with Bachelor's degrees in Public Health (2) and Nutrition (1), respectively. One undergraduate Trainee from Yap is expected to graduate with a Bachelor's degree in Nutrition by Summer 2016. Two undergraduate Trainees from Pohnpei and Chuuk are expected to graduate by Fall 2017 and Fall 2018, respectively, with Bachelor's degrees in Health Science. One undergraduate Trainee from Palau transferred out of Health Science and is working on a Bachelor's in Sociology. However, the fourth, an undergraduate Trainee from the Marshall Islands dropped out.

Table 1. CHL Training Program Graduates by jurisdiction, degree type, and project description

Graduate Students			
Student Name	Jurisdiction	Degree Name/ Type	Project Description
Tanisha Aflague	Guam	PhD, Nutrition	To examine the willingness to try fruit and vegetables (F&V) and F&V intake among children, 3-12yrs, attending a cultural immersion camp compared to children from a camp without cultural immersion
Monica Esquivel	Hawaii	PhD, Nutrition	To build evidence on the effectiveness of Child Care Center wellness policies that promote intake of nutrient-dense food, healthy eating habits and nutrition education to improve child diet intake and prevent childhood obesity in Hawaii
Lenora Matanane	Guam	MS, Nutrition	To test whether access and availability to fruits and vegetables in food stores is associated with childhood overweight/obesity prevalence in selected Guam communities
Ashley Morisako	Hawaii	MPH, Native Hawaiian and Indigenous health	To outline the community engagement process instilled to effectively implement and evaluate a garden-based learning curriculum targeted for preschoolers in Hawaii in order to reduce and prevent childhood obesity
Ron Standlee-Strom	Alaska	Management MS, Natural Resource	To determine factors mediating the delivery of effective nutrition education as perceived by educators and Alaskan program participants

Undergraduate Students			
Student Name	Jurisdiction	Degree Name/ Type	Project Description
Srue Wakuk	Kosrae	BA, Public Health	To evaluate how the Women in Farming Kosrae (WIFK) Project empowers women and improves health
Trisha Johnson	Pohnpei	BS, Food Science and Human Nutrition	To determine traditional fruits and vegetables consumed by young children in Pohnpei, Federated States of Micronesia
Shra Kedi	Republic of the Marshall Islands	BA, Public Health	To evaluate school wellness policies on Majuro using the CHL Wellness Policy Evaluation Tool/Rudd School Wellness Policy Evaluation Tool

PhD = Doctor of Philosophy; MS = Master of Science; MPH = Masters of Public Health; BS = Bachelor of Science; BA = Bachelor of Arts

D. Long-term Plans

The CHL program is committed to exploring other funding opportunities for Trainees who will not complete their degree programs within the life of the CHL grant. The CHL-TP will also serve as a source for professional collaboration and career networking for all of the Trainees. In addition, the CHLTP plans to do long-term follow-up of the Trainees to gather information on the career trajectory of graduates.

Curriculum developed by the CHL-TP will continue to be offered through multiple venues. The Pacific adapted online FSHN 185 has been included as one of the options offered to students at the University of Hawai‘i at Mānoa in the Fall, Spring, and Summer semesters. This class has also been designated as meeting the Hawaiian, Asian, and Pacific Issues General Education Focus area for the University of Hawai‘i system, including the University of Hawai‘i Outreach College. The nutritional education resource, the Pacific Food Guide, has also been developed into a web resource available for free at www.manoa.hawaii.edu/ctahr/pacificfoodguide

The series of seminars developed for the CHL Trainees on the causes of childhood obesity and evidenced-based strategies for childhood obesity prevention are currently being adapted into a comprehensive distance-learning platform so that it may be offered through a CHL Summer Institute. The online platform of the CHL Summer Institute will allow for a wider audience to benefit from its unique and important content. The CHL Summer Institute will offer various courses and modules for credit and non-credit through the University of Hawai‘i Outreach College. The University of Hawai‘i Outreach College allows for non-University of Hawai‘i students to access this unique training opportunity at in-state tuition rates.

For further information on the CHL Training Program please see the following resources:

- Fialkowski MK, et al. Indigenous Workforce Training by the Children's Healthy Living Program (CHL) to Prevent Childhood Obesity in the Underserved US Affiliated Pacific Region. *J Health Care Poor Underserved*. 2015; 26(2 Supplement): 83-95.
- CHL Training Program available at: <http://www.chl-pacific.org/trainingeducation/program-overview>

Conclusions, Summary of Baseline Prevalence Study and Appreciation of Community Support



VI. Conclusion / Summary of Prevalence Study

The purpose of this report is to inform the community of the CHL research that was conducted in Dededo during 2012 and 2013. It is a “snapshot” of the community during this time period. It is hoped that this report will help the community in designing programs, allocating resources, and advocating for policies that increase the health and well-being of young children in Dededo.

Nearly 15.59% of participants in Dededo reported that they ran out of money for food “most times” or “always” each month and 88.71% reported they received some type of food assistance. This is a concern as 70.88% of participants’ household income was <\$20,000.

We would like to acknowledge the guidance and support the CHL team received from the CHL Guam Advisory Committee. Their expertise and willingness to collaborate provided the CHL team with needed community input to help achieve better young child health in Guam.

The CHL team would like to express our gratitude and appreciation to all the children, parents, caregivers, teachers, community members and partners who assisted in the collection of this information. Without the support and participation of the community this report would not exist.

Dededo Community Report



VII. Dededo Baseline Community Report

The total number of responses for each question may not match the total number of consented participants. Parents identified their children as eligible (including age eligible) and consented, upon which children participated in the study. In data analysis, upon calculation of age by study metrics, some children were outside the defined age range and were excluded from the analysis. In addition, not all who consented to participate in the study completed all parts or all items of all the questionnaires, so the results for each item reflect only those who answered that question or whose data were available at the time of this report. Finally, potential outliers with extreme values (defined as those with a value of 3 standard deviations (sd) above or below the mean) were also excluded from this report. Total percentage may not add up to 100 because of rounding.

A. Child Demographics

A total of 128 children participated from Dededo. Parents/caregivers answered multiple questions about their child participating in the CHL research program. The following section reports some of that information collected, including child’s sex, age, race and ethnicity.

Sex: All 128 children participated had data on sex.

Sex	Frequency	Percent
Boys	71	55.47%
Girls	57	44.53%
Total	128	100%

Age: Child’s age was calculated between age in years elapsed between child’s date of birth and the date where anthropometry was measured. The distribution of age of the children is shown below.

Age in Years	Frequency	Percent
Age 2	13	10.16%
Age 3	9	7.03%
Age 4	26	20.31%
Age 5	33	25.78%
Age 6	22	17.19%
Age 7	16	12.50%
Age 8	9	7.03%
Total	128	100%

Age in Years	Frequency	Percent
2-5 years old	81	63.28%
6-8 years old	47	36.72%
Total	128	100%

Racial and Ethnic Heritage

The data collection questions used in this section and for the household demographics came from various sources. Some items were generated by CHL staff; some came from The Center for Alaska Native Health Research Demographic and Medical Screening Questionnaire, the Behavioral Risk Factor Surveillance System 2011 survey, the 2011 Middle School Youth Risk Behavior Survey.

The distribution of race of the children using the US Office of Management and Budget (OMB) definition:

Race of child of OMB definition:	Frequency	Percent
Native Hawaiian or other Pacific Islander	91	71.09%
Asian	14	10.94%
More than one race	22	17.19%
White	1	0.78%
Total	128	100%

The distribution of race/ethnicity of the children using the CHL pacific definition, which prioritize the indigenous ethnic groups in the jurisdiction (CHL pacific):

Race of child of Pacific definition	Frequency	Percent
Chamorro	51	39.84%
Chuukese	28	21.88%
Filipino	12	9.38%
Mix Chamorro	16	12.50%
Mix within NHPI Chuukese	5	3.91%
Mix Filipino	4	3.13%
Mix within NHPI Chamorro	2	1.56%
Mix Asian Other	2	1.56%
Mix within NHPI Marshallese	2	1.56%
Palauan	2	1.56%
Asian East	1	0.78%
Kosraean	1	0.78%
Mix Chuukese	1	0.78%
White	1	0.78%
Total	128	100%

Child's Birth Place

Parents or caregivers who responded to the question: "In what city or country was your child born?"

Birth Place	Frequency	Percent
Guam	110	85.94%
CNMI	4	3.13%
Chuuk	1	0.78%
Philippines	2	1.56%
USA	4	3.13%
Hawaii	3	2.34%
China	1	0.78%
ID	1	0.78%
Japan	1	0.78%
RMI (Republic of the Marshall Islands)	1	0.78%
Yap	1	0.49%
Total	128	100%

Parents responded to the question about residence: "How many years has your child lived here?"

Among the 128 children, 123 had information on this question. Among them, **108 (87.80%)** lived their whole life in Dededo.

Language child speaks

The language distribution of the children in the survey is listed in the following table.

Note: Language responses may total over 128 and 100% because some respondents could speak more than one language.

Top languages child speaks	Frequency	Percent
English	125	60.10%
English Chuukese	44	21.15%
English Tagalog/Ilocano/Pampango/Filipino	19	9.13%
Chuukese	10	4.81%
English Yapese	3	1.44%
English Chinese	2	0.96%
English Carolinian Chuukese	1	0.48%
English Pohnpeian	1	0.48%
Marshallese	1	0.48%
Sign Language	1	0.48%
Tagalog	1	0.48%
Total	208	100%

English was the top language spoken (72.66%). Other languages children in Dededo speak included English Chuukese, English Filipino, Tagalog, Chinese, English Chuukese, English Tagalog, and English Chamorro Chuukese. Among the 128 children that had information on this question, **72.66% of children only speak English** and **24.92% children speak English and one or more other languages** and **2.34% speak only a language other than English.**

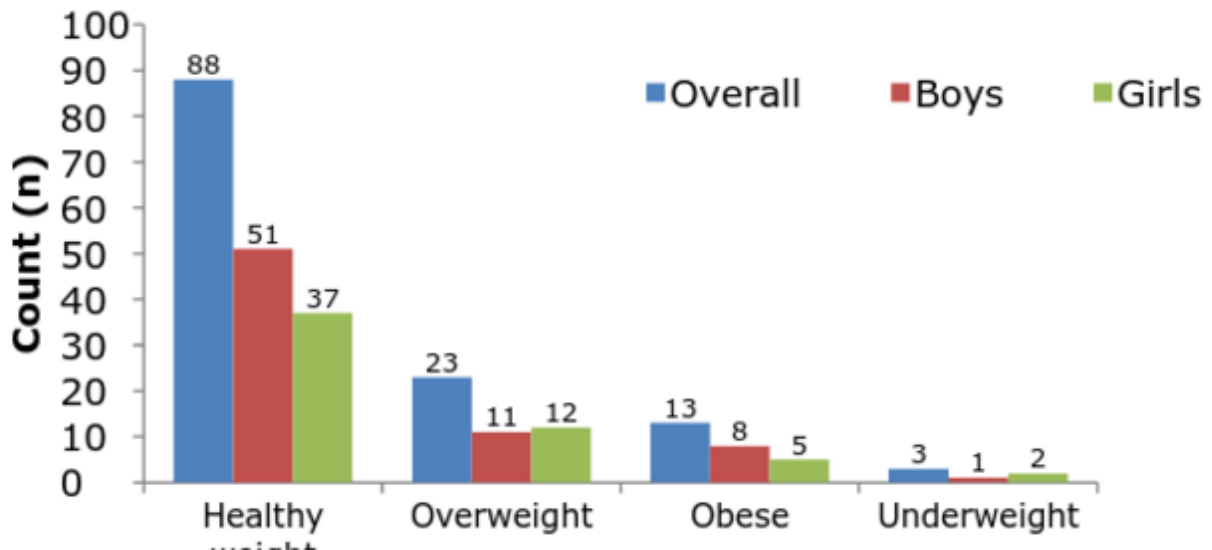
B. Child Anthropometry Measurement Results

Body Mass Index

Among the 128 children who participated in Dededo, 127 had valid measurements of Body Mass Index (BMI).

Overweight was defined as the 85th - 94th percentile for BMI (weight, kg/height, m²) and obesity was defined as greater than or equal to the 95th percentile for BMI (Centers for Disease Control and Prevention, 2009).

Prevalence of overweight and obesity of study children in Dededo



A total of 127 children were included for this analysis. Among them, 88 (69%) were healthy weight, 23 (18%) were overweight, 13 (10%) were obese, and 3 (2%) were underweight.

Abdominal Obesity

The International Diabetes Federation (IDF) suggests that children 6 years or older with a waist circumference equal or greater than the 90th percentile be considered as having abdominal obesity (Zimmet et al., 2007). For children younger than 6 years of age, currently there is insufficient information for such classification. Using children ages 6-8 years in the CHL data set as the reference data, the 90th percentile cutoff value is 71.4667cm. The 90th percentile cutoff value reported from the IDF, which uses “a nationally representative sample” of boys and girls, is 67.65 cm for 7-year olds.

Among the 47 participants in Dededo between the ages 6-8 years, using either the CHL cutoff or IDF cutoff value, six percent (6%) of these 6-8-year-old children were considered as having abdominal obesity.

C. Sleep

The National Sleep Foundation **recommends** for 2 year olds: 11-14 hours of sleep/night; for 3 to 5 year olds: 10-13 hours/night; and for 6 to 8 year olds: 9-11 hours/night. The National Sleep Foundation also gives a **range** that may be appropriate for an individual child which is a bit wider with 9-16 hours for 2 year olds; 8-14 hours for 3 to 5 year olds; and 7-12 hours for 6 to 8 year olds.

Parents were asked, “How many hours of sleep on average does your child get in a 24-period (at night and in naps)?” The respondents were asked to choose from 0 hours to over 13 hours in half hour increments. For those chosen over 13 hours, 13.5 hour was assigned instead; hence, the maximum hours are at 13.5 hours.

Some participants misunderstood the question but put down child’s naptime or hours sleep on the previous night instead of average sleep duration. Therefore, observations where sleep duration was less than 3.5 hours were removed from this report as those values are more or less considered as biological invaluable values.

Hours of sleep in 24 hours at night and in naps (on average and from parent / caregiver report)	Frequency	Percent
2 year olds	13	100%
Less than 9 hours	7	53.85%
9 hours to less than 11 hours	5	38.46%
11 hours or more (to 13.5 hours)	1	7.69%
3 – 5 year olds	64	100%
Less than 8 hours	7	10.94%
From 8 hours to less than 10 hours	35	54.69%
From 10 hours to 13.5 hours	22	34.38%
6 – 8 year olds	47	100%
Less than 7 hours	0	0.00%
From 7 hours to less than 9 hours	28	59.57%
From 9 hours to 13.5	19	40.43%

D. Medical

Parents answered the question: Does your child have any current medical conditions diagnosed by a doctor? Among the 127 children, 22 (17.32%) reported that their children had a medical conditions diagnosed by a doctor. The top two medical conditions are asthma 16 (12.50%) and Constipation 1 (0.78%).

E. Early life and feeding of child

Birth weight

Among the 128 children that participated from Dededo, a total of 94 had information on birth weight. The distribution of birth weight into three groups is summarized in the following table.

Birth Size	Frequency	Percent
Low birth weight < 2500 g	74	78.72%
Healthy birth weight (2500 – 4000 g)	8	8.51%
High birth weight > 4000 g	12	12.77%

Among the 128 children that participated in Dededo a total of 57 had information on birth length. Among the 57 children, 4 (7.02%) had birth length below 5 percentile using the CDC 2000 reference data.

Early feeding pattern

Among the 128 children that participated in Dededo, a total of 122 had information on breastfeeding. Among the 122 children, 83 (68.03%) of children were reported as ever being breastfed

Child ever Breastfed or fed Breastmilk	Frequency	Percent
Yes	83	68.03%
No	39	31.975
Total	122	100%
If Yes, about children who were ever breastfed		
Mean age child stopped breastfeeding or being fed breast milk (months) (n=78)	9.7 months	

Among the 128 children that participated in Dededo, a total of 121 had information on formula feeding. Among those 121 children, 102 (84.30%) of children were reported to be ever formula fed. The mean age when children started formula feeding or stopped formula feeding is reported in the following table.

Child ever fed formula	Frequency	Percent
Yes	102	84.30%
No	19	15.70%
Total	121	100%
If Yes, about children who were fed formula		
Mean age child first fed formula (months) (n=91)	2.3 months	
Mean age child completely stopped drinking formula (months) (n=88)	12.2 months	

A total of 98 out of the 128 children had information on age when the child was fed anything other than breast milk or formula (juice, cow's milk, sugar water, baby food, or anything else, even water). The mean age of this is 7.1 months (sd=3.2).

F. Household Demographics and Measures

Parents and other caregivers brought their children to participate in the CHL measurement study. The following section summarizes the participant's relationship to the child, the parent or caregiver's marital status, educational achievement, employment status, family income, and family structure.

Relationship of the participant to the child is summarized in the following table.

Relationship	Frequency	Percent
Biological mother	107	83.59%
Biological father	10	7.81%
Legal guardian, caregiver, other	9	7.03%
Grandmother	2	1.56%

A total of 127 out of the 128 participants had marital status information of the respondent (see the following table).

Marital Status	Frequency	Percent
Single and living with boyfriend, girlfriend, or partner	49	38.58%
Married	42	33.07%
Single and not living with boyfriend, girlfriend, or partner	24	18.90%
Separated	7	5.51%
Other	4	3.15%
Widowed	1	0.79%

Household size and multi-generation households

All 128 children had information on the number of people lived in the same household and their relationship to the child. Among them, 31 (24.22%) are from multi-generation households. Mean size of household is 6.3, with the minimum of 2 and maximum of 28.

Education

The education levels of the participants – (the parents or guardians) are shown below:

Education	Frequency	Percent
Grades 1 up to 8 (elementary to middle)	4	3.13%
Grades 9 to 11(some high school)	32	25.00%
Grades 12 or GED (high school graduate)	53	41.41%
College or technical school 1 to 3 years	31	24.22%
College 4 years or more	8	6.25%
Total	128	100%

Employment status of the caregiver participants

Among the 128 children that participated in Dededo, all had information on whether the respondent is employed for wages/salary, whether he/she is self-employed, whether he/she is out of work for more than a year or less than a year, whether the respondent is a homemaker, a student, or unable to work. A total of 128 had information on whether the respondent had more than one job.

Employment	Frequency	Percent
Employed for wages / salary	31	24.22%
Self-employed	6	4.69%
Out of work (more than 1 year)	25	19.53%
Out of work (less than 1 year)	5	3.91%
Homemaker	52	40.63%
Student	11	8.59%
Retired	0	0.00%
Unable to work	11	8.59%
More than one job	4	3.13%

Note: responses may total over 100% because respondents could select more than one category.

Household income level

Among the 128 children that participated in Dededo, 79 had information on annual household income from all sources over the past 12 months. The following table summarizes this information.

Annual household income in the past 12 months	Frequency	Percent
Under \$10,000	38	48.10%
From \$10,000 to less than \$20,000	18	22.78%
From \$20,000 to less than \$35,000	9	11.39%
From \$35,000 to less than \$60,000	10	12.66%
From \$60,000 to less than \$75,000	3	3.80%
\$75,000 or more	1	1.27%
Total	79	100%

Religion

Among the 128 children, a total of 122 had information on family's religious affiliation. Out of the 122, 116 (95.08%) reported no religious affiliation. Among the 116 with any type of religious affiliation, the distribution of different religious affiliations is presented in the following table. A total of 58 had information on how often they engage in religious activities. The mean number of times per month attending religious activities is 4 among those participants.

Religion Affiliation	Frequency	Percent
Catholic	100	86.21%
Other	6	5.17%
Pentecostal	4	3.45%
Protestant	3	2.59%
Mormon/ Latter-day Saints	2	1.72%
Christian Denomination not specified	1	0.86%
Total	116	100%

Food Security / Resource Availability

Addressing food security and resource availability was included in the demographic questionnaire, to help understand the support services used by participants in our geographically varied jurisdictions. The food security questions were adapted from USDA (2008) questions used by USDA to Assess Household Food Security (USDA, 2008). NHANES (cdc.gov/nchs/data/nhanes/nhanes_11_12/fsq_family.pdf). Participants were asked, in the past 12 months, how often money for food or money for utilities runs out before the end of the month. Among the 128 children that participated in Dededo, a total of 109 had information on whether money for food runs out or not and a total of 99 had information on whether money for utility runs out or not. The following table presents the answers.

Food Insecurity and Utilities in past 12 months	Frequency	Percent
Money runs out for food before the end of the month.		
Never	32	29.36%
Seldom	12	11.01%
Sometimes	48	44.04%
Most times	6	5.50%
Always	11	10.09%
Money for household utilities (water, fuel, etc.) runs out before the end of the month.		
Never	28	28.28%
Seldom	12	12.12%
Sometimes	36	36.36%
Most times	11	11.11%
Always	12	12.12%

A total of 124 children had information on whether they received assistance to pay for food. Among those 124 children, 110 (88.71%) reported they did receive assistance. The following table summarizes different types of benefits their households have received.

Food Assistance Benefits received for those who obtained food assistance	Frequency	Percent
EBT/ SNAP / NAP (formerly called Food Stamps)	99	79.83%
Food Assistance (Food Bank / Food Pantries or Commodity foods)	19	15.32%
WIC benefits	45	36.29%
Free or reduced cost breakfast or lunch at school	34	27.41%

Note: responses may total over 100% because respondents could select more than one category

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