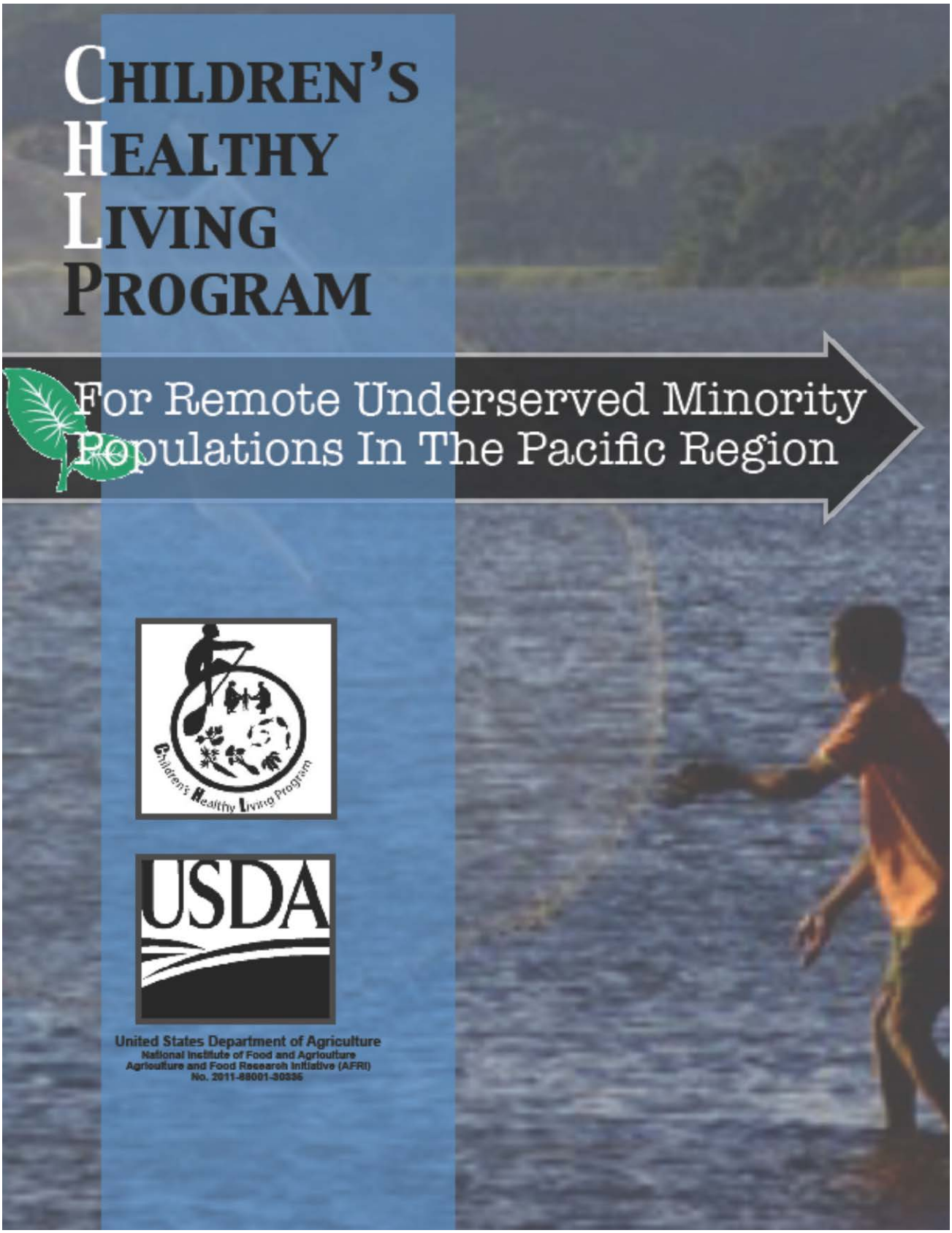

United States Department of Agriculture
National Institute of Food and Agriculture
Agriculture and Food Research Initiative (AFRI)
No. 2011-68001-30336

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

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Palau Prevalence Survey Results

United States Department of Agriculture
National Institute of Food and Agriculture
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Table of Contents

Executive Summary

I. Executive Summary

Introduction to the Report

The CHL program utilizes three major strategies towards its goals: 1) training, 2) extension – outreach, and 3) research - intervention. The purpose of this document is to report on the measures of these three strategies in your community. It includes information about CHL training, outreach and sustainability activities, and the research descriptive results of the Children's Healthy Living Program Survey at the individual and household level and the results of the community level assessment. The community level assessment utilizes the Community Assessment Toolkit (CAT) -- which is comprised of assessments about the availability of food resources, parks, play spaces, and walkable streets – and a Food Cost Survey.

If you have any questions about this report, please contact *Rachel Novotny at novotny@hawaii.edu or 808-956-3848.*

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


Children's Healthy Living Program
Children's Healthy Living Program

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, 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 Mānoa with contracts to the University of Guam, University of Alaska Fairbanks, American Samoa Community College, Northern Marianas College, and through fees for diet analysis services conducted at 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 behavioral targets:

1) Lower prevalence of excess weight and waist circumference for height

2) Increased sleep

3) Reduced consumption of sugar-sweetened beverages (SSB)

4) Higher fruit and vegetable intake

5) Higher water intake

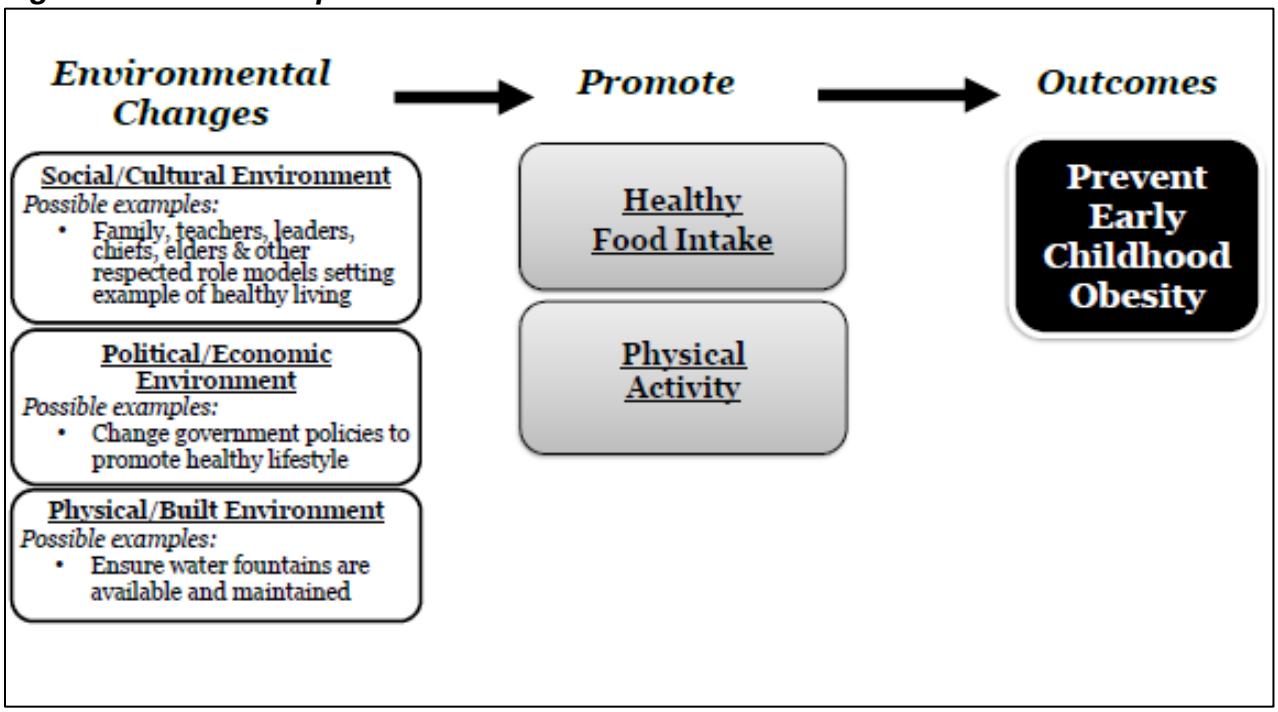
6) Reduced TV/video viewing

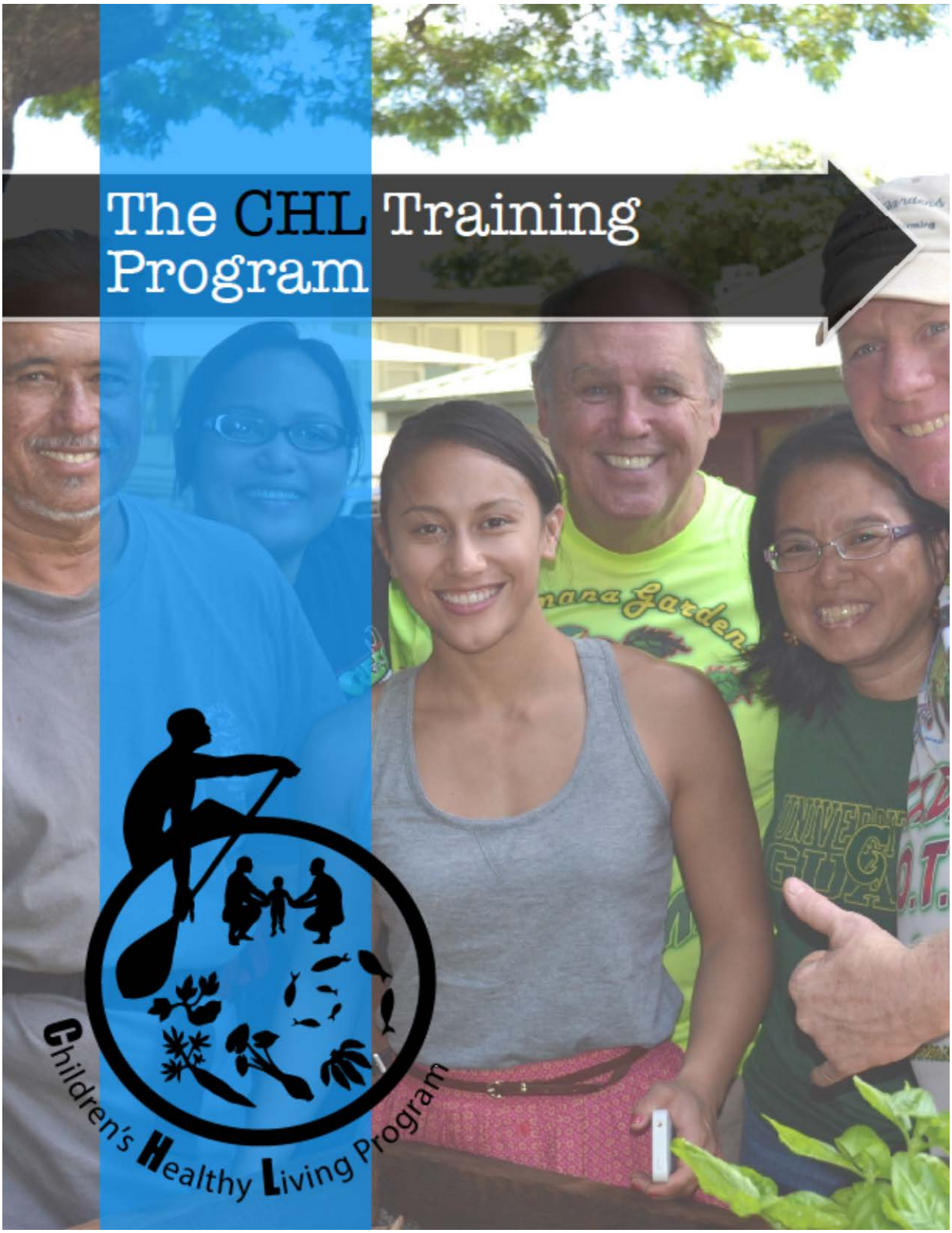
7) Increased physical activity

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




The CHL Training Program
Children's Healthy Living Program

III. The CHL Training Program

Training Program Objectives

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

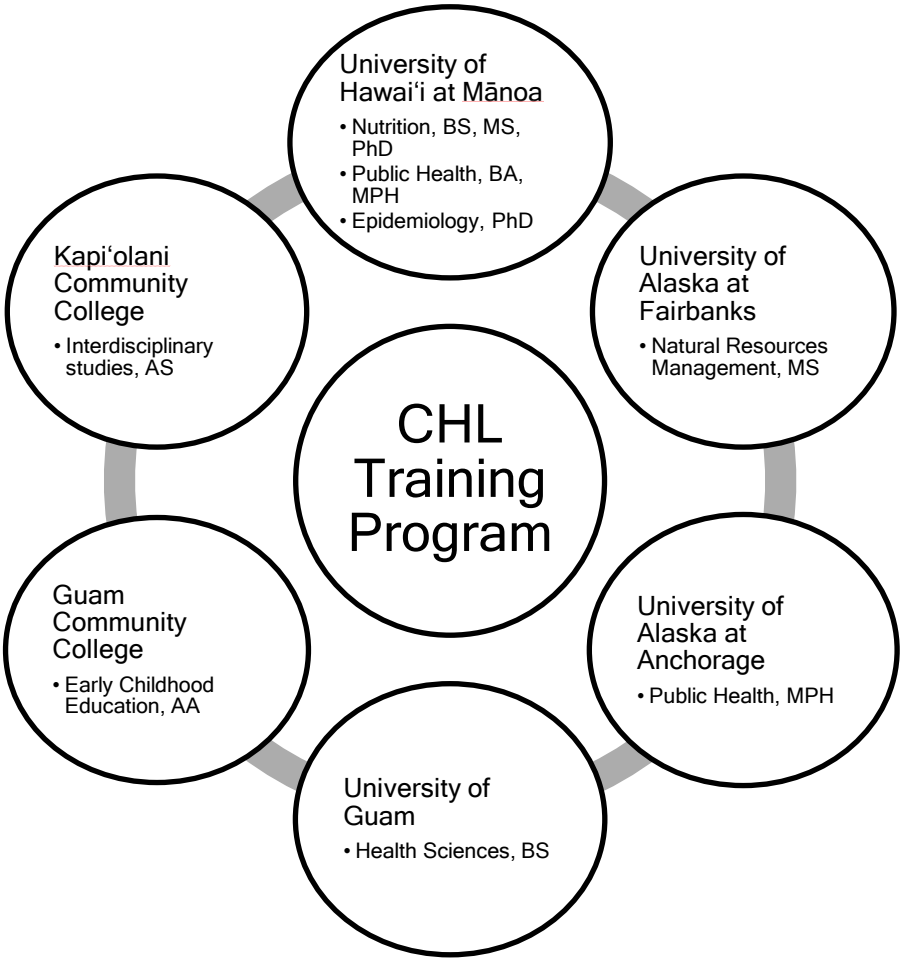
Training Program Partnerships

The CHL-TP was a collaborative effort with institutions across the Pacific. Students selected for the program attended programs 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 student selection committees who screened and interviewed student applicants and identified the top candidates for the scholarships. 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 (see CHL web site for full list of trainees).

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

Figure 2. Institutions, Academic Program Areas and Degrees in the Children's Healthy Living (CHL) Training Program



DEGREES:

AS = Associates of Science;

AA = Associates of Arts;

BS = Bachelor of Science;

BA = Bachelor of Arts;

MS = Master of Science;

MPH = Master of Public Health;

PhD = Doctor of Philosophy

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.

An opportunity for all the CHL trainees to engage in distance learning together while strengthening their bond as a cohort and their ties to CHL and the region. 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 a course from the Food Science and Nutrition (FSHN) program, 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 utilized an online platform, which allowed 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 (Fialkowski et al, 2016).

Other curriculum and educational 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, Maternal Child Health, School Health, and Non-communicable disease staff and community workers and is 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 presented their projects and budgets to a selected project committee for approval prior to implementation. Upon completion of their project all students submitted a formal report and conducted an oral presentation. Examples of projects completed by graduates of the CHL-TP are outlined in Table 1.

Twenty-four students 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 2 undergraduate) have completed the CHL-TP and attained their degrees (Table 1). Three graduate-level Trainees from Alaska and CNMI are expected to complete their MPH (2) and MS (1) degrees while one graduate level Trainee from American Samoa is expected to complete a PhD in Epidemiology in the Summer of 2016. One undergraduate Trainee from Yap is expected to graduate with a Bachelor's degree in Nutrition in Summer 2016. Three undergraduate Trainees from American Samoa, Chuuk, and the Marshall Islands are expected to graduate in Fall 2016 with Bachelor's degrees in Public Health. One graduate student from CNMI is expected to graduate with their MPH in Fall 2016. Four undergraduate Trainees from Pohnpei, Palau, Chuuk, and the Marshall Islands are expected to graduate in Fall 2017 with Bachelor's degrees in Health Science (3) and an Associate degree in Early Childhood Education (1), respectively.

Table 1. CHL Training Program Graduates by Jurisdiction, Degree Type, and Project Description

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
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
Srue Wakuk	Kosrae	BA, Public Health	To analyze how the Women in Farming Kosrae (WIFK) Project empowers women and impacts Health

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

Long-term Plans

The CHL program provided guidance in identifying other funding to Trainees who did not complete their degree programs within the life of the CHL grant. The CHL-TP also continues to serve as a source of professional collaboration and career networking for the Trainees. The CHL-TP 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 adapted for offering 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 nutrition 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 for offering 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 Summer Institute visit: https://programs.coe.hawaii.edu/chl/

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


CHL Research Activities
Children's Healthy Living Program

IV. Research Activities

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.

Prevalence Survey

Study Design

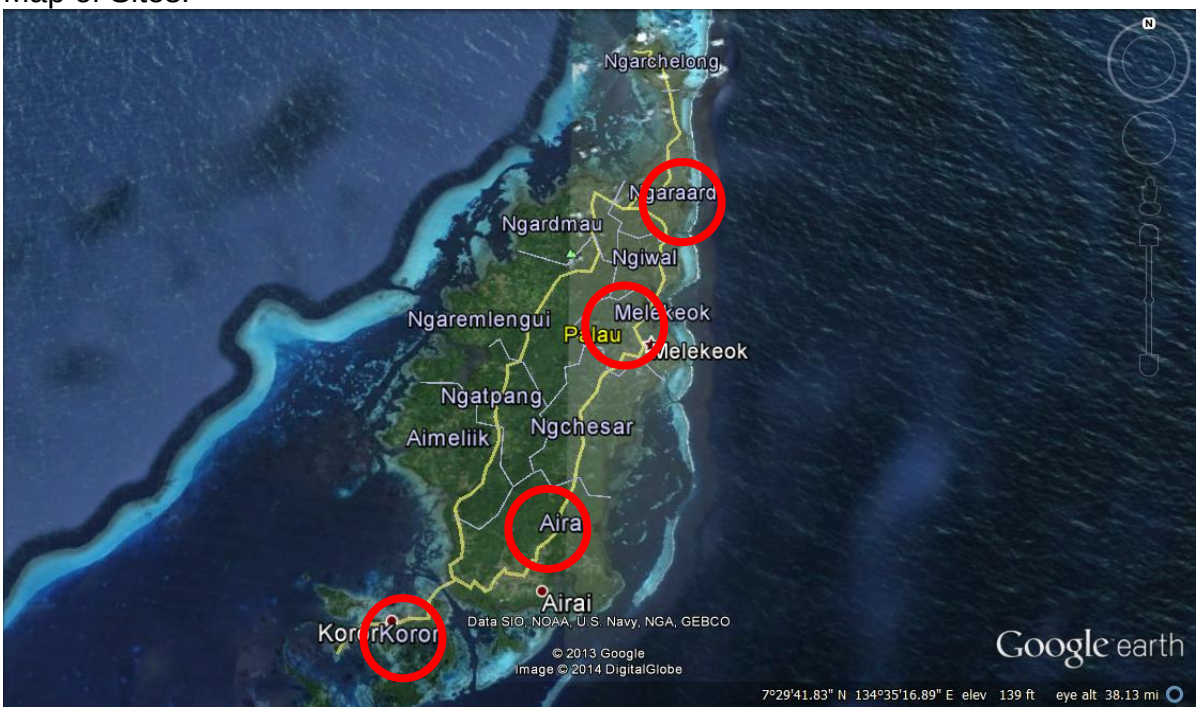
The cross-sectional CHL study design involved data collection on body size, functional outcomes of obesity (acanthosis nigricans), food intake, physical activity, lifestyle behavior which included screen time, and demographics (baseline or prevalence). These were measured through anthropometry (height,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

Data were collected in March 2014 in Palau.

CHL research included 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.

The goal of the CHL Palau prevalence survey was to obtain health measures and health behaviors in children between the ages of 2-8, with a focus of those between the ages of 4-6 years old. Due to the focus on young children, the Palau prevalence survey worked with Head Start centers. The centers where data was collected were: Koror (Ngerbeched Head Start), Airai (Olbedekall Head Start), Melkeok Head Start, and Ngaraard Head Start (see map below).

Map of Sites:



In sites were there were not many children in the Head Starts, elementary schools participated. Young children (5-8 years old) in Melkeok and Ngaraad elementary schools were included in the survey.

Children were recruited in the Head Start centers of the study sites of Koror, Airai, Melkeok, and Ngaraard States by the CHL Palau outreach assistant with the help of the Head Start Program and were conducted on March 3-7, 2014. For Melkeok and Ngaraard, recruitment also took place in the elementary schools for the first graders as the number of children in the Head Starts did not meet the required number of children. The recruitment team organized a parent/teacher meeting to discuss this study and schedule for this study at each study site.

Teachers and school staff encouraged participation and retention. Two recruitment staff assisted the CHL team by reporting numbers of possible participants and distributed CHL Flyers in the local language in communities. A total of 60 possible participants were recruited per recruitment site.

Since most Head Starts are located next to elementary schools, the older children 6-8 year olds were recruited from the schools. Siblings of children enrolled in the programs who were in the same age range could also participate in the program.

The measurement team consisted of a lead measurer and at least 3 staff trained and standardized in measurement collection. The lead calibration team from the CHL Coordinating Center (i.e., Program Director and Assistant Program Director) conducted measurement training and standardization in Palau from March 31-April 04, 2014 in order to enable standardization of local staff prior to the start of measurement. Measurement teams were standardized against the CHL Coordinating Center (CCC) Calibration Team. A standardization/ quality assurance protocol developed by the Data Center as followed and the data as kept for reporting reliability and for quality assurance. The local team who underwent standardization/training was the two Public Health employees and Head Start employees. Anthropometric measurements that required standardization were height, weight, and waist circumference. In addition to the measurements, data on the listed forms below were collected.

1. Parent Consent Form and the Screening form

2. Form Package, which included the following participant forms/questionnaires:
    a. Participant Measurement Checklist
    b. Registration Form
    c. Demographics Questionnaire
    d. Culture Questionnaire
    e. Sedentary Behavior Questionnaire
    f. Sleep Questionnaire
    g. Food & Activity Log. All participants (parents/caregivers) were instructed to complete 2 assigned days of Food & Activity Logs.

3. A referral letter was given to parents/caregivers when the child had a positive Acanthosis Nigricans screening result.

A total of 214 children were consented to participate in the survey. The Palau prevalence survey was part of a larger program and the number of children consented in the U.S. Affiliated Pacific are found in Table 1.

*NOTE: The following numbers are based on consented, rather than those who completed the measures.**

Table 1: Number of Participants Consented in each Jurisdiction for CHL Research

Number of Participants Consented in each Jurisdiction for CHL Research	
Jurisdiction- Communities	**Number Consented**
Alaska- Anchorage, Fairbanks, Kenai, Mat-Su Valley	713
American Samoa Fagaitua/Pagai/Amaua/Auto/Utusia, Leloaloa/Aua, Onenoa/Tula/Alao, Aoloau/Aasu	978
CNMI - Koblerville/San Antonio, Oleai, Kagman, San Roque, Saipan, Village	924
Guam- Yigo, Yona, Agat, Sinajana	885
Hawaii - Nanakuli, Waimanalo, Hilo, Wailuku, Molokai, Kauai	988
CHL Intervention Study Data (total)	4,488

Freely Associated States	
Jurisdiction- Communities	**Number Consented**
Pohnpei *Nett, Mand, Sekere, Wenik*	**212**
Republic of the Marshall Islands *Majuro, Ebeye (Kwajalein atoll), Ailinglaplap*	**218**
Palau *Koror, Ngaraard, Melekeok, Airai*	**214**
Yap *Rull, Tomil, Weloy, Ulithi*	**205**
Kosrae *Tafunsak, Lelu, Sansrik, Malem, Utwe/Walung*	**207**
Chuuk *Weno (Sapuk, Iras), Tol, Tonoas, Uman*	**231**
FAS Prevalence Data (total)	**1,287**
CHL Total (CHL Intervention + FAS Prevalence)	**5,775**

Summary of Prevalence Study

Children's Healthy Living Program

V. Republic of Palau Prevalence Survey Results

The total number of responses for each question may not match the total number of consented participants as parents may not have answered every question. 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. 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. The total percentage may not add up to 100 because of rounding.

Child Demographics

Section 1. Child Demographics

A total of 193 children actually participated from Palau. 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: 190 children participating had data on sex.

Table S.1.1. Number and Percent of Participants by Sex

Sex	Number	Percent
Boys	102	53.7%
Girls	88	46.3%
Total	190	100%

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

Table S.1.2. Number and Percent of Participants by Age

Age in Years	Number	Percent
Age 2	10	5.2%
Age 3	23	11.9%
Age 4	47	24.4%
Age 5	67	34.7%
Age 6	27	14.0%
Age 7	10	5.2%
Age 8	9	4.7%
Total	193	100%

Table S.1.3. Number and Percent of Participants by Age Group

Age in Years	Number	Percent
2-5 years old	147	76.2%
6-8 years old	46	23.8%
Total	193	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, and the 2011 Middle School Youth Risk Behavior Survey.

Table S.1.4. The Distribution of Race of the Children Using the U.S. Office of Management and Budget (OMB) Definition

Race of child of OMB definition	Number	Percent
More than one race	36	18.8%
Native Hawaiian or other Pacific Islander	150	78.1%
Asian	6	3.1%
Total	192	100%

Table S.1.5. The Distribution of Race/Ethnicity of the Children Using the CHL Pacific Definition Which Prioritizes the Indigenous Ethnic Groups in the Jurisdiction (CHL Pacific)

Race of child of Pacific definition	Number	Percent
Palauan	142	74.0%
Mixed Palauan	35	18.2%
Palauan mixed with other Pacific Islanders	7	3.7%
Filipino	4	2.1%

Race of child of Pacific definition	Number	Percent
Other (Yapese, Asian)	4	2.1%
Total	192	100%

Child's Birth Place

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

Table S.1.6. Child's Place of Birth

Birth Place	Number	Percent
Palau	159	90.3%
USA (Continental US)	9	5.1%
Micronesia (Yap, CNMI, Guam)	5	2.8%
Hawaii	2	1.1%
Philippines	1	0.6%
Total	176	100.0%

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

Among the 193 children, 187 had information on this question. Among them, 169 (90.4%) had lived their whole life in Palau and the rest, 9.6%, spent one fifth to three quarters of their life here.

Language Child Speaks

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

Note: Language responses may total over 193 and 100% because some respondents could speak more than one language.

Table S.1.7. Top Languages Child Speaks

Top languages child speaks	Number	Percent
Palauan	101	52.3%
Palauan and English	58	30.1%
English	9	4.7%
Palauan, Japanese and English	5	2.6%
Sonsorolese	5	2.6%
Sonsorolese and English	3	1.5%
Other (including Tagalog, Yapese, Tobian)	12	6.2%
Total	193	100%

Palauan was the top language spoken at home (66.3%). Other languages children spoke at home included English, Sonsorolese, Japanese and Tobian. The majority of children in Palau (53.4%) spoke a language other than English at home.

Summary

Among the 194 children, 191 had information on sex, of which 89 (47%) were girls and 102 (53%) were boys. Furthermore, 148 (76%) were of age group 2-5 years and 46 (24%) were of age group 6-8 years. All had information on race, of which 145 (76%)

were Native Hawaiian/ Pacific Islander (NHPI), 40 (21%) were more than one race and 6 (3%) were Asian. From NHPI children, 137 (94%) were Palauan.

Child Anthropometric Measurement Results

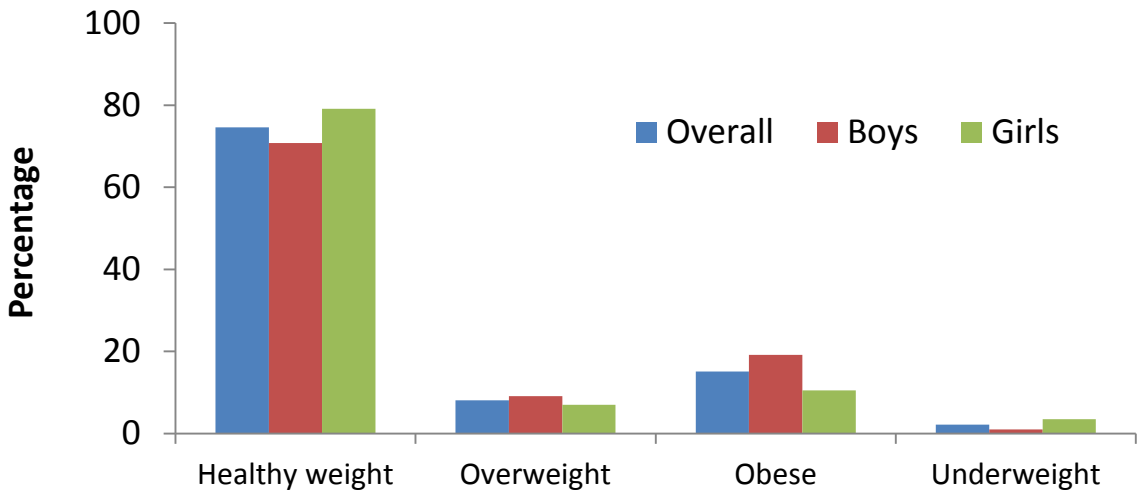
Section 2. Child Anthropometric Measurement Results

Body Mass Index

Among the 193 children who participated in Palau, 185 had valid measurements of Body Mass Index (BMI).

Overweight was defined as the 85th - 94th percentile for BMI (weight, kg/(height, m^2)) and obesity was defined as greater than or equal to the 95th percentile for BMI (Centers for Disease Control and Prevention, 2000).

Prevalence of Overweight and Obesity of Study Children in Palau



A total of 185 children were included for this analysis. Among them, 74.6% were healthy weight, 8.1% were overweight, 2.2% were underweight and 15.1% were obese. No difference was found between boys and girls, or between children ages 2-5 and those 6-8 years old.

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 71.47cm. 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 46 participants in Palau between the ages 6-8 years, using the CHL cutoff, 6.5% were considered as having abdominal obesity. Using the IDF cutoff value, 13.0% of children would be considered as having abdominal obesity.

Acanthosis Nigricans (AN)

Acanthosis nigricans is an indicator of high insulin levels, which can lead to insulin resistance and Type 2 diabetes. Acanthosis nigricans presents as a light brown, black velvety, rough, or a thickened lesion on the surface of the skin. These features are usually seen in body folds and creases, on the nape of the neck, armpits, and over the knuckles. Presence of acanthosis nigricans suggests a problem with handling the body's insulin, and the possibility of having pre-diabetes or diabetes. CHL staff encouraged the parents/caregivers of these children to make an appointment for these children to see a doctor for further information and care.

Burke's (1999) quantitative scale was utilized, with scores given for the severity of AN. Among the 156 children who participated, 188 had data on AN, of which 11 (5.9%) screened positive for AN.

Summary

A total of 186 children were included for this analysis. Among them, 74% were healthy weight, 2% underweight, 9% overweight, and 15% were obese. Among **boys**, 70% were healthy weight, 1% were underweight, 10% overweight and 19% obese (Figure 1B). Among girls, 79% were healthy weight, 3% were underweight, 7% overweight and 10% obese.

Child Nutrition And Diet Reports

Section 3. Child Nutrition and Diet Reports

Parents and caregivers completed logs of everything their children ate and drank for two assigned days. The design of the logs was based on previous research conducted by the principal investigator as well as other team members.

For Palau, 170 Food and Activity Logs were reviewed by CHL staff and are included in this report.

The top five foods, beverages or condiments reported that children ate are shown in the table below.

Table S.3.1. Top 5 Foods, Beverages, or Condiments Most Commonly Reported

Food description	Palau	
	Number of times reported	% of all foods reported
#1 White Rice	482	13.4
#2 Milk, 2%	161	4.5
#3 White Bread	118	3.3
#4 Soup, Saimin, From dry, Oriental broth w/ noodles	74	2.0
#5 Fish, Dolphin fish [mahimahi], Pan-fried	66	1.8

Fruit and Vegetable Intake

The United States Department of Agriculture (USDA) daily recommended amounts of fruits and vegetables for children 2-8 years of age are shown in the table below.

Table S.3.2 United States Department Daily Food Plan

United States Department of Agriculture's My Daily Food Plan		
Daily recommended amount of fruits and vegetables		
2 years	1 cup	1 cup
3 years	1 ½ cup	1 cup – 1 ½ cup
4-5 years	1 ½ cup – 2 cups	1 cup – 1 ½ cup
6-8 years	1 ½ cup – 2 ½ cups	1 cup – 2 cups

Children should consume at least 1 cup of fruit and 1 cup of vegetables daily, with these recommendations (as shown in the table) increasing as children age. This aligns with the CHL behavioral intervention target or goal: to eat more fruits and vegetables daily.

In Palau, children ate 1.1 servings of fruits and vegetables per day on average as recorded by parents/caregivers on the two-day food log. The average servings of fruit was 0.5 per day and the average servings of vegetables was 0.5 per day.

22 children (12.9%) in Palau met the U.S. national recommendations for daily fruit consumption.

8 children (4.7%) in Palau met the U.S. national recommendations for daily vegetable consumption.

Note that the percentages meeting the fruit and vegetable recommendations may to be underestimated as two days of food records may not reflect the true long-term diets of the children. However, a low proportion of children meeting the recommendation even using two days of records can be used as an indication that the population should increase intake.

Water

Children should consume at least 32 - 40 fluid ounces (4 - 5 cups) of water from all beverages (milk, juice, drinking water) daily. CHL behavioral intervention target or goals

were to encourage children to drink more water.

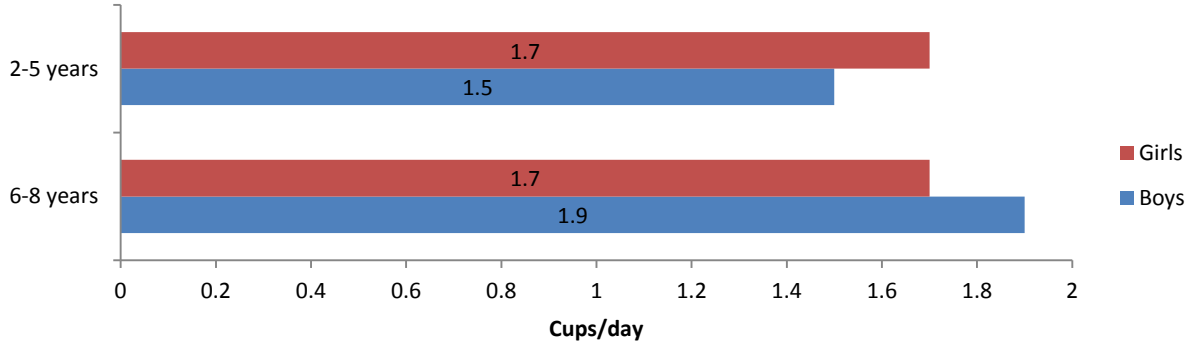
87.1 % of Parents/ caregivers reported on the two-day Food and Activity Log that their child drank water over these two days.

On average, children in Palau drank 1.7 cups of water daily.

Table S.3.3. Intake of Daily Drinking Water by Age Group and Sex

Drinking water intake (cups / day) by sex	Palau	
	Number	**Average**
Boys		
2 – 5 years	43	1.5
6 – 8 years	47	1.9
All	90	1.7
Girls		
2 – 5 years	32	1.7
6 – 8 years	48	1.7
All	80	1.7

Recorded intake of Daily Drinking Water (cups / day) by Sex and Age for all Children



Sugar-Sweetened Beverages (SSB)

CHL behavioral intervention targets or goals are to limit (or avoid) the consumption of sugar-sweetened beverages (SSB).

From the two-day food record, 106 (62.4%) of parents/caregivers in Palau reported that their child consumed SSBs.

Children drank 0.7 cups of sugar-sweetened beverages on average daily.

For Palau, the most frequently consumed SSB included canned sweetened tea, canned fruit punch and canned orange-apricot drink.

Children's intake of Sugar-Sweetened Beverages (cups/day) for Palau

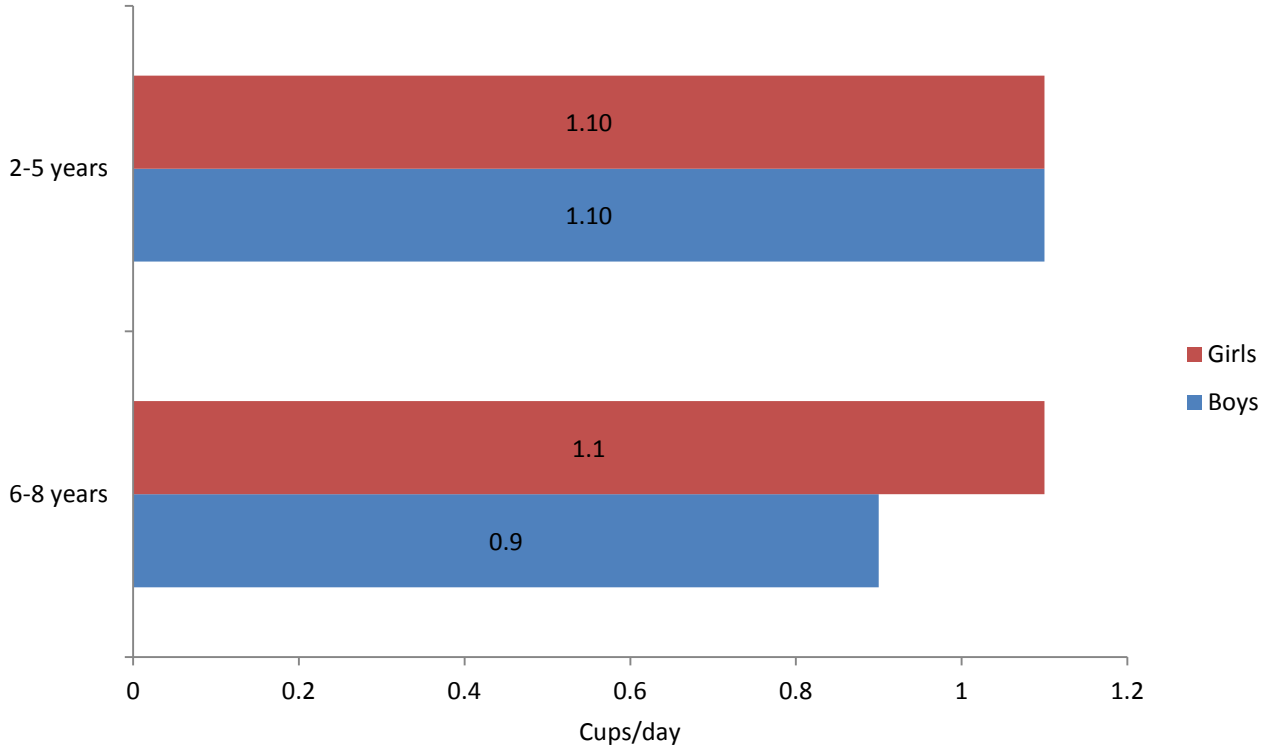


Table S.3.4. Mean SSB Intake (cups/day) for all Children and Those with SSB's Recorded for Palau

Mean SSB intake (cups/day)	All children		SSB Recorded	
	Number	Average	Number	Average
Boys				
2 – 5 years	43	0.7	27	1.2
6 – 8 years	47	0.7	32	1.1
All	90	0.7	59	1.1
Girls				
2 – 5 years	32	0.5	15	1.1
6 – 8 years	48	0.7	32	1.0
All	80	0.6	47	1.0

Table S.3.5. Proportion of SSB Consumption Greater than 2 Cups per day Among all Children and Only Children with SSB Recorded for Palau

Proportion of children with SSB consumption greater than 2 cups per day	All children, number (%)		SSB Recorded, number (%)	
	0-2 cups	greater than 2 cups	0-2 cups	greater than 2 cups
Boys				
2 – 5 years	39 (90.7%)	4 (9.3%)	23 (85.2%)	4 (14.8%)
6 – 8 years	43 (91.5%)	4 (8.5%)	28 (87.5%)	4 (6.8%)
All	82 (91.1%)	8 (8.9%)	51 (86.4%)	8 (13.6%)
Girls				
2 – 5 years	30 (93.8%)	2 (6.2%)	13 (86.7%)	2 (13.3%)
6 – 8 years	46 (95.8%)	2 (4.2%)	30 (93.8%)	2 (6.2%)
All	76 (95.0%)	4 (5.0%)	43 (91.5%)	4 (8.5%)

Physical Activity From Accelerometers

Section 4. Physical Activity from Accelerometers

To provide data on their physical activity levels, about 100 children in each community were fitted with Actical accelerometers on the first day of measurement. Accelerometers are objective tools for measuring physical activity. Children were instructed to wear the accelerometers for 6 days without removal. Accelerometers were set to record children's movements at each second. Recorded movements are known as counts. The accelerometer counts were summed to derive the number of counts per minute (CPM). These CPMs were then used to derive activity levels based on the following criteria:

- Sedentary, if CPM ≤40
- Light, if 41≤ CPM ≤ 2295
- Moderate, if 2296 ≤ CPM ≤ 6815
- Vigorous, if CPM ≥ 6816

Sedentary (physical inactivity) behaviors includes excessive sitting, lying, as well as screen time. In this study, time spent on sleeping was not excluded from the sedentary results and was also considered as sedentary. **Light** activities include things such as walking at a slow pace or cleaning. **Moderate** types of activities include brisk walking, dancing and some active play, while **vigorous** activities include running, fast cycling and fast swimming.

Potential outliers with extreme values (defined as those with a value of 3 standard deviations (SD) above or below the mean) were excluded from this report. In Palau, Actical accelerometers from 83 children provided valid data on their physical activity levels. After excluding outliers, on average children spent 11.4 hours in sedentary activities (SD=1.4 hours).

On average, children in Palau spent 11.5 hours (SD=1.2 hours) on light activities.

On average, children in Palau engaged in 1 hour and 7 minutes on moderate or

vigorous activities (SD=0.5 hour)

Of the 83 children with accelerometer data, 48 (57.8%) of children in Palau met the U.S. national recommendations for achieving at least 60 minutes of moderate or vigorous activity daily, which is also a CHL behavioral intervention target or goal.

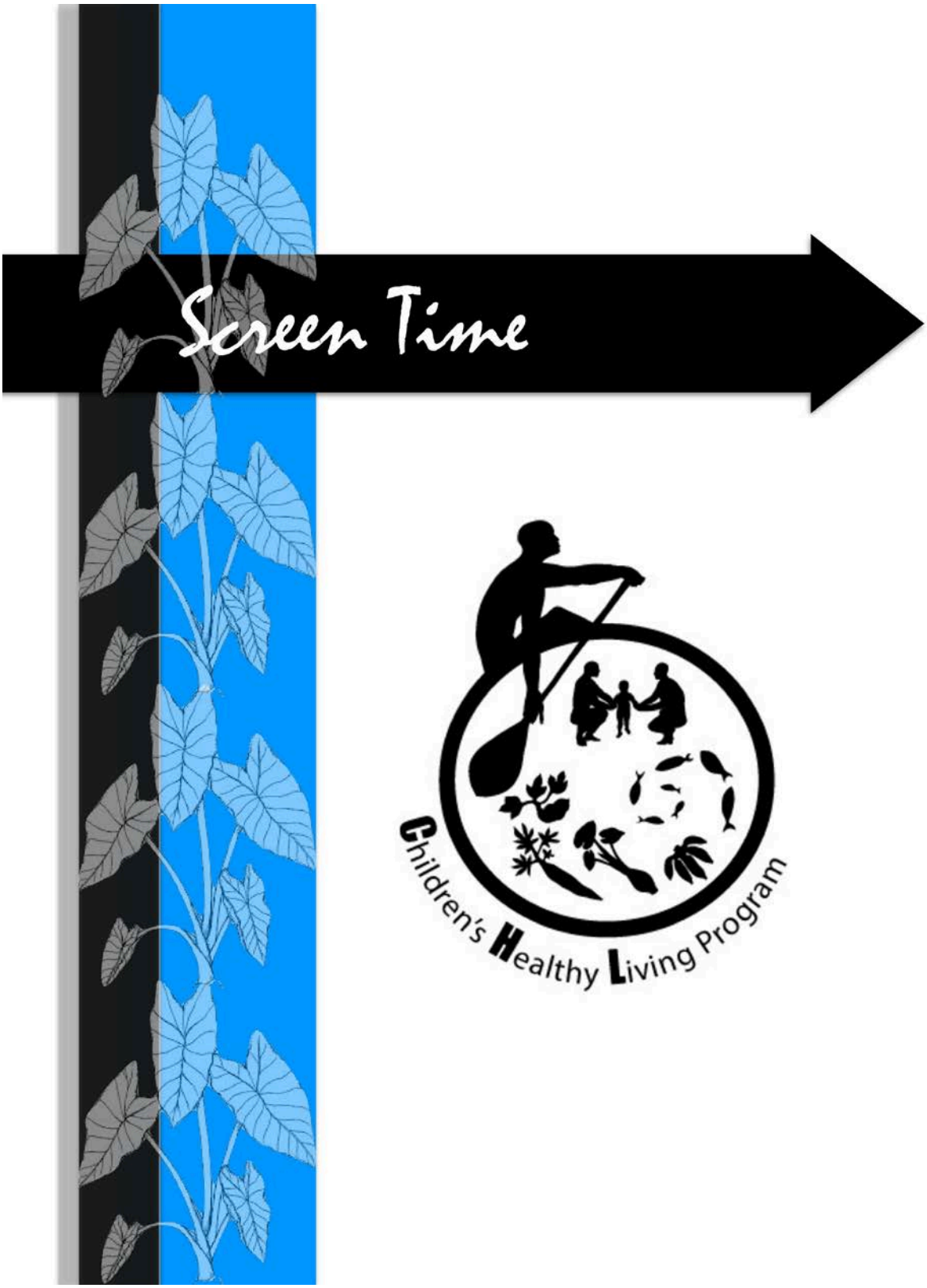
Table S.4.1. Hours of Physical Activity by Type

Physical activity from accelerometer	Average mean hour	
Sedentary activities (weighted) per day	11.3 hours	
Light activities (weighted) per day	11.6 hours	
Moderate activities (weighted) per day	1.1 hours	
Vigorous activities (weighted) per day	0.1 hours	
Moderate and vigorous activities (weighted) per day	1.1 hours	
	Number	**%**
Met national recommendation of >=60 minutes of moderate or vigorous physical activity daily	48	57.8%

Summary

In Palau, a total of 83 children had valid accelerometer data. Among those 83 children, daily average minutes of moderate and vigorous physical activity (MVPA) were 67.5 (sd=29.7).

Fifty eight percent of those 83 children met the national recommendation of 60 minutes a day of MVPA. More boys than girls were physically active.



Children's Healthy Living Program

Section 5. Screen Time

The following set of questions was adapted from Buckworth, J., & Nigg, C. (2004); Nigg, C. R. (2005); Haas, S., & Nigg, C. R. (2009).

Parents were asked, "On usual weekdays (Monday to Friday), how many hours a day does your child spend watching Television and/or videos/ DVD?" They were asked the same question about the weekend days.

Among the 193 children who participated in Palau, **time spent on TV watching per day is 2.9 hours/day** overall, 2.8 hours on weekdays, and 3.2 hours on weekends. The following table summarizes the distribution of duration of TV watching.

Table S.5.1. Hours per day of TV Watching

Hours per day child watches TV (n=156)	Percent of children		
	Per Day (adjusted for weekday and weekend)	Per Weekday	Per Weekend day
1/2 hour or less	5.2%	15.1%	7.8%
More than ½ hour up to 2 hours	38.9%	37.5%	34.4%
More than 2 hours up to 4 hours	29.5%	26.6%	28.7%
More than 4 hours up to 6 hours	17.6%	12.0%	20.3%
More than 6 hours up to 7 hours	8.8%	8.9%	8.9%
Total	100%	100%	100%

INACTIVE Video Games (Per day, Per Weekday, and Per Weekend day)

Parents were asked, "On a usual weekdays (Monday to Friday), how long on average a day does your child spend playing INACTIVE video games (DS, Play station, XBOX, Wii computer games, etc.)?" They were asked the same question about the weekend days.

Among the 193 children who participated in Palau, a total of 186 had data on the overall time spent on inactive video games. The **overall average among those 186 children**

is 1.3 hours/day (SD=1.3 hours). A total of 186 children had data on weekday, while 181 had information on weekend inactive video time. Average inactive video time on weekdays is 1.3 (SD=1.4) and on weekends is 1.3 (SD=1.4). The following table summarizes the distribution of duration of inactive video playing time.

Table S.5.2. Hours per day of Inactive Video Games

Hours per day child spent on inactive video games	Percent of children		
	Per Day (adjusted for weekday and weekend)	Per Weekday	Per Weekend day
1/2 hour or less	38.7%	46.2%	45.3%
More than ½ hour up to 2 hours	33.9%	31.2%	32.0%
More than 2 hours up to 4 hours	23.7%	17.2%	18.8%
More than 4 hours up to 6 hours	3.8%	5.4%	3.9%
More than 6 hours up to 7 hours	--	--	--
Total	100%	100%	100%

ACTIVE Video Games (Per day, Per Weekday, and Per Weekend day)

Parents were asked, "On a usual weekdays (Monday to Friday), how long on average a day does your child spend playing ACTIVE video games (DS, Play station, XBOX, Wii computer games, etc.)?" They were asked the same question about the weekend days.

Among the 193 children who participated in Palau, a total of 168 had data on the overall time spent on active video games. The **overall average among those 168 children is 1.5 hours/day** (SD=1.4 hour). A total of 168 children had data on weekday active video time. Average active video time on weekdays is 1.5 (SD=1.5). A total of 175 children had data on weekend active video time. Average active video time on weekend is 1.8 (SD=1.7). The following table summarizes the distribution of duration of active video

playing time.

Table S.5.3. Hours per day of Active Video Games

Hours per day child spent on active video games	Percent of children		
	Per Day (adjusted for weekday and weekend)	Per Weekday	Per Weekend day
1/2 hour or less	37.5%	41.1%	39.4%
More than ½ hour up to 2 hours	29.2%	31.6%	24.6%
More than 2 hours up to 4 hours	28.6%	22.0%	26.3%
More than 4 hours up to 6 hours	4.8%	5.4%	9.7%
More than 6 hours up to 7 hours	--	--	--
Total	100%	100%	100%

Screen Time - Overall

This variable was created by adding the hours for watching TV and DVDs, the hours playing active video games, and the hours playing inactive video games. The overall mean is a weighted average of weekday and weekend hours.

Among the 193 children who participated in Palau, 183 had data on the overall screen time, which averaged to 5.9 hours. A total of 180 had data on weekday screen time, which averaged to 5.6 hours. A total of 186 had data on weekend screen time, which averaged to 6.6 hours. The following table summarizes the distribution of duration of screen time.

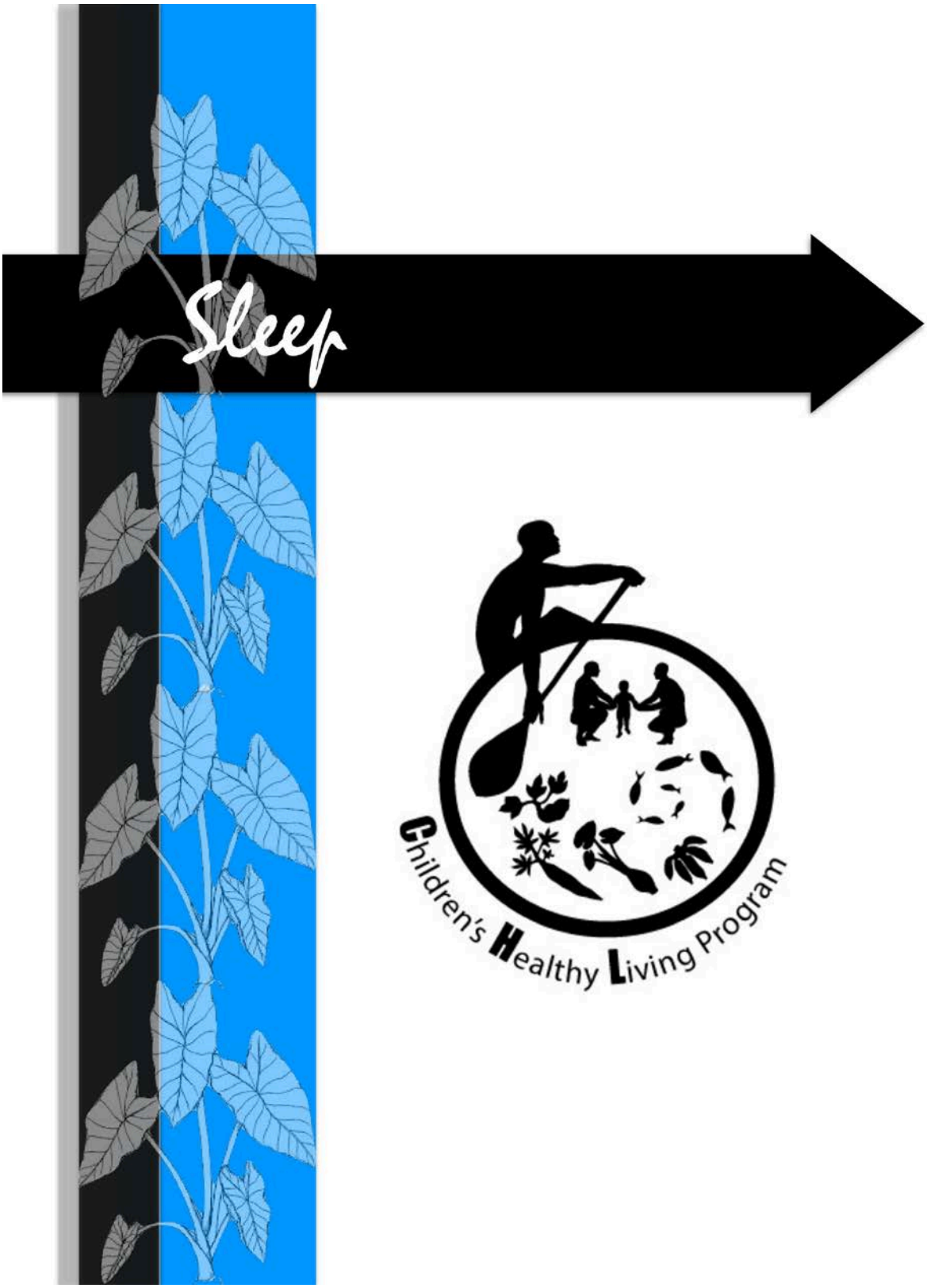
Table S.5.4. Hours per day of Screen Time

Hours per day child spent on screen time	Percent of children		
	Per Day (adjusted for weekday and weekend)	Per Weekday	Per Weekend day
1/2 hour or less	1.1%	5.6%	2.2%
More than ½ hour up to 2 hours	15.6%	15.0%	11.3%
More than 2 hours up to 4 hours	16.9%	21.7%	19.9%
More than 4 hours up to 6 hours	23.0%	20.0%	19.9%
More than 6 hours	43.2%	37.8%	46.8%
Total	100%	100%	100%

Summary

A total of 194 children were included in the analysis of screen time. Among them, average screen time, such as watching TV, video games, or DVD, or playing active or inactive video games was 6.5 hours

While the national recommendation is for each child to spend 2 or less hours on screens every day, only 16% of our study children met this recommendation. More 2-5 year olds (19%) than 6-8 year olds (7%) met this recommendation. A vast majority (84%) of children appear to be spending too much time watching screens! This is an opportunity for both parents and educators to intervene to help children spend less screen time.



Children's Healthy Living Program

Section 6. 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-hour 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 who chose over 13 hours, 13.5 hours was assigned instead; hence, the maximum hours are at 13.5 hours.

Some participants misunderstood the question but put down child's nap time 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 biologically implausible values.

Table S.6.1. Number and Percent of Children's Average Hours of Sleep per day by Age

Hours of sleep in 24 hours at night and in naps (on average and from parent / caregiver report)	Number	%
2 year olds	8	100%
Less than 9 hours	1	12.5%
9 hours to less than 11 hours	4	50.0%
11 hours or more (to 13.5 hours)	3	37.5%
3 – 5 year olds	131	100.0%
Less than 8 hours	9	6.9%
From 8 hours to less than 10 hours	45	34.4%
From 10 hours to 13.5 hours	77	58.8%
6 – 8 year olds	45	100%

Hours of sleep in 24 hours at night and in naps (on average and from parent / caregiver report)	Number	%
Less than 7 hours	2	4.4%
From 7 hours to less than 9 hours	9	20.0%
From 9 hours to 13.5	34	75.6%

Table S.6.2. Number and Percent of Children Meeting Recommended Hours of Sleep

Met recommended hours of sleep	Number	%
Two year olds met recommendation of 11 – 14 hours of sleep	3	37.5%
Three to five year olds met recommendation of 10 – 13 hours of sleep	77	58.8%
Six to eight year olds met recommendation of 9 – 11 hours of sleep	34	75.6%

The following questions were modified from The Tayside children's sleep questionnaire (McGreavey, Donnan, Pagliari, & Sullivan, 2005).

Table S.6.3. Number and Percent of Minutes to Fall Asleep

How long after going to bed does your child usually fall asleep?	Number	%
0 to less than 15 minutes	76	39.4%
15 to less than 30 minutes	73	37.8%
30 to less than 45 minutes	20	10.4%
45 to less than 60 minutes	9	4.7%
60 minutes and more	15	7.8%
Total	193	100%

Table S.6.4. Number and Percent of Children with Difficulty Getting to Sleep

The child has difficulty getting to sleep at night (and may require a parent to be present)	Number	%
This sleep behavior never occurs	100	51.8%
The behavior occurs once or twice a month	32	16.6%
Occurs one to two times a week	19	9.8%
Occurs between three and five nights a week	12	6.2%
The sleep behavior happens every night	30	15.5%
Total	193	100%

Table S.6.5. Number and Percent of Children Not Falling Asleep in Own Bed

Child does not fall asleep in his or her own bed.	Number	%
This sleep behavior never occurs	131	67.9%
The behavior occurs once or twice a month	21	10.9%
Occurs one to two times a week	15	7.8%
Occurs between three and five nights a week	5	2.6%
The sleep behavior happens every night	21	10.9%
Total	193	100%

Table S.6.6. Number and Percent of Children Waking Up at Night

Child wakes up two or more times during the night	Number	%
This sleep behavior never occurs	102	52.6%
The behavior occurs once or twice a month	53	27.5%
Occurs one to two times a week	21	10.9%
Occurs between three and five nights a week	8	4.2%
The sleep behavior happens every night	9	4.7%
Total	193	100%

Table S.6.7. Number & Percent of Children Difficulty Falling Asleep After Awakening

After waking up in the night, child has difficulty falling asleep again by him or herself.	Number	%
This sleep behavior never occurs	157	81.4%
The behavior occurs once or twice a month	21	10.9%
Occurs one to two times a week	9	4.7%
Occurs between three and five nights a week	--	--
The sleep behavior happens every night	6	3.1%
Total	193	100%

Table S.6.8. Number and Percent of Children Sleeps Some of the Night in Parent's Bed

Child sleeps in the parent's bed at some time during the night	Number	%
This sleep behavior never occurs	70	36.3%
The behavior occurs once or twice a month	35	18.1%
Occurs one to two times a week	21	10.9%
Occurs between three and five nights a week	11	5.7%
The sleep behavior happens every night	56	29.0%
Total	193	100%

Table S.6.9. Number and Percent of Children Needing Parent to Replace a Comforter After Waking in Night

If child wakes, he or she uses a comforter (e.g. pacifier or binky) and requires a parent to replace it.	Number	%
This sleep behavior never occurs	156	80.8%
The behavior occurs once or twice a month	15	7.8%
Occurs one to two times a week	6	3.1%
Occurs between three and five nights a week	1	0.5%
The sleep behavior happens every night	15	7.8%
Total	193	100%

Table S.6.10. Number and Percent of Children Wanting a Drink During the Night

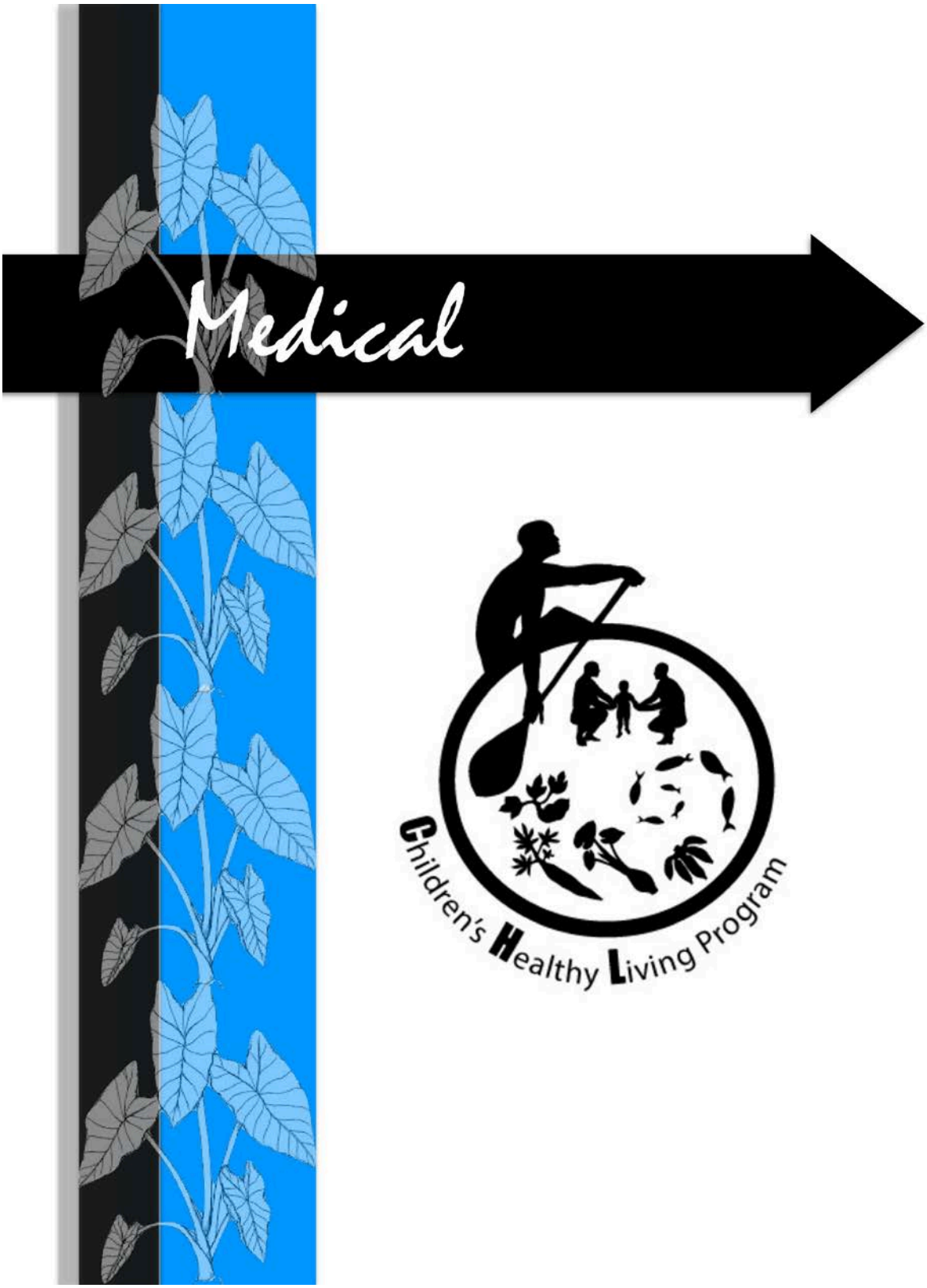
Child wants a drink during night (including breast or bottle-feed)	Number	%
This sleep behavior never occurs	145	75.1%
The behavior occurs once or twice a month	26	13.5%
Occurs one to two times a week	11	5.7%
Occurs between three and five nights a week	2	1.0%
The sleep behavior happens every night	9	4.7%
Total	193	100%

Table S.6.11. Number and Percent of Children with Sleeping Difficulties

Do you think your child has sleeping difficulties?	Number	%
No	187	97.4%
Yes	5	2.6%
Total	192	100%

Summary

A total of 182 children were included in the analysis of sleep duration. The average number of hours of sleep per day was 9.9. Among the 137 children 2-5 years old, 38% met the national recommendation of sleep of between 11-13 hours daily (11-13 hours in the graph). Another 57% of children slept more than 8 hours but less than 11 hours daily (8-10 hours in the graph). And 5% of children slept less than 8 hours (<8 hours in the graph). This is an opportunity for both parents and educators to intervene to help children get more sleep.



Children's Healthy Living Program

Section 7. Medical

Parents answered the question: Does your child have any current medical conditions diagnosed by a doctor? Among the 193 children, 27 (14.0%) reported that their children had a medical conditions diagnosed by a doctor. The top medical condition was asthma (23, 12.4%).

Dental

Table S.7.1. Frequency of Brushing Teeth

How often does your child brush his/her teeth?	Number	Percent
More than once per day	150	79.0%
Once per day	38	20.0%
Once per week	--	--
Once per year	1	0.5%
Never	1	0.5%

Table S.7.2. Seen by Dentist

In the past 12 months, did your child ever see a dentist for any routine preventive dental care?	Number	Percent
No	74	39.2%
Yes	115	60.9%

Early Life & Feeding Of A Child

Section 8. Early Life and Feeding of Child

Birth Weight

Among the 193 children who participated from Palau, a total of 149 had information on birth weight. The distribution of birth weight into three groups is summarized in the following table.

Table S.8.1. Number and Percent of Children by Birth Weight

Birth Size	Number	%
Low birth weight < 2500 g	17	11.4%
Healthy birth weight (2500 – 4000 g)	115	77.2%
High birth weight > 4000 g	17	11.4%

Among the 193 children who participated in Palau, a total of 42 had information on birth length. Among the 42 children, 15 (35.7%) had birth length below 5 percentile using the CDC 2000 reference data, which is at 45.57 cm implying “stunting”, and reflecting fetal growth restriction.

Early Feeding Pattern

Among the 193 children who participated in Palau, a total of 186 had information on breastfeeding. Among the 186 children, 157 (84.4%) of children were reported to be ever breastfed.

Table S.8.2. Number and Percent of Children Ever Breastfed or Fed Breast Milk

Child ever Breastfed or fed Breastmilk	Number	%
Yes	157	84.4%
No	29	15.6%
Total	186	100%
If Yes, (about children who were ever breastfed)		

Mean age child stopped breastfeeding or being fed breast milk (months) (n=109)	12.3 months (SD=10.2)

Among the 193 children who participated in Palau, a total of 186 had information on formula feeding. Among those 186 children, 132 (71.0%) children were reported to be ever formula fed. Mean age of children started formula feeding or stopped formula feeding is reported in the following table.

Table S.8.3. Number and Percent of Children Ever Fed Formula

Child ever fed formula	Number	%
Yes	132	71.0%
No	54	29.0%
Total	186	100%
If Yes, (about children who were fed formula)		
Mean age child first fed formula (months) (n=119)	4.8 months	
Mean age child completely stopped drinking formula (months) (n=114)	19.4 months	

A total of 166 out of the 193 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 7.7 months.

Household Demographics & Measures

Section 9. 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

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

Table S.9.1. Number and percent of caregiver's relationship to child

Relationship	Number	Percent
Biological mom	119	61.7%
Birth dad	32	16.6%
Grandmother	10	5.2%
Legal guardian, other	16	8.3%
Adoptive mom	12	6.2%
Step mom	1	0.5%

Marital Status

A total of 155 out of the 156 participants had marital status information of the respondent (see the following table).

Table S.9.2. Frequency and Percent of Caregiver's Marital Status

Marital Status	Number	Percent
Married	141	73.4%
Single and living with boyfriend, girlfriend, or partner	9	4.7%
Single and not living with boyfriend, girlfriend, or partner	14	7.3%
Divorced	14	7.3%
Separated	5	2.6%
Windowed	3	1.6%
Other	6	3.1%

Household Size and Multi-generation Households

All 193 children had information on the number of people lived in the same household and their relationship to the child. Among them, 92 (47.7%) were from multi-generation households.

Mean size of household was 5.7, with the minimum of 2 and maximum of 53 persons.

Education

The education levels of the caregivers – (the parents or guardians) are shown in table below.

Table S.9.3. Number and Percent of Caregiver's Education Level

Education	Number	Percent
Never attended school or only kindergarten	2	1.0%
Grades 1 up to 8 (elementary to middle)	6	3.1%
Grades 9 to 11(some high school)	27	14.1%
Grades 12 or GED (high school graduate)	56	29.2%
College or technical school 1 to 3 years	74	38.5%
College 4 years or more	27	14.1%
Total	192	100%

Employment Status of the Caregiver Participants

Among the 193 children who participated in Palau, all had information on whether the respondent was employed for wages/salary, whether he/she was self-employed, whether he/she was out of work for more than a year or less than a year, whether the respondent was a homemaker, a student, or unable to work. The majority of participants (190) had information on whether the respondent had more than one job.

Table S.9.4. Number and Percent of Caregiver's Employment Status

Employment	Number	Percent
Employed for wages / salary	124	64.3%
Self-employed	14	7.3%
Subsistence Living (fisherman / farmer)	3	1.6%

Out of work (less than 1 year)	10	5.2%
Out of work (more than 1 year)	13	6.7%
Homemaker	18	9.3%
Student	8	4.2%
Unable to work	6	3.1%
Retired	7	3.6%
Has more than one job	11	5.7%

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

Household income level

Among the 193 children who participated in Palau, 181 had information on annual household income from all sources over the past 12 months. The following table summarizes this information.

Table S.9.5. Number and Percent of Caregiver's Household Income Level

Annual Household Income (past 12 months)	Number	Percent
Under $2500	39	21.6%
From $2500 to less than $5000	30	16.6%
Under $10,000	42	23.2%
From $10,000 to less than $20,000	40	22.1%
From $20,000 to less than $35,000	21	11.6%
From $35,000 to less than $60,000	5	2.8%
From $60,000 to less than $75,000	2	1.1%
$75,000 or more	2	1.1%
Total	181	100%

Religion

Among the 193 children, a total of 187 had information on family's religious affiliation. Out of the 187, 6 (3.2%) reported no religious affiliation. Among the 181 with any type of religious affiliation, the distribution of different religious affiliations is presented in the following table. A total of 106 had information on how often they engage in religious activities. The mean number of times per month attending religious activities was 4.1 among those participants.

Table S.9.6. Number and percent of respondents' religious affiliation

Religion Affiliation	Frequency	Percent
Catholic	94	51.9%
Protestant	40	22.1%
Evangelical Covenant	17	9.4%
Christian	9	5.0%
Other (Modekngei, Apostolic)	9	5.0%
Mormon/Latter-day Saints	8	4.4%
Pentecostal	4	2.2%
Total	187	100%

*Other including Bahai, Jehovah's Witness and those which cannot be specified.

Food Security / Resource Availability

Food security and 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 qquestions 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 run out before the end of the month. Among the 193 children who participated in Palau, a total of 187 had information on whether money for food runs out, while 188 provided information on whether money for utilities run out or not. The following table presents the answers.

Table S.9.7. Number and Percent of Caregiver's Money for Food and Utilities

Food Insecurity and Utilities in past 12 months	Number	%
Money runs out for food before the end of the month.		
Never	79	42.3%
Seldom	30	16.0%
Sometimes	53	28.3%
Most times	16	8.6%
Always	9	4.8%
Money for household utilities (water, fuel, etc.) runs out before the end of the month.		
Never	81	43.1%
Seldom	35	18.6%
Sometimes	46	24.5%
Most times or always	18	9.6%
Always	8	4.3%

Water Source

Participants were asked, where they obtained the water used at home, and were asked to include water used for all purposes (cleaning, cooking, and etc.). Among the 193 children who participated in Palau, a total of 192 had information on the family's water source. Participants could select more than one response. The following table presents the answers.

Table S.9.8. Source of Water

Source of water used at home for all purposes	Number	Percent
Household Tap	141	73.4%
River/ Stream/ Creek	6	3.1%
Community Rain Water Collection	20	10.4%
Private Tap in Yard	10	5.2%
Public/ Shared Standpipe	30	15.6%
Purchased bottled water	53	27.6%
Home Rain water collection	46	24.0%
Neighbor's Tap	--	--
Spring	--	--
Refilling Station	33	17.2%

Culture

The degree of participants' own group's cultural and U.S. mainland cultural identifications were assessed using an acculturation questionnaire originally designed for use with Native Hawaiians (Kaholokula, Grandinetti, Nacapoy and Chang, 2008). The following tables summarize responses to those questions.

Table S.9.9. Number and Percent of Caregiver's Knowledge of Traditional Culture and Lifestyle

Knowledge of traditional culture & lifestyle	Number	Percent
Very knowledgeable	74	38.3%
Somewhat knowledgeable	92	47.7%
Neutral or no response	9	4.7%
Somewhat not knowledgeable	11	5.7%
Not at all knowledgeable	7	3.6%

Table S.9.10. Number and Percent of Caregiver's Involvement with Traditional Culture and Lifestyle

Involved with traditional culture & lifestyle	Number	Percent
Very involved	54	28.4%
Somewhat involved	86	45.3%
Neutral or no response	15	7.9%
Somewhat not involved	24	12.6%
Not at all involved	11	5.8%

Table S.9.11. Number and Percent of Caregiver's Feelings Toward Traditional Culture and Lifestyle

Feel towards traditional culture & lifestyle	Number	Percent
Very positive	70	38.5%
Somewhat positive	83	43.2%
Neutral or no response	24	12.5%
Somewhat negative	12	6.2%
Very negative	3	1.6%

Table S.9.12. Number and Percent of Caregiver's Association with Traditional Culture and Lifestyle

How often associate with people of your traditional culture & lifestyle	Number	Percent
Most of the time	74	38.5%
Somewhat often	70	36.5%
Neutral or no response	27	14.1%
Very little of the time	17	8.8%
Not at all	4	2.1%

Table S.9.13. Number and Percent of Respondents' Knowledge of U.S. Mainland/Lower 48 Culture and Lifestyle

Knowledge of U.S. Mainland / Lower 48 culture and lifestyle	Number	Percent
Very knowledgeable	36	18.8%
Somewhat knowledgeable	75	39.1%
Neutral or no response	24	12.5%
Somewhat not knowledgeable	27	14.1%
Not at all knowledgeable	30	15.6%

Table S.9.14. Number and Percent of Caregiver's Involvement in U.S. Mainland/Lower 48 Culture and Lifestyle

Involvement with U.S. Mainland / Lower 48 culture and lifestyle	Number	Percent
Very involved	11	5.8%
Somewhat involved	66	34.9%
Neutral or no response	45	23.8%
Somewhat not involved	29	15.3%
Not at all involved	38	20.1%

Table S.9.15. Number and Percent of Caregiver's Feelings Toward U.S. Mainland/Lower 48 Culture and Lifestyle

Feeling towards U.S. Mainland / Lower 48 culture and lifestyle	Number	Percent
Very positive	43	22.5%
Somewhat positive	75	39.3%
Neutral or no response	50	26.2%
Somewhat negative	16	8.4%
Very negative	7	3.7%

Table S.9.16. Number and Percent of Caregiver's Association with U.S. Mainland/Lower 48 Culture and Lifestyle

How often associate with U.S. Mainland / Lower 48 culture and lifestyle	Number	Percent
Most of the time	25	13.0%
Somewhat often	54	28.1%
Neutral or no response	44	22.9%
Very little of the time	29	15.1%
Not at all	40	20.8%

Betel Nut, Tobacco and Alcohol

Betel nut

Among the 193 participants, a total of 187 who participated in Palau had information on Betel nut chewing. Out of the 187, 25 (13.4%) reported having never chewed. Among the 162 who indicated that they had ever chewed, 148 (79.6%) indicated that they were

current chewers.

Table S.9.17. Betel Nut Usage

Ever chewed Betel Nut	Number	Percent
Yes	162	86.6%
No	25	13.4%
Do you now chew Betel Nut?		
Yes	148	79.6%
No	38	20.4%

Participants were asked about items added to Betel quid when chewing (tobacco, line, betel leaf etc.). The following tables provide their responses.

Table S.9.18. Betel Nut mixed with Tobacco

Tobacco included when chewing betel nut (from cigarette, snuff, twist tobacco, Red Man)	Number	Percentage
Yes	137	91.3%
No	13	8.7%
Lime included when chewing betel nut?		
Yes	153	100.0%
No	0	0%
Betel Leaf included when chewing?		
Yes	112	74.7%
No	38	25.3%
Added alcohol to any of the components of your chew (Nut, leaf, lime, or tobacco)?		
Yes	9	6.0%
No	142	94.0%

Participants were also asked if there were other household members who chewed Betel nut. One hundred and fifty (81.1%) participants in Palau indicated that there were other household members who chewed. The mean number of household members who chewed was 2.4.

Table S.9.19. Household Member Betel Nut Usage

Other household members chew Betel nut?	Number	Percentage
Yes	150	81.1%
No	35	18.9%
How many household members chew Betel nut?		
Average number of household members who chew (n=148)	2.4 members	

Tobacco

Among the 193 participants, a total of 188 had information on Tobacco use. Out of these 188 participants in Palau, 34 (18.1%) reported current use of tobacco products. Mean number of tobacco products used per day was 9.8 sticks/pipes. Participants also reported whether other members of the household used tobacco, with the mean number of household tobacco users being 2.0 persons.

Table S.9.20. Tobacco Use

Do you now use any tobacco products (smoking cigarettes, cigars or pipes; chewing smokeless tobacco); Aside from adding to a betel quid?	Number	Percentage
Yes	34	18.1%
No	154	81.9%
Other household members use tobacco		
Yes	92	48.7%
No	97	51.3%
How many sticks/pipes do you smoke daily?		

Mean number of sticks/pipes smoked daily (n=17)	9.8 sticks/pipes
How many household members use tobacco (with or without betel nut)?	
Mean number of household members using tobacco (n=90)	2.0 persons

Alcohol

Among the 193 participants, a total of 185 had information on Alcohol consumption. Out of these 185 participants in Palau, 63 (34.1%) reported having drank alcohol within the past 30 days. Participants also reported whether other members of the household drank alcohol, with the mean number of consumers being 1.6 persons.

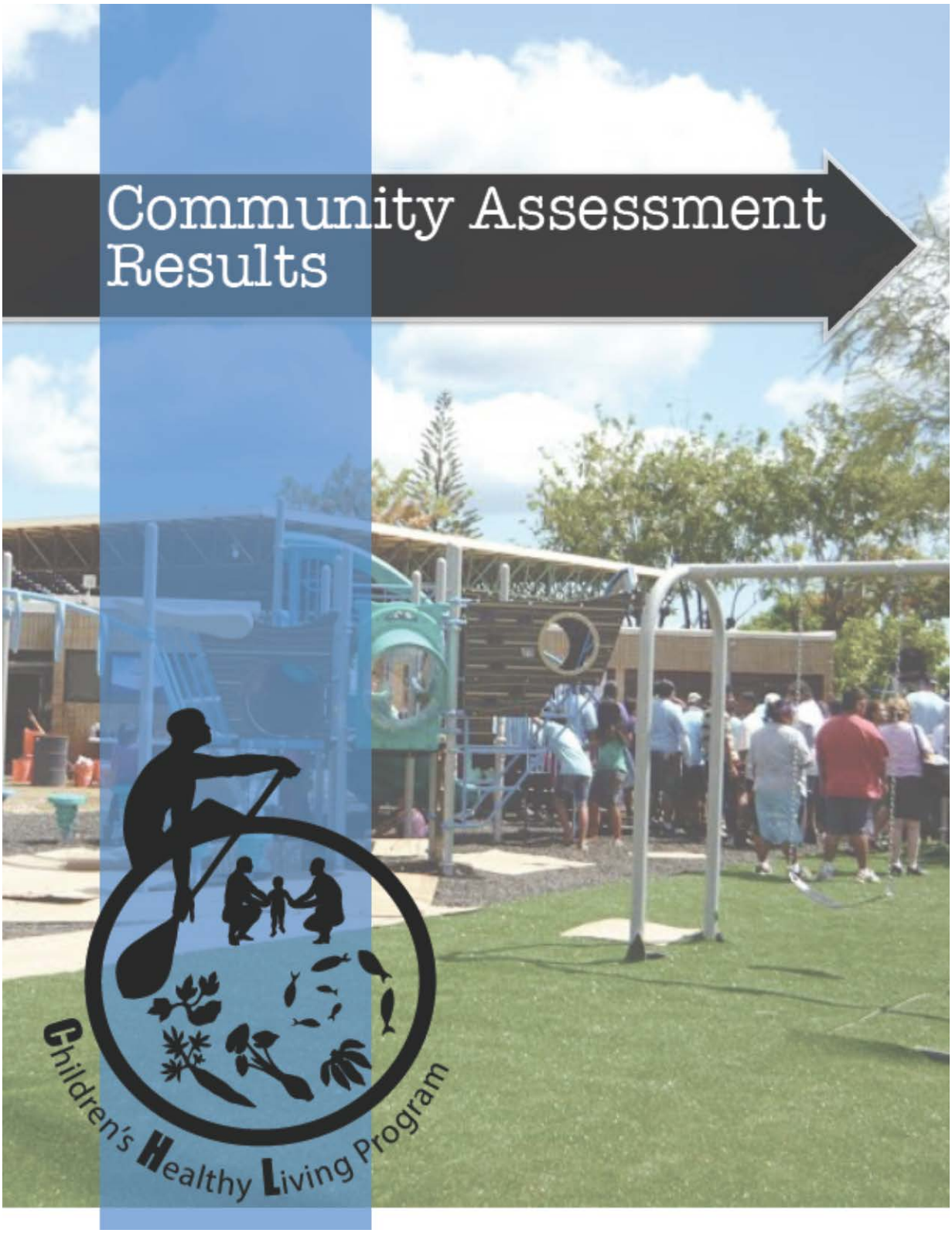
Table S.9.20. Alcohol Use

Drank alcohol within the past 30 days?	Number	Percentage
Yes	63	34.1%
No	122	66.0%
Other household members drank alcohol within the past 30 days?		
Yes	76	42.2%
No	104	57.8%
How many household members drank alcohol within the past 30 days?		
Mean number of household members who drank alcohol (past 30 days) (n=74)	1.6	

The following data are presented only for the 63 participants in Palau who responded "*Yes*" to drinking alcohol in the past 30 days. They were asked to consider the past 30 days when they answered this question.

Table S.9.21. Number of Alcohol Drinks

How many drinks did you drink per day (past 30days)?	Number (Percentage)			Mean number of drinks	
	1-2 drinks	3-4 drinks	5 + drinks	Mean	
Cans of Beer	5 (11.9)	6 (14.3)	31 (73.8)	n= 42	11.9
Bottles of Beer	--	3 (37.5)	5 (62.5)	n= 8	7.5
Glasses of Wine	2 (33.3)	1 (16.7)	3 (50.0)	n=6	5.3
Shots of Liquor	--	3 (75.0)	1 (25.0)	n=4	3.7
Glasses of Mixed Drinks	2 (100)			n=2	1.5
Cups of Fermented Yeast	--	--	--	--	--
Cups of Tuba Drink (Coconut Sap)	--	--	--	--	--
Participant's total alcohol drinks / day (beer + wine + mixed drinks + yeast + tuba)					
Cups of Kava	--	--	--	--	


Community Assessment Results
Children's Healthy Living Program

VI. Community Assessment Results

The Community Assessment Toolkit or CAT is a collection of data-recording forms to evaluate the food and physical activity environments of communities. These enabled us to study determinants of healthy eating, physical activity, and obesity among youth.

Section 1. Food Resources and Environment

The assessment of the food environment included inventories and surveys of fast food restaurants, and food outlets, with documents adapted from other surveys (Bridging the Gap (BTG) and Community of Excellence (CX3).

- CX3 Scores for Food outlet
  a. Accepts WIC and Food stamps / SNAP/ EBT
  b. Availability of fresh fruit and quality of fruit
  c. Availability of fresh vegetable and quality of vegetable
  d. Other healthful foods
  e. Unhealthy products
  f. Nutrition information
  g. Number of healthy and unhealthy ads present inside and outside the food outlet
  h. Walkability
- **Fast food**
  i. Advertisements that promoted price
  j. Advertisements that included sugar-sweetened beverages
  k. Number of healthy food options on the menu
  l. Number healthy beverage options

  Number of fast food restaurants / jurisdiction

Section 2. Assessment of Parks

The Form used to assess parks is modified from the Bridging the Gap Program, University of Illinois at Chicago, Park Observation Form (See Appendix for form used). The purpose of this survey is to improve our understanding of accessibility of park settings and quality of opportunities for physical activity in these settings among CHL communities. A complete list of parks that were located within the community boundary, or on the periphery, and their locations was compiled for each community by local staff. Staff then assessed up to ten parks per community or all of them when there were less than ten parks in a community. Staff where instructed to spend about 30 minutes walking through each park to survey its accessibility, setting, amenities, sports fields (e.g., soccer, football, baseball), courts (e.g., tennis, basketball, volleyball), walking/running/biking trails, and incivilities.

Eligible parks: Local municipal or County Park that is open to the public

- Has equipment used for physical activity or play, including playing fields and courts AND/OR has green space or natural features, benches, walking paths, picnic tables, or other park features

- On-the-ground parks only. Must also have a sign designating it as a public park <u>if no sports features are present</u>

Exclusions: Campgrounds, golf courses, forest preserves, stadiums, zoos, state and national parks, private/resident-only (e.g., neighborhood association) parks, stand-alone fields/courts associated with a school.

Park Setting, Parking, Sidewalks, and Amenities

Upon entering the park staff assessed the presence of certain park settings, parking and sidewalk features, and certain park amenities.

Observations on park setting included whether it was a public park, whether it was adjacent to a school, and whether it shared sports features with a school. In Palau there were 7 parks with this information. Among the 7 parks, 6 (85.7%) were a public park; none were adjacent to schools and didn't share sports features with any adjacent schools. One location in Palau (14.3%) was identified as a communal space.

All of the parks (100%) had on-site parking, while 4 (57.1%) parks had an on-site parking with overhead lighting, one park (14.3%) had bicycle parking. All seven parks surveyed had information on sidewalk, of which 4 (57.1%) had sidewalks leading up to the entrance of the park as well as sidewalks with overhead lighting.

Observation on park amenities included whether it had closing time signage, restrooms, showers, and beverage vending machine. Among the 7 parks with such information, the majority (85.7%) had restrooms, while 4 (57.1%) had closing time signage. Five of the parks (71.4%) had showers and none had beverage vending machines.

Table S.2.1. Park Setting (N=7)

Park Setting	Number	Percent
Setting (n=7)		
Public Park	6	85.7%
Adjacent to a school	0	0%
Shares sports features with a school	0	0%
Communal Space	1	14.3%
Parking (n=7)		
Parking on-site available (not including street parking)	7	100.0%
Parking has lights	4	57.1%
Bicycle parking racks or cages available	1	14.3%
Sidewalk (n=7)		
Sidewalks on street lead up to the entrance*	4	57.1%

Sidewalks have lighting	4	57.1%
Amenities (n=7)		
Park has closing time signage	4	57.1%
Restrooms present	6	85.7%
Showers present	5	71.4%

Park Access and Barriers to Entry

Staff assessed each park for an entrance fee, signage limiting entry and any physical barriers around the perimeter of the park. Among the parks surveyed in Palau, all had a response on the question of whether there was an entrance fee. Two parks (28.6%) had a fee associated with entrance. Four (57.1%) had signage indicating the park name, 4 (57.1%) had signage stating that public use of the park was limited to specific times, none of the parks had signage indicating that the park was private or has restricted access at all times, and none had a locked fence or other physical barrier around the perimeter.

Table S.2.2. Park Access and Barriers (N=7)

Access and barriers	Number	Percent
Signage indicates park name	4	57.1%
Signage states public use of area is limited to specific times	4	57.1%
Signage states area is private or restricted access at all times	0	0%
Locked fence or other physical barrier around the perimeter prevents public access	0	0%

Sports Features

Staff assessed each park for a specific list of sports features to determine the number of each feature present and whether such a feature had lighting or not. Staff also rated the condition of each feature.

Feature Descriptions (These are detailed further in APPENDIX B)

- **Field, Multi-use:** A multi-use field is a large, flat, open space usable as an athletic field for more than one sport.
- **Field, Football:** A field should have the appropriate layout, markings, and/or equipment in order to be identified as a football field.
- **Field, Baseball:** A field should have the appropriate layout, markings, and/or equipment in order to be identified as a baseball field.
- **Field, Soccer:** A field should have the appropriate layout, markings, and/or equipment in order to be identified as a soccer field.
- **Court, Basketball:** A court should have the appropriate layout, markings, and/or equipment in order to be identified as a basketball court**.**
- **Court, Tennis:** A court should have the appropriate layout, markings, and/or equipment in order to be identified as a tennis court**.**
- **Court, Volleyball:** A court should have the appropriate layout, markings, and/or equipment in order to be identified as a volleyball court.
- **Court, Multi-use:** This includes large courts that contain equipment or the capability of holding equipment for different sports such as both basketball and volleyball.
- **Running/Walking Track:** A running/walking track may be located on the perimeter of a field or as part of a track and field stadium. Most tracks will have lane and/or distance markings.
- **Pool:** This includes --
    - A pool that is at least 3 feet deep at the deepest end.
    - A wading pool that is less than 3 feet deep at the deepest end and intended for use by small children.
- **Playground Area:** A playground area includes swings, monkey bars, climbing

apparatuses, slides, see-saws, spring features, and other items meant for children's play. In CHL survey, staff was trained to count only the number of areas, not the specific equipment or apparatuses.

- **Skateboarding Facilities:** Skateboarding facilities include ramps, tracks, and other apparatuses meant for use by skateboarders or in-line skaters. In CHL survey, staff was trained to count only the number of rooms or areas, not the specific equipment or apparatuses.
- **Exercise Stations with or without Signage**: Exercise stations are designated activity points. Exercise stations may also be called Fitness Trails or Fit Trails.
- **Rock Climbing Wall**: A rock climbing wall is a natural or artificially constructed outdoor wall with grips for hands and feet, used for climbing.

Condition of the Feature

Staff rated the condition and the presence of lighting for each feature item. The condition of a feature could be recorded as "poor", "okay/good", or "not rated". When there was more than one item per feature, each item was evaluated for condition while the presence of lighting was assessed across all items in a feature. For example, if a park had 3 basketball courts and 2 were in okay condition, 1 was in poor condition, and 1 of them had lighting, then the staff would record the number of basketball courts as 3, 2 of which are rated okay/good, 1 rated as poor, and one basketball courts had lighting.

Feature condition was rated based on the feature's surface and related equipment, if any was available for the feature. Ultimately the feature condition rating was related to whether or not players could safely play or engage in physical activity on a feature without risking injury or falling. Staff took into consideration the type of activities that would take place on or within a particular feature as well as the material comprising the surface when considering its condition. When assessing the condition of equipment used for physical activity, staff took into consideration age, functionality, wear and tear, damage such as dents or sharp edges, missing pieces, and rust. For example, if a playing surface was composed of concrete, staff assessed whether concrete covered

the entire surface and looked for cracks or uneven slabs in the concrete surface.

Survey Results for Sports Features

Across the seven parks surveyed in Palau, there were a total of 17 features, of which 8 were rated as ok/good, 8 were rated as poor, and 8 were not rated. Playgrounds were the most frequent features (6), followed by pools (2). Playgrounds may be of particular interests to families with young children. In Palau, of the 6 playgrounds all were rated ok/good. The following table (Table S.2.3) summarizes the number of each sports feature, the conditions of the feature, and whether lighting was present for the feature across the parks surveyed in Palau.

Table S.2.3. Sports Features Across all 6 Parks in Palau

Feature	Total number of the feature	Condition of the Feature			Number of features w/ Lighting
		OK/Good	Poor	Not rated	
Field multiuse	1	1	0	0	1
Field football	0	0	0	0	0
Field baseball	0	0	0	0	0
Field soccer	0	0	0	0	0
Court basketball	0	0	0	0	0
Court tennis	0	0	0	0	0
Court volleyball	1	1	0	0	1
Court multiuse	0	0	0	0	0
Track	0	0	0	0	0
Pool	2	2	0	0	2
Playground	6	6	0	0	5
Skateboarding	1	1	0	0	1
Exercise Stations	1	1	0	0	1
Rock Climbing	0	0	0	0	0

Park Features and Amenities

Staff assessed each park for a specific list of features and amenities to determine if the feature or amenity was present and to rate the condition of the surface or feature.

When staff were unable to determine the condition of one or more features of a specific type (if more than one present), they rated the features of that type that were able to be rated. When any features of a specific type could not be rated due to construction/ repairs or seasonal closure staff selected not rated.

Feature or Amenity Descriptions (These are detailed further in Appendix B):

- **Green Space**: This includes natural or landscaped space not specifically designated for physical activity
- **Beaches:** This includes natural or man-made beaches on the edge of water features such as lakes, rivers, and lagoons, as well as beaches at coastal parks.
- **Beaches Swimmable:** This includes any beach area with minimal shore break for a 3-5 year old to swim in.
- **Beaches Recreational:** This includes any beach with facilities for family picnics, barbecues, sports, water-sports, etc.
- **Beaches with Lifeguard:** This may be a swimmable beach, recreational beach, or both wherein lifeguards are present to monitor activities and to alert families of changing currents.
- **Other Water Features**: This includes natural or man-made bodies of water that may be present, including streams, creeks, rivers, ponds, lakes, lagoons, and in case of coastal parks, ocean.
- **Shelters**: This refers to a permanent structure with a roof to protect users from rain or sun. Walls are not required. Cloth or lattice canopies over picnic tables or exercise equipment and pergolas are not included.
- **Picnic Tables, Shaded:** This refers to a table top with benches, including outdoor lunch tables. Shade can be provided by tree or a structure.
- **Picnic Tables, not Shaded:** This refers to a table top with benches including

outdoor lunch tables. These include tables without trees or a structure.

- **Benches**: Benches are structures designed to function as seating. These do not include picnic tables or retaining/supporting/landscaped walls whose primary function is not seating.
- **Drinking Fountains**: These include freestanding or attached water dispensers intended for drinking.
- **Decorative Water Fountains**: These include ornamental structures from which jet(s) or stream(s) of water is issued and reflecting pools. Decorative fountains are not used for drinking or swimming.
- **Trash Containers**: These are receptacles for litter and refuse that can be made of metal, plastic, or paper/plastic bags. They may be stand-alone or attached to a building.
- **Grills/Fire Pits**: These are structures designed for cooking meats or other foods over open fire. A fire pit may be built directly into the ground or may be a wide and low metal container that holds coals or wood.
- **Fence:** Large areas of the park are enclosed by a fence.
- **Trails**: These include paved or unpaved pathways or footpaths for walking, biking, roller-skating, etc. Trails are distinct from running/walking tracks in that they tend not follow a strict oval shape, but will usually follow an irregular direction and cover a greater distance than a track.

Survey Results of Park Features and Amenities

Among the 7 parks in Palau, there were a total of 54 features and amenities, of which all 50 were rated as ok/good. The most common features and amenities present were benches, green space, and picnic tables with and without shade. The following table summarizes the total number and condition of each individual feature/amenities which was assessed.

Table S.2.4. Park Features and Amenities Across all 6 Parks in Palau

Feature	Total Number of the feature	Condition of the Feature		
		OK/Good	Poor	Not rated
Green Space	6	6	0	0
Beach swim	5	5	0	0
Beach recreational	5	5	0	0
Beach lifeguard	1	1	0	0
Waterpark	3	3	0	0
Shelters	3	3	0	0
Picnic Tables w/Shade	6	6	0	0
Picnic Tables w/o Shade	6	6	0	0
Benches	7	7	0	0
Drinking fountain	0	0	0	0
Décor fountain	0	0	0	0
Trash bins	7	7	0	0
Grills	4	4	0	0
Fence	1	1	0	0
Trails	0	0	0	0

Incivilities

Staff assessed each park for a list of incivilities and how much each was present. The term incivility is used to describe items in the environment that might discourage physical activity. These items are often signs of area deprivation or markers of blight. The following items in this section were used to assess the physical disorder of the park

grounds environment.

- **Garbage/Litter:** Includes paper, packaging, and other items of refuse not included in other categories below.
  - **Broken Glass:** Includes any types of broken glass, such as bottles, etc.
- **Graffiti/Tagging:** Refers to “unapproved” writing such as painted or drawn signs or symbols (e.g., gang insignia) on the building and/or exterior property. Do not include painted murals or public art.
- **Evidence of Alcohol Use:** This includes beer or other alcohol-related bottles, cans or caps littering the ground or in/around overflowing trash cans. You do not need to check inside the trash cans for evidence of alcohol use.
- **Evidence of Substance Abuse:** This includes syringes, baggies, rolling papers, etc.
- **Sex Paraphernalia:** This includes condoms, condom wrappers, or other contraceptive device/material, or visible pornographic reading material.
- **Dog Refuse:** There is dog refuse visible.
- **Dogs Unattended:** There are dogs who wander the facility or on a leash.
- **Vandalism:** There are evidences of broken windows or other broken features.

Staff looked for incivilities throughout the park and assigned a score for each incivility type based upon the amount that was present across the park settings. The possible ratings were: none (0), a little (1), some (2), and 3 (a lot). For the community, average rating for each of the item was used. Mean rating across all 9 items were then used as an overall rating of incivilities across all parks surveyed in that community. See Appendix B for a detailed protocol on how each incivility was rated for amount.

Among the seven parks in Palau, there were some incivilities (mean= 0.4; SD=0.4). Across the parks in Palau, there was on average, a little bit of garbage, graffiti/tagging, evidence of alcohol use, broken glass, unattended dogs and dog refuse. There was no vandalism present across any of the parks (Table S.2.5).

Table S.2.5. Average Amount of Each Incivility Across 6 Parks in Palau

Incivility Type	Amount
Garbage	A little
Broken glass	A little
Graffiti/Tagging	A little
Evidence of Alcohol use	A little
Evidence of Substance Abuse	A little
Sex Paraphernalia	A little
Dog Refuse	A little
Dogs Unattended	A little
Vandalism	None

The original form can be viewed at:

http://www.bridgingthegapresearch.org/_asset/vnb0e7/BTGCOMP_Park_2012.pdf

Section 3. Assessment of Schools

The tool used to assess schools is modified from the Bridging the Gap Program, University of Illinois at Chicago, School Observation Form (See APPENDIX for form used). The purpose of this survey is to improve our understanding of the availability and quality of physical activity features that are located on schools grounds in CHL communities. A complete list of schools that were located within the community boundary, or on the periphery, and their locations was compiled for each community by local staff. Staff then assessed up to ten schools per community or all of them when there were less than ten schools in a community. Staff were instructed to spend about 30 minutes walking through each school to survey its accessibility, setting, amenities, sports fields (e.g., soccer, football, baseball), courts (e.g., tennis, basketball, volleyball), other features (e.g. track, pool, and playground) and incivilities.

Eligible schools: All school grounds were eligible for assessment. This includes schools sharing some sports features with an adjacent park.

School Setting, Parking, Sidewalks, and Amenities

Upon entering the school staff assessed the presence of certain school settings, parking and sidewalk features, and certain school amenities.

Observations on school setting included whether it was adjacent to a park. In Palau there were 19 schools with this information. Among the 19 schools, 19 had information on whether the school is adjacent to a park. Out of those 1 schools, 1 (5.3%) were adjacent to a park, and 0 (0%) shared sports features with an adjacent park.

Among the 19 schools, 18 (94.7%) had information on on-site parking, while 15 (79%) of schools had an on-site parking with overhead lighting, and 0 (0%) had bicycle parking. Only 5 (26.3%) of schools had a sidewalk leading up to the entrance of the school, while 4 (21.1%) of school had sidewalks with overhead lighting.

Observation on school amenities included whether it had closing time signage,

restrooms, showers, and beverage vending machine. Among the 19 schools with such information, 9 (47.4%) had closing time signage, all 19 (100%) had restrooms, 8 (42.1%) had showers, and 0 (0%) had beverage vending machines.

Table S.3.1. School Setting (N=8)

School Setting	Number	Percent
Setting (n=7)		
Adjacent to a park	1	5.3%
Shares sports features with a park	0	0%
Parking (n=8)		
Parking on-site available (not including street parking)	18	94.7%
Parking has lights	15	79.0%
Bicycle parking racks or cages available	0	0.0%
Sidewalk (n=8)		
Sidewalks on street lead up to the entrance	5	26.3%
Sidewalks have lighting	4	21.1%
Amenities (n=8)		
School has closing time signage	9	47.4%
Restrooms present	19	100%
Showers present	8	42.1%
Beverage vending machines present	0	0.0%

School Access and Barriers to Entry

Staff assessed each school for signage limiting entry and any physical barriers around the perimeter of the school. Among the eight schools surveyed in Palau, 19 (100%) had

signage indicating the school name, 12 (63.2%) had signage stating that public use of the school was limited to specific times (e.g. after school), 1 (5.3%) of the schools had signage indicating that the school was private or has restricted access at all times (e.g. no trespassing, school use only), and none of the schools had a locked fence or other physical barrier around the perimeter.

Table S.3.2. School Access and Barriers (N=19)

Access and barriers		
Signage indicates school name	19	100.0%
Signage states public use of area is limited to specific times	12	63.2%
Signage states area is private or restricted access at all times	1	5.3%
Locked fence or other physical barrier around the perimeter prevents public access	0	0.0%

Sports Features

Staff assessed each school for a specific list of sports features to determine the number of each feature present and whether such a feature had lighting or not. Staff also rated the condition of each feature. These features are the same as those included in the assessment of parks. (These are detailed further in Appendix B)

Condition of the Feature

Staff rated the condition and the presence of lighting for each feature item. The condition of a feature could be recorded as “poor”, “okay/good”, or “not rated”. When there was more than one item per feature, each item was evaluated for condition while the presence of lighting was assessed across all items in a feature. For example, if a school had 3 basketball courts and 2 were in okay condition, 1 was in poor condition, and 1 of them had lighting, then the staff would record the number of basketball courts as 3, 2 of which are rated okay/good, 1 rated as poor, and that this school had lighting

for this feature.

Feature condition was rated based on the feature's surface and related equipment, if any was available for the feature. Ultimately the feature condition rating was related to whether or not players could safely play or engage in physical activity on a feature without risking injury or falling. Staff took into consideration the type of activities that would take place on or within a particular feature as well as the material comprising the surface when considering its condition. When assessing the condition of equipment used for physical activity, staff took into consideration age, functionality, wear and tear, damage such as dents or sharp edges, missing pieces, and rust. For example, if a playing surface was composed of concrete, staff assessed whether smooth concrete covered the entire surface and looked for cracks or uneven slabs in the concrete surface. See Appendix B for a detailed protocol on how each sports feature was rated for condition.

Survey Results for Sports Features

Across the 19 schools surveyed in Palau, there were a total of 35 sports features, of which 35 were rated as ok/good, 0 were rated as poor, and 0 were not rated. Among the 35 rated features, 100% were rated as ok/good.

Playgrounds were the most frequent features (16), followed by multiuse fields (10), and multiuse courts (9). Playgrounds may be of particular interests to families with young children. Among the 16 playgrounds In Palau, 16 were rated ok/good while 0 were rated poor, and 13 schools had a playground area with lighting. The following table (Table S.3.3) summarizes the number of each sports feature, the conditions of the feature, and whether lighting was present for the feature across all 19 schools in Palau.

Table S.3.3. Sports Features Across all 8 Schools in Palau

Feature	Total number of the feature	Condition of the Feature			Number of features w/ Lighting
		OK/Good	Poor	Not rated	
Field multiuse	10	10	0	0	10
Field football	0	0	0	0	0

Field baseball	0	0	0	0	0
Field soccer	0	0	0	0	0
Court basketball	0	0	0	0	0
Court tennis	0	0	0	0	0
Court volleyball	0	0	0	0	0
Court multiuse	9	9	0	0	9
Track	0	0	0	0	0
Pool	0	0	0	0	0
Playground	16	16	0	0	13
Skateboarding	0	0	0	0	0
Exercise Stations	0	0	0	0	0
Rock Climbing	0	0	0	0	0

School Features and Amenities

Staff assessed each school for a specific list of features and amenities to determine if the feature or amenity was present and to rate the condition of the surface or feature. These features are the same as those included in the assessment of parks. (These are detailed further in Appendix B).

When staff were unable to determine the condition of one or more features of a specific type (if more than one present), they rated the features of that type that were able to be rated. When any features of a specific type could not be rated due to construction/ repairs or seasonal closure staff selected not rated. See Appendix B for a detailed protocol on how each feature or amenity type was rated for condition.

Survey Results of School Features and Amenities

Among the 19 schools in Palau, there were a total of 96 features and amenities, of which 90 were rated as ok/good, 0 were rated as poor, and 6 were not rated. Among rated features and amenities, 93.8% were rated as ok/good. The most common features and amenities present were trash bins (19), green spaces (18), benches (17), drinking

fences (12), and drinking fountains (10). The following table summarizes the total number and condition of each individual feature/amenity which was assessed.

Table S.3.4. Features and Amenities Across all 8 Schools in Palau

Feature	Total Number of the feature	Condition of the Feature		
		OK/Good	Poor	Not rated
Green Space	18	14	0	4
Beach swim	4	4	0	0
Beach recreational	4	4	0	0
Beach lifeguard	0	0	0	0
Waterpark	0	0	0	0
Shelters	1	1	0	0
Picnic Tables w/Shade	6	6	0	0
Picnic Tables w/o Shade	5	5	0	0
Benches	17	17	0	0
Drinking fountain	10	10	0	0
Décor fountain	0	0	0	0
Trash bins	19	19	0	0
Grills	0	0	0	0
Fence	12	10	0	2
Trails	0	0	0	0

Incivilities

Staff assessed each school for a list of incivilities and how much each was present. The term incivility is used to describe items in the environment that might discourage physical activity. These items are often signs of area deprivation or markers of blight. The following items in this section were used to assess the physical disorder of the school grounds environment. These incivilities are the same as those included in the assessment of parks. (These are detailed further in Appendix B).

Amount of Incivilities

Staff looked for incivilities throughout the school and assigned a score for each incivility type based upon the amount that was present across the school settings. The possible ratings were: none (0), a little (1), some (2), and 3 (a lot). For the community, average rating for each of the item was used. Mean rating across all 9 items were then used as an overall rating of incivilities across all schools surveyed in that community. See Appendix B for a detailed protocol on how each incivility was rated for amount.

Among the 19 schools in Palau, there was a little bit of each type of incivility, except for evidence of alcohol use which had none (Table S.3.5).

Table S.3.5. Average Amount of Each Incivility Across 8 Schools in Palau

Incivility Type	Amount
Garbage	A little
Broken glass	None
Graffiti/Tagging	A little
Evidence of Alcohol use	None
Evidence of Substance Abuse	A little
Sex Paraphernalia	None
Dog Refuse	A little
Dogs Unattended	A little
Vandalism	None

The original form can be viewed at:

http://www.bridgingthegapresearch.org/_asset/fv3642/BTGCOMP_School_2012.pdf

Section 4. Churches

Method: The tool used to assess churches is modified from the Bridging the Gap Program, University of Illinois at Chicago, Park Observation Form (See APPENDIX for form used). The purpose of this survey is to improve our understanding of the availability and quality of physical activity features that are located on church grounds in CHL communities. This assessment was only performed in jurisdictions where churches are commonly used as places for physical activity. A complete list of churches that had some outdoor physical activity features, such as fields, and that were located within the community boundary, or on the periphery, and their locations, was compiled for each community by local staff. Staff then assessed up to ten churches per community or assessed all of them when there were fewer than ten churches in a community. Staff were instructed to spend about 30 minutes walking through the grounds of each church to survey its accessibility, setting, amenities, sports fields (e.g., soccer, football, baseball), courts (e.g., tennis, basketball, volleyball), other features (e.g. track, pool, and playground) and incivilities.

Eligible churches: The grounds of any church that had outdoor physical activity features and was on the inventory list were eligible for assessment.

Church Setting, Parking, Sidewalks, and Amenities

Method: Upon entering the church grounds, staff assessed the presence of certain church settings, parking and sidewalk features, and certain church amenities.

In Palau there were 11 churches. Observations on church settings included whether it was within a quarter mile of another community feature (e.g. a school, housing, food store). Among the 11 churches, 4 (36.4%) churches were near another community resource.

All churches had on-site parking, while 5 (45.5%) churches had on-site parking with overhead lighting, and no churches had bicycle parking. Only 1 (9.1%) church had a

sidewalk leading with overhead lighting up to the entrance of the church.

Observations on church amenities included whether it had closing time signage, restrooms, showers, and beverage vending machines. Among the 11 churches, 0 (0%) had closing time signage, all (100%) had restrooms, none had showers or beverage vending machines.

Table S.4.1. Church Setting (N=11)

Church Setting	Number	Percent
Setting		
Within ¼ of a mile from another community feature	4	36.4%
Parking		
Parking on-site available (not including street parking)	11	100.0%
Parking has lights	5	45.5%
Bicycle parking racks or cages available	0	0.0%
Sidewalk		
Sidewalks on street lead up to the entrance*	1	9.1%
Sidewalks have lighting	1	9.1%
Amenities		
Church has closing time signage	0	0.0%
Restrooms present	11	100%
Showers present	0	0.0%
Beverage vending machines present	0	0.0%

Church Access and Barriers to Entry

Staff assessed each church for signage limiting entry and any physical barriers around the perimeter of the church. Among the 11 churches surveyed in Palau, all had signage indicating the church name, 7 (63.6%) had signage stating that an area was open to the public, 5 (45.5%) had signage indicating that an area was open to church members only, 1 (9.1%) had signage indicating that use of an area was limited to specific times, 2

(18.2%) had signage stating that use of an area required permission (e.g. from a minister or deacon), 3 (27.3%) had signage stating that supervision was needed (e.g. by an adult or minister), and 0 (0%) had signage stating that an area was private or restricted at all times. Among the 11 churches none had a locked fence or other physical barrier around the perimeter.

Table S.4.2. Church Access and Barriers (N=5)

Access and barriers		
Signage indicates church name	11	100%
Signage states an area is open to the public	7	63.6%
Signage states an area is open to church members only	5	45.5%
Signage indicates that use of an area was limited to specific times	1	9.1%
Signage states that use of an area required permission	2	18.2%
Signage states that supervision was needed	3	27.3%
Signage states area is private or restricted access at all times	0	0.0%
Locked fence or other physical barrier around the perimeter prevents public access	0	0.0%

Sports Features

Staff assessed each church for a specific list of sports features to determine the number of each feature present and whether such a feature had lighting or not. Staff also rated the condition of each feature. These features are the same as those included in the assessment of parks. (These data are detailed further in Appendix B).

Condition of the Feature

Staff rated the condition and the presence of lighting for each feature item. The condition of a feature could be recorded as “poor”, “okay/good”, or “not rated”. When

there was more than one of a particular feature, each was evaluated for condition while the presence of lighting was assessed across all features for each church. For example, if a church had 3 basketball courts and 2 were in okay condition, 1 was in poor condition, and 1 of them had lighting, then the staff would record the number of basketball courts as 3, 2 of which were rated okay/good, 1 was rated as poor, and that this church had lighting for this feature.

Feature condition was rated based on the feature's surface and related equipment, if any was available for the feature. Ultimately the feature condition rating was related to whether or not players could safely play or engage in physical activity on a feature without risking injury or falling. Staff took into consideration the type of activities that would take place on or within a particular feature as well as the material comprising the surface when considering its condition. When assessing the condition of equipment used for physical activity, staff took into consideration age, functionality, wear and tear, damage such as dents or sharp edges, missing pieces, and rust. For example, if a playing surface was composed of concrete, staff assessed whether smooth concrete covered the entire surface and looked for cracks or uneven slabs in the concrete surface. See Appendix B for a detailed protocol on how each sports feature was rated for condition.

Survey Results for Sports Features

Across the 11 churches surveyed in Palau, there were no sports features rated.

Church Features and Amenities

Method: Staff assessed each church for a specific list of features and amenities to determine if the feature or amenity was present and to rate the condition of the surface or feature. These features are the same as those included in the assessment of parks. (These are detailed further in Appendix B).

When staff were unable to determine the condition of one or more features of a specific type (if more than one present), they rated the features of that type that were able to be

rated. When any features of a specific type could not be rated due to construction/ repairs or seasonal closure, staff selected not rated. See Appendix B for a detailed protocol on how each feature or amenity type was rated for condition.

Survey Results of Church Features and Amenities

Among the 11 churches in Palau, there were a total of 51 features and amenities, of which all were rated as ok/good. Among rated features and amenities, 97.1% were rated as ok/good. The most common features and amenities present were shelters (7), trash bins (11), benches (11), green space (9), and drinking fountains (6). The following table summarizes the total number and condition of each individual feature/amenity that was assessed.

Table S.4.3. Features and Amenities Across all 11 Churches in Palau

Feature	Total Number of the feature	Condition of the Feature		
		OK/Good	Poor	Not rated
Green Space	9	9	0	0
Beach for swimming	2	2	0	0
Beach, recreational	2	2	0	0
Beach with lifeguard	0	0	0	0
Waterpark	0	0	0	0
Shelters	1	1	0	0
Picnic Tables w/ Shade	4	4	0	0
Picnic Tables w/o Shade	4	4	0	0
Benches	11	11	0	0
Drinking fountain	6	6	0	0
Decorative fountain	0	0	0	0
Trash bins	11	11	0	0

Grills	1	1	0	0
Fence	0	0	0	0
Trails	0	0	0	0

Incivilities

Method: Staff assessed each church for a list of incivilities and how much each was present. The term incivility is used to describe items in the environment that might discourage physical activity. These items are often signs of area deprivation or markers of blight. The following items in this section were used to assess the physical disorder of the church grounds environment. These incivilities are the same as those included in the assessment of parks. (These are detailed further in Appendix B).

Amount of Incivilities

Staff looked for incivilities throughout the church and assigned a score for each of 9 incivility types based upon the amount that was present across the church settings. The possible ratings were: none (0), a little (1), some (2), and 3 (a lot). For the community, average rating for each of the item was used. See Appendix B for a detailed protocol on how each incivility was rated for amount.

Among the 11 churches in Palau, there was a little bit of garbage, evidence of alcohol use, unattended dogs and dog refuse. The other incivilities were not present (Table S.4.5).

Table S.4.4. Average Amount of Each Incivility across 11 churches in Palau

Incivility Type	Amount
Garbage	A little
Broken glass	None
Graffiti/Tagging	None
Evidence of Alcohol use	A little
Evidence of Substance Abuse	None
Sex Paraphernalia	None
Dog Refuse	A little
Dogs Unattended	A little
Vandalism	None

The original form can be viewed at:

http://www.bridgingthegapresearch.org/_asset/vnb0e7/BTGCOMP_Park_2012.pdf

Section 5. Assessment of Physical Activity Facilities

Method: The tool used to assess physical activity (PA) facilities is modified from the Bridging the Gap Program, University of Illinois at Chicago, PA Facility Observation Form (See APPENDIX). The purpose of this survey is to improve our understanding of the availability and quality of physical activity features that are located on PA facility grounds in CHL communities. A complete list of PA facilities that were located within the community boundary, or on the periphery, and their locations was compiled for each community by local staff. Staff then assessed up to ten PA facilities per community or assessed all of them when there were fewer than ten PA facilities in a community. Staff were instructed to spend about 30 minutes walking through each PA facility grounds to survey its setting, amenities, sports fields (e.g., soccer, football, baseball), courts (e.g., tennis, basketball, volleyball), other features (e.g. track, pool, and playground) and incivilities.

Eligible PA Facilities:

Observations in PA facilities included for-profit and non-profit facilities. Examples of non-profit PA facilities are public community recreation centers, YMCA/YWCAs, and Boys and Girls Clubs (BGCs). For-profit PA facilities include gyms, health clubs, and other physical-activity related businesses that allow patrons to come in and use equipment or other facilities (e.g., courts, gymnasiums), usually for a recurring fee or membership schedule.

For Palau, 9 facilities were listed on the inventory and 9 were assessed.

PA Facility Setting and Fees

Upon entering the PA facility, staff assessed the presence of certain PA facility settings and fees.

Observations on PA facility setting included facility type, the presence of indoor and outdoor sports features, childcare and teen services, and types of fees. Among the 9 PA

facilities assessed, all had information on setting. Out of those 9 PA facilities, 7 (77.8%) were a communal play spaces, and 2 (22.2%) were for-profit facilities. Among the 9 PA facilities, 3 (33.3%) had only indoor features and 6 (66.7%) had both only outdoor features. No facilities had information on the availability of child care and only 1 (11.1%) facility had information on the availability of teen services. All 9 facilities had information on fees for entrance and all facilities offered a daily fee, and a discount for low-income. Only 1 facility (11.1%) had a discount for youth. Table S.5.1 summarizes this information.

Table S.5.1. PA Facility Setting (N=9 unless otherwise noted)

PA facility Setting	Number	Percent
Setting		
Communal Play Space	7	77.8%
For-profit Facility	2	22.2%
Sport feature location		
Indoor	3	33.3%
Outdoor	6	66.7%
Both Indoor and Outdoor	0	0.0%
Services		
Childcare (n=0)	0	0%
Teen activities (n=1)	1	11.1%
Fees (n=9)		
Daily Fees	9	100.0%
Fee discount for low-income	9	100.0%
Fee discount for youth	1	11.1%

PA Facility Parking, Sidewalks and Amenities

Staff assessed each PA facility for on-site parking, parking overhead lighting, bicycle parking, a sidewalk leading up to the entrance, and sidewalk overhead lighting. Among the four PA facilities surveyed in Palau, 9 (100%) had on-site parking, 9 (100%) had parking overhead lighting, and none (0%) had bicycle parking. A total of 3 (33.3%) had a sidewalk leading up to the entrance. Two facilities (22.2%) had sidewalk overhead lighting. Observations on PA facility amenities included whether it had restrooms, showers, and beverage vending machines both inside and outside. Among the 3 PA facilities with indoor features, none (0%) had restrooms inside. None (0%) had showers and 0 (0%) had a beverage vending machine present inside. On the outside, 4 (66.7%) out of the 6 outdoor facilities had restrooms, 0 (0%) had showers, and 0 (0%) had a beverage vending machine. Table S.5.2 summarizes this information.

Table S.5.2. PA Facility Amenities (N=9 unless otherwise noted)

Access and barriers		
Parking		
Parking on-site available (not including street parking)	9	100.0%
Parking has lights	9	100.0%
Bicycle parking racks or cages available	0	0.0%
Sidewalk		
Sidewalks on street lead up to the entrance	3	33.3%
Sidewalks have lighting	2	22.2%
Amenities		
Restrooms present inside	0	0.0%
Showers present inside	0	0.0%
Beverage vending machines present inside	0	0.0%

Restrooms present outside	0	0.0%
Showers present outside	0	0.0%
Beverage vending machines present outside	0	0.0%
Restrooms present inside or outside	4	66.7%
Showers present inside or outside	0	0.0%
Beverage vending machines present inside or outside	0	0.0%

Sports Features

Staff assessed each PA facility for a specific list of sports features indoors and outdoors to determine the number of each feature present, the condition of each feature, and, for outdoor features, whether lighting was present. Staff also rated the condition of each feature. (These features are detailed further in Appendix B)

Condition of the Feature

Staff rated the condition for each feature item and, for outside features, the presence of lighting. The condition of a feature could be recorded as “poor”, “okay/good”, or “not rated”. When there was more than one of a particular feature, each was evaluated for condition while the presence of lighting was assessed across all features. For example, if a PA facility had 3 basketball courts and 2 were in okay condition, 1 was in poor condition, and 1 of them had lighting, then the staff would record the number of basketball courts as 3, 2 of which were rated okay/good, 1 was rated as poor, and that this PA facility had lighting for this feature.

Feature condition was rated based on the feature’s surface and related equipment, if any was available for the feature. Ultimately the feature condition rating was related to whether or not players could safely play or engage in physical activity on a feature

without risking injury or falling. Staff took into consideration the type of activities that would take place on or within a particular feature as well as the material comprising the surface when considering its condition. When assessing the condition of equipment used for physical activity, staff took into consideration age, functionality, wear and tear, damage such as dents or sharp edges, missing pieces, and rust. For example, if a playing surface was composed of concrete, staff assessed whether smooth concrete covered the entire surface and looked for cracks or uneven slabs in the concrete surface. See Appendix B for a detailed protocol on how each sports feature was rated for condition.

Survey Results for Indoor Sports Features

Across the nine PA facilities surveyed in Palau, there were a total of 7 indoor sports features, of which all (100%) were rated as ok/good.

Exercise machine areas were the most common feature (2). Among the 2 multipurpose rooms in Palau, all were rated ok/good. The following table (Table S.5.3) summarizes the number of each sports feature and the conditions of the feature across all 9 PA facilities in Palau.

Table S.5.3. Indoor Sports Features Across all 9 PA Facilities in Palau

Feature	Total number of the feature	Condition of the Feature		
		OK/Good	Poor	Not rated
Field soccer	0	0	0	0
Court basketball	1	1	0	0
Court tennis	1	1	0	0
Court volleyball	0	0	0	0
Court racquetball	0	0	0	0
Court multiuse	1	1	0	0
Multipurpose room	0	0	0	0

Exercise machine area	2	2	0	0
Gymnastics facilities	1	1	0	0
Running/ Walking track	0	0	0	0
Pool >3 feet deep	1	1	0	0
Skateboarding	0	0	0	0
Rock Climbing	0	0	0	0

Survey Results for Outdoor Sports Features

Across the nine PA facilities surveyed in Palau, there were a total of 9 outdoor sports features, of which 8 (88.9%) were rated as ok/good and 1 (11.0%) was not rated. None of the facilities had lighting on outdoor features.

The most common features were tennis courts (3), followed by multiuse courts (2) and baseball fields (2). Playgrounds may be of particular interest to parents of young children. There were no playgrounds at PA facilities in Palau. The following table (Table S.5.4.) summarizes the number of each sports feature and the conditions of the feature across all 9 PA facilities in Palau.

Table S.5.4. Outdoor Sports Features Across all 9 PA Facilities in Palau

Feature	Total number of the feature	Condition of the Feature			Number of facilities w/ Lighting
		OK/Good	Poor	Not rated	
Field multiuse	1	0	0	1	0
Field football	0	0	0	0	0
Field baseball	2	2	0	0	2
Field soccer	0	0	0	0	0
Court basketball	0	0	0	0	0
Court tennis	3	3	0	0	2

Court volleyball	0	0	0	0	0
Court multiuse	2	2	0	0	2
Running/walking track	1	1	0	0	1
Pool <3 feet deep	0	0	0	0	0
Pool wading	0	0	0	0	0
Playground	0	0	0	0	0
Skateboarding	0	0	0	0	0
Exercise Stations	0	0	0	0	0
Rock Climbing	0	0	0	0	0

PA facility Amenities

Method: Staff assessed each PA facility for a specific list of amenities to determine if the amenity was present and to rate the condition of the item. (These are detailed further in Appendix B).

When staff were unable to determine the condition of one or more features of a specific type (if more than one present), they rated the features of that type that were able to be rated. When any features of a specific type could not be rated due to construction/ repairs or seasonal closure, staff selected not rated. See Appendix B for a detailed protocol on how each feature or amenity type was rated for condition.

Among the 9 PA facilities in Palau, all had information on amenities. Among the facilities there were a total of 15 amenities, of which 15 (100.0%) were rated as ok/good. The amenities present were benches (6), trash containers (6), and indoor drinking fountains (3). Table S.5.5 summarizes the total number and condition of each individual feature/amenity which was assessed.

Table S.5.5. Amenities Across all 9 PA Facilities in Palau

Feature	Total Number of the feature	Condition of the Feature		
		OK/Good	Poor	Not rated
Drinking fountain indoor	3	3	0	0
Trash container	6	6	0	0
Benches	6	6	0	0

Incivilities

Method: Staff assessed each PA facility for a list of incivilities and how much each was present. The term incivility is used to describe items in the environment that might discourage physical activity. These items are often signs of area deprivation or markers of blight.

These incivilities are the same as those included in the assessment of parks. (These are detailed further in Appendix B). Staff looked for incivilities throughout the PA facility and assigned a score for each of 9 incivility types based upon the amount that was present across the PA facility ground. The possible ratings were: none (0), a little (1), some (2), and 3 (a lot). For the community, an average rating for each item was used. See Appendix B for a detailed protocol on how each incivility was rated for amount.

Among the nine PA facilities in Palau, the mean rating across all the incivility types was 0.38. There was a little bit of garbage, broken glass, graffiti/tagging, evidence of alcohol and drug use, sex paraphilia, dog refuse, dogs unattended, and vandalism (Table S.5.6).

Table S.5.6. Average Amount of Each Incivility Across 9 PA Facilities in Palau

Incivility Type	Amount
Garbage	A little
Broken glass	A little
Graffiti/Tagging	A little
Evidence of Alcohol use	A little
Evidence of Substance Abuse	A little
Sex Paraphernalia	A little
Dog Refuse	A little
Dogs Unattended	A little
Vandalism	A little

The original form can be viewed at:

http://www.bridgingthegapresearch.org/_asset/2npq33/BTGCOMP_PA_2012.pdf

Section 6. Assessment of Fast Food Outlets

Method: The tool used by CHL to assess fast food outlets (FFO) is modified from the Bridging the Gap Program (BTG), University of Illinois at Chicago. The BTG-COMP Fast Food Observation Form was designed to assess a variety of attributes in the fast food outlet environment, including advertising and marketing, availability of nutritional information and healthy options, availability and pricing of specific food and beverage items, as well as other characteristics of the facility. (See APPENDIX for CHL form used.) The purpose of this data collection is to characterize the away-from-home food environment, with a focus on fast-food outlets and pizzerias, which are often popular destinations for youth.

Eligible Fast Food Outlets

Any national and regional fast food chains or franchises and independent fast food outlets that were located within Palau were eligible. Fast food outlets are most often characterized by the fact that customers order and pay at the counter prior to eating. Data collection was also conducted in pizzerias, which may have table service. Specialty snack/drink shops where 50% or more of the menu items are a snack or drink item (e.g. Dunkin' Donuts, Starbucks, Baskin Robbins, Auntie Anne's Pretzels, Tropical Smoothie Café), buffets, and "take & bake" pizza places (e.g. Papa Murphy's, Homemade Pizza Co.) were excluded.

For Palau, 7 outlets were listed on the original inventory, 7 were visited and 6 had a complete assessment and were included in this analysis.

Outlet Type and Shared Space

Upon entering the outlet, staff assessed the outlet type according to the main cuisine or type of food/beverages on the menu board and whether it shared space with another business.

The outlet type was selected from a list, or other could be selected. All 6 fast food outlets in Palau had information on the outlet type. Among them, 4 (66.7%) were a Plate Lunch/Lunch Truck outlet and 2 (33.3%) shared a space with a gas station.

Each outlet was assessed for whether it had its own building /exterior or whether it shared spaced with a food court, grocery store, gas station, or other restaurant. All 6 fast food outlets in Palau had information on shared space. Among them, none shared space with a food court or another restaurant. A total of 2 (33.3%) shared space with a gas station. Table S.6.1 summarizes this information.

Table S.6.1. Outlet Type and Shared Space (N=6)

Outlet Setting	Number	Percent
Outlet Type		
Burger and Fries	4	66.7%
Mexican/Latin American	0	0%
Fried Chicken/Fried Fish	0	0%
Sandwich or Sub Shop	0	0%
Sandwich/Pastry	1	16.7%
Pizzeria/Italian	0	0.0%
Plate Lunch/Lunch Truck	1	16.7%
Chinese/Pan-Asian	0	0%
Other, *SPECIFY:*	0	0%
Shared Space	0	
Food Court	0	0%
Grocery Store	1	16.7%
Gas Station	2	33.3%
Other Restaurant	0	0%

Outlet Parking, Sidewalks, and Exterior Amenities

Staff assessed each outlet for certain amenities such as on-site parking, bicycle parking, parking overhead lighting, sidewalks, and sidewalk overhead lighting.

Among the 6 fast food outlets surveyed in Palau, 6 (100%) had on-site parking, none had bicycle parking, and 6 (100%) had parking overhead lighting. A total of 3 (50%) had a sidewalk leading up to the entrance and 3 (50.0%) had sidewalk lighting.

Observations on outlet amenities included whether it had outdoor seating, bars on the windows, an exterior play area, an indoor play area visible from the outside, and a drive-thru window. Among the 6 fast food outlets in Palau, 2 (33.3%) had outdoor seating, 2 burger and fry restaurants, none had bars on the windows, none had an exterior play area, none had an indoor play area that was visible from the outside, and none had a drive-thru window. This information is summarized in Table S.6.2.

Table S.6.2. Parking, Sidewalks, and Exterior Amenities (N=6 Unless Otherwise Noted)

Exterior Feature	Number	Percent
Parking		
Parking on-site available (not including street parking)	6	100%
Parking has lights	6	100%
Bicycle parking racks or cages available	0	0%
Sidewalk		
Sidewalks on street lead up to the entrance	3	50.0%
Sidewalks have lighting	3	5.0%
Outdoor seating	2	33.3%
Bars on windows	0	0%
Exterior play area	0	0%
Indoor play area visible from outside	0	0%
Drive thru window	0	0%

Staff also assessed the number of external walls visible from the street and the level of

graffiti and garbage that was present. Among the 6 fast food restaurants in Palau, all outlets had information about the number of walls visible from the street. Among these, 4 (66.7%) had one visible wall and 2 (33.3%) had two visible walls. This question was intended to give a sense of the size/layout of the restaurant property and the number of sides on which advertisements can be placed.

Staff rated each fast food outlet as having none, a little, some, or a lot of graffiti and garbage. All 6 fast food outlets in Palau had information on the level of graffiti and garbage that was present. All 6 (100%) had no graffiti present. Furthermore, 1 (16.7%) had a little garbage, 0 (0.0%) had a lot, and 3 (50.0%) had none. This information is summarized in Table S.6.3.

Table S.6.3. Exterior (N=6 Unless Otherwise Noted)

Exterior Feature	Number	Percent
Walls visible from street (n=6)		
0	0	0%
1	4	66.7%
2	2	33.3%
3	0	0%
4	0	0%
Graffiti		
None	6	100%
A little	0	0%
Some	0	0%
A lot	0	0%
Garbage		
None	3	50%
A little	1	16.7%
Some	2	33.3%
A lot	0	0%

Exterior Marketing

Staff assessed food and beverage advertisements on the building exterior and property, child-targeted marketing on the exterior, and other ad themes.

ADs on the Building Exterior or Property

The number of advertisements at least 8½ x 11 inches in size that were posted on the building exterior and restaurant property was recorded. To be counted, ads must have been visible from the parking lot(s) and/or from the street(s) bordering the restaurant. Ads which could be considered a price promotion, food ad, beverage ad, or soda ad were separately tallied.

- **Exterior ADs:** included those that are on the walls, doors, windows or roof of the building and visible from the parking lot(s) or street(s) bordering the restaurant.
- **Property ADs:** include those that are not posted on the building, but are in some other place on the restaurant property such as on a fence, light post, pole, garbage can, parking barrier, play area, or other place. Again, these must be visible from the parking lot(s) or street(s) bordering the restaurant.
- **Price Promotion ADs** have a price specified or the presence of any of the following word(s): “price,” “sale,” “deal,” “save,” “discount,” or “value.” It also includes any ad promoting a multi- item discount like “Buy one, get one free,” “free with purchase,” “try one free” or related language. It may or may not also have included a food or beverage.
- **Food ADs** have an image of and/or a name/description for a food item(s). It may or may not also have included a beverage.
- **Beverage ADs** have an image of and/or a name/description for a beverage item(s). This could include, for example, soda, coffee drinks, tea, milkshakes, smoothies, juice, water and other beverages.
- **Soda ADs:** have an image of and/or a name/description for a soda. This can include bottled or canned soft drinks, as well as fountain drinks.

Among the 6 fast food outlets in Palau, all were assessed for ads on the building exterior. Among the outlets, there were a total of 16 ADs; all ads were for price promotion. The mean for the number of ads on the building exterior of fast food outlets in Palau is 2.7. The mean number of ads for a price promotion is 2.7. Among the 6 fast food outlets in Palau, none of the outlets had ads on the property. Table S.6.4 summarizes this information. The presence of specific types of ads at each outlet is presented in table S.6.5. The type of ad most commonly observed at FFOs in Palau was price promo (n=2, 33.3%).

Table S.6.4. Summary of Price Promotion, Food, Beverage, or Soda Ads on the Building Exterior or Property across Fast Food Outlets in Palau

		Type of Ad				
Location	**# surveyed**	**Total**	**Price Promo**	**Food Ad**	**Beverage Ad**	**Soda Ad**
Exterior	6	13	2	9	6	1
Property	6	2	0	2	0	0

Other Ads on the Exterior

Staff also assessed the presence of ads on the outlet's exterior that included a dollar menu promotion, health claim, cartoon character(s), a celebrity, kids' meal toy, or other child-directed marketing. Any one ad can be coded as having one or more of the characteristics described above. For example, the same ad could feature both cartoon characters and the kids' meal toy.

All 6 fast food restaurants in Palau had this information. None had a dollar menu ad, cartoon ad, celebrity ad, kids' meal toy ad, health ads or other child-directed marketing. Table S.6.5 summarizes this information.

Table S.6.5. Presence of Ads by Type (N=6)

Type of Ad	Number	Percent
External		
Price Promo	1	16.7%
Food Ad	2	33.3%
Beverage Ad	2	33.3%
Soda Ad	1	16.7%
Property (n=0)	0	0%
Price Promo	0	0%
Food Ad	1	16.7%
Beverage Ad	0	0%
Soda Ad	0	0%
Dollar menu	0	0%
Health claim	0	0%
Cartoon character(s)	0	0%
TV/ movie star/sports start/youth celebrity	0	0%
Kids' meal toy	0	0%
Other child-targeted marketing	0	0%

Counter Service and Restaurant Interior

Staff assessed items describing the type of service offered within the establishment, characteristics of the checkout area, characteristics of the restaurant interior, and availability of self-service beverages and a salad bar.

None of the fast food outlets in Palau were a drive-in only restaurant, and so they were all assessed for restaurant interior characteristics. All outlets had information about whether food was ordered at the counter, and among these, food was ordered at the counter in all (100%) of the outlets. 6 (100%) of outlets had food pick up and payment at the counter. Staff counted the number of cash registers inside of the restaurant and found that 6 (100%) of the outlets did have a register. 1 (16.7%) of the outlets had a glass or Plexiglas divider between customers and a cash register in the restaurant interior.

Regarding other interior characteristics, 3 (50%) of the fast food outlets had indoor seating, 4 (66.7%) had bathrooms available to customers, and none (0%) had a toy display and this was recorded at being less than 3 and a half feet or less from the ground (at eye level of children). Regarding specific food and beverage items, none (0%) had sweets--such as cookies and candy--near the cash register, self-serve fountain drinks, free water, or self-serve salads.

Table S.6.6 Counter Service and Restaurant Interior (N=6)

Restaurant Feature	Number	Percent
Drive-in only	0	0%
Counter Service		
Ordering food	6	100%
Picking up food	6	100%
Paying for food	6	100%
Interior Register Count		
0 register	0	0%

Restaurant Feature	Number	Percent
1 register	6	100%
Divider between customer and cash register	1	16.7%
Indoor Seats	4	66.7%
Restrooms	4	66.7%
Indoor displays for kids' meal toys		
Any ad or display	0	0%
Toy display 3½ feet or less from the ground	0	0%
Sweet snacks near counter	3	50%
Self-serve fountain drinks	0	0%
Free water	0	0%
Self-serve salad	0	0%

General Menu: Dollar Menu Items, Combo Meals, Salad, Fruits and Vegetables, and Signs for Health Options

Staff assessed the availability of a dollar menu and specific items on it, combo meals, salads and other fruit and vegetable sides. Signage for "healthy" items on the menu was also assessed.

Among the 6 fast food outlets in Palau, 0 (0%) had a dollar menu, salad as an entrée, or low-fat dressing. One (16.7%) outlets had information on the availability of a combo meal.

Staff tallied the number of side items on the menu that were vegetables, fresh fruit, or

other fruit besides fresh fruit. Staff looked for the availability of any side salad(s) or other vegetable(s) listed on the menu as a “side” or “extra” and assessed whether it met the criteria of being non-fried and not having added fat. Vegetables that were part of a main dish were also not counted. Staffed looked for the availability of any fresh fruit listed on the menu as a “side” or “extra.” Beverages such as juice or smoothies were not counted. Staff also looked for the availability canned, dried, or other processed (not fresh) fruit options listed on the menu as a “side” or “extra.”

All outlets in Palau were assessed for vegetables and fruit. Across the menus of the 6 outlets, there were a total of 2 vegetables, 2 fresh fruit, and zero other fruit options. Across these 6 outlets, 4 (66.7%) had zero vegetable items, 2 (33.3%) had 1-2 vegetables items, 5 (83.3%) had zero fruit items, 1 (16.7%) had 1-2 fruit items, and all (100%) had no other fruit items.

Staff looked for signage indicating food as low calorie, low fat, low sodium, or healthy. Among the 6 fast food outlets in Palau, none (0%) had signage for low fat, low sodium food, low calorie or healthy food items. None of these fast food outlets had liquor on the menu. This information is summarized in Table S.6.7.

Table S.6.7 General Menu Items (N=6)

Menu Feature	Number	Percent
Dollar Menu	0	0%
Fruit on Dollar Menu	0	0%
Dessert on Dollar Menu	0	0%
Drink on Dollar Menu	0	0%
Fries on Dollar Menu	0	0%

Menu Feature	Number	Percent
Entrée on Dollar Menu	0	0%
Combo meal	1	16.7%
Salad as an entrée	0	0%
Low-fat salad dressing	0	0%
Vegetable Items Count		
none	4	66.7%
1-2	2	33.3%
2-4	0	0%
5 or more	0	0%
Fruit Items Count		
none	5	88.3%
1-2	1	16.7%
2-4	0	0%
5 or more	0	0%
Signage on the menu		
Low calorie	0	0%
Low fat	0	0%
Low sodium	0	0%

Menu Feature	Number	Percent
Healthy	0	0%
Liquor	0	0%

Beverage Item Assessment

Staff assessed the posted menu board for the availability and price of specific beverage items--such as soda, juice, milk, water, coffee, and shakes--commonly found in fast food establishments. All fast food outlets in Palau had information on beverage items. The most commonly available drinks were packaged soda (n=6, 100%) and bottled water (n=6, 100%). This information is presented in Table S.6.8.

Table S.6.8 Beverage Items (N=6)

Beverage	Number	Percent
Fountain drink	0	0%
Packaged soda	6	100%
100% Juice	1	16.7%
Milk, skim or 1% fat (unflavored)	0	0%
Milk, whole/Vit D or 2% fat (unflavored)	2	33.3%
Bottled Water	6	100%
Flavored Coffee Drinks (hot or iced)	4	66.7%
Shakes or Malts	3	50.0%
Flavored Milk (e.g., chocolate, strawberry)	3	50.0%

Food Item Assessment

Staff assessed the posted menu board for the availability and price for specific food items commonly found in fast food establishments and pizzerias. Among the 6 fast food outlets in Palau, the most commonly available food item from the list of specific foods was cheeseburger (n=6, 100%) followed by French fries 5 (83.3%) of the outlets in Palau. This information is presented in Table S.6.19.

Table S.6.9 Food Items (N=6)

Food	Number	Percent
French fries	5	83.3%
Cheeseburger	6	100%
Chicken Sandwich, with roasted or grilled chicken	5	83.3%
Entrée salad, with roasted or grilled chicken	0	0%
Fried chicken – legs, drumstick, and thigh	3	50.0%
Cheese pizza, thin crust	0	0%
Taco with ground beef	0	0%
Sub sandwich, with turkey and cheese	0	0%

Children's Menu Assessment

Staff assessed each outlet for items that were available and promoted to children (usually ages 12 and under), via the establishment's kids' meal or kids' menu. Staff looked for healthy beverage and food options and asked for these items when they were not posted on the menu board. Staff also assessed the availability of toys.

Among the 6 fast food outlets in Palau, 2 (33.3%) had a kids' menu or meal available. This information is summarized in Table S.6.10.

Table S.6.10 Children's Menu (N=6)

Menu feature	Number	Percent
Kids' menu or meal	2	33.3%
Unflavored skim/1% milk, 100% juice, or bottled water (listed or shown on board)	0	0%
Unflavored skim/1% milk, 100% juice, or bottled water (available when asked)	0	0%
Fruit, vegetable (only non-fried vegetables w/o added fat), salad or yogurt (listed or shown on board)	0	0%-
Fruit, vegetable (only non-fried vegetables w/o added fat), salad or yogurt (available when asked)	0	0%
Free toy with kids' meal	0	0%
Toy for additional charge	0	0%

The original form can be viewed at:

http://www.bridgingthegapresearch.org/_asset/2npq33/BTGCOMP_PA_2012.pdf

Section 7. Food Availability and Marketing Form

CHL's Food Availability Survey and Marketing Form are modified from the California Department of Health Communities of Excellence in Nutrition, Physical Activity, and Obesity Prevention program (CX3). The purpose of this survey is to access the availability of healthy foods, price, nutrition information, and marketing of foods in stores. In addition to the food environment, we surveyed the safety and walkability around stores. A complete list of food stores, including their locations, was compiled for each community by local staff. Staff then assessed up to ten stores per community or all of them when there were less than ten stores in a community. The types of stores assessed include supermarket chain, large grocery store, small market, convenience store, and other community sources for food products.

Supermarket Chain: a large store that sells food and other items, including canned and frozen foods, fresh fruits and vegetables, and fresh (raw) and prepared meats, fish, and poultry. It is owned by a company that has many stores such as Safeway, K-mart, payless. (This type of store has twenty or more employees and at least 4 cash registers.)

Large Grocery Store (not part of a large chain): a large store that sells food and other items, including canned and frozen foods, fresh fruits and vegetables, and fresh (raw) and prepared meats, fish, and poultry. It may be part of a small regional chain of fewer than 5 stores or may be independent. (This type of store also has twenty or more employees and at least 4 cash registers.

Small Market: usually an independent store that sells food including canned and frozen foods, fresh fruits and vegetables, and fresh (raw) and prepared meats, fish, and poultry as well as convenience items and alcohol. This type of store has fewer than 20 employees and 3 or fewer cash registers.

Convenience: a store that sells convenience items only, including bread, milk, soda, snacks and may sell alcohol and gasoline. These stores do not sell fresh

(raw) meat. These stores also are known as food marts.

Food Supply Ships: These may usually supply produce and other grocery type items to the outer islands.

Other: a store that does not fit into supermarket chain, large grocery store, small market or convenience, but is seen by the community as a general source of food products. Examples would include road side stands, farmers markets, dollar stores or drug stores.

The following table is a breakdown of the store types surveyed in Palau. Among the 20 stores assessed, the most common store types in Palau were small market (3) and convenience stores (12).

Table S.7.1. Type of Store (N=20)

Type	Number	Percent
Supermarket chain	3	15.0%
Large grocery store	2	10.0%
Small market	3	15.0%
Convenience	12	60.0%

Variety, Quality, and Availability of Fruits and Vegetables and Other Healthy Foods

Staff looked at the overall variety, quality, and availability of specific fruits and vegetables in stores. Stores were assessed for whether they had a wide variety (7 or more types), moderate variety (4-6 types), limited variety (1-3 types) or none of fruits and vegetables, separately. Of the 20 stores with this data in Palau, 8 (40.0%) had no fruits, 8 (40.0%) had no vegetables, 3 (15.0%) had a wide variety of fruit and 3 (15.0%) had a wide variety of vegetables.

Table S.7.2. Variety of Fruits and Vegetables (N=20)

Variety	Number	Percent
Fruits		
None	8	40.0%
Limited	7	35.0%
Moderate variety	2	10.0%
Wide variety	3	15.0%
Vegetables		
None	8	40.0%
Limited	7	35.0%
Moderate variety	2	10.0%
Wide variety	3	15.0%

Stores were also assessed on the quality of their fruits and vegetables. Staff looked for signs of quality in the produce such as the lack of wilting, decay, shriveling, brown stems, and color changes.

- **Wilting -** leaves or stems are limp
- **Decay** - mold or blackening
- **Shriveling -** skin has wrinkles
- **Brown stems/dry stem cuts**
- **Color changes** - yellowing when item should be dark green

The quality was rated as:

- **None** - None sold
- **Poor** - All or most of fruit is of poor quality (brown, bruised, overripe, wilted)
- **Mixed Poor** - Mixed quality; more poor than good

- **Mixed Good** - Mixed quality; more good than poor
- **Good** - All or most of fruit is of good quality (very fresh, no soft spots, excellent color) Of the 20 stores in Palau assessed for quality, 7 (35%) had good quality for fruit and 7 (35%) had good quality for vegetables.

Table S.7.3. Quality of Fruit and Vegetables (N=20)

Quality	Number	Percent
Fruit		
None	8	40.0%
Poor	0	0%
Mixed Poor	0	0%
Mixed Good	5	25.0%
Good	7	35.0%
Vegetable		
None	8	40.0%
Poor	0	0%
Mixed Poor	0	0%
Mixed Good	5	25.0%
Good	7	35.0%

Stores were assessed for the availability and price of specific fruits (apple, banana, and orange) and vegetables (carrot, tomato, broccoli, and cabbage). A total of 6 stores in Palau had data on the availability of these produce. The most commonly available fruits were bananas which were in 8 (40%) of stores. Apples and oranges were each in 5 (25%) of stores. Among the vegetables carrots, tomato, broccoli, and cabbage were

each in 5 (25%) of stores.

Table S.7.4. Availability of Selected Fruits and Vegetables (N=6)

Availability	Number	Percent
Selected fruit		
Apple	5	25.0%
Banana	8	40.0%
Orange	5	25.0%
Selected vegetable		
Carrot	5	25.0%
Tomato	5	25.0%
Broccoli	5	25.0%
Cabbage	5	25.0%
Select Local Foods		
Ong Choi	6	30.0%
Pandanus	0	0%
Taro	7	35.0%
Cassava	9	45.0%

Stores were assessed for the availability of other healthy foods. **Healthy foods** are fruits and vegetables, whole grains, beans, nuts and seeds, non-fat and low fat milk products, and lean meat, poultry, and fish. Healthy foods include minimal or no added fat, sugars, or sweeteners. Unsweetened black coffee is included. Pickled vegetables, whole coconut, and coconut water are included.

Stores were specifically assessed for a variety of items considered to be low/reduced fat dairy or soy drinks, lean meat protein, non-meat protein, whole-grain, canned/frozen

fruit or vegetables, and baby food. Of the 20 stores assessed in Palau 20 (100%) had at least one low/reduced fat dairy or soy beverage, 13 (65%) had at least one lean meat protein, 10 (50%) had at least one non-meat protein, 8 (40%) had at least one whole-grain item, 13 (65%) had at least one canned/ frozen fruit or vegetable, and 5 (25%) had at least one baby food.

Table S.7.5. Availability of Other Healthy Foods in Stores (N=20)

Other Healthy Foods	Number	Percent
Low/reduced fat dairy or soy beverage	20	100.0%
1% milk	5	25.0%
2% milk	20	100.0%
Skim milk	5	25.0%
Mozzarella	4	20.0%
Flavored soy beverage	4	20.0%
Plain soy beverage	5	25.0%
Lean meat protein	13	65.0%
Ground beef or turkey, lean (85% or higher)	6	30.0%
Whole chicken	9	45.0%
Tuna (light) canned in water	5	25.0%
Salmon canned in water	3	15.0%
Sardines canned in water, tomato, or mustard	11	55.0%
Non-meat protein	10	50.0%
Tofu, plain	5	25.0%
Beans, dried	4	20.0%
Beans, canned with no added fats, sugar or sweetener	10	50.0%

Other Healthy Foods	Number	Percent
Whole grain	8	40.0%
Whole grain bread	5	25.0%
Brown rice	5	25.0%
High fiber cereal (>= 3 grams fiber, <=12 grams sugar per serving)	4	20.0%
Oatmeal (plain)	8	40.0%
Tortillas, soft corn or whole wheat (no lard)	4	20.0%
Canned/ frozen fruit or vegetables	13	65.0%
Any canned fruit packed in 100% fruit juice	6	30.0%
Any canned vegetable with no added fats, sugar, or sweetener	13	65.0%
Any frozen fruit with no added fats, sugar, or sweetener	3	15.0%
Any frozen vegetable with no added fats, sugar, or sweetener	11	55.0%
Baby food	5	25.0%
Baby food, jarred, single fruit	5	25.0%
Baby food, jarred, single vegetable	5	25.0%
Baby food, jarred, single meat	5	25.0%

Store Interior Advertisements or Promotions

Stores were assessed for specific ads or promotion themes in the interior of the store. First, staff looked to see if there were health promotion items around the fruit and vegetables display. Of the 20 stores with this data, only 3 (15%) had a health promotion item. Staff then categorized each health promotion item into one of the following

themes:

- 5 A Day signs
- Nutrition information
- Fruit and Veggies: More matters
- Children's Healthy Living (CHL) or CHL partnership
- Other

In Palau, the three stores with health promotion items around the fruit and vegetable display had item categorized as "Other: Eat Local". Stores were also assessed for ads promoting locally grown produce. Of the 20 stores with this data, 10 (50%) promoted locally grown produce.

Table S.7.6. Advertisements Inside the Store (N=20)

Interior Advertisements	Number	Percent
Health promotion around the fruit and vegetable display	3	15.0%
5 A Day signs	0	0%
Nutrition information	0	0%
Fruit and Veggies: More matters	0	0%
Children's Healthy Living (CHL) or CHL partnership	0	0%
Other (Eat local)	3	15.0%
Promotion of locally grown produce	10	50%

Staff looked at the marketing (presence of ads and product placement) of specific healthy and unhealthy foods near the main check-out area. The presence of ads or promotions recorded included those next to or below the check out, on the floor, or hanging from the ceiling. The presence of products recorded included those next to or below the check out and near the exit doorway. The healthy products surveyed include

the following:

- Granola bars (whole grain, ≥ 2 g fiber, ≤ 1 g saturated fat, ≤ 14 g sugar per serving)
- Bagged Nuts/seeds (does not include honey roasted or w/ added sugar) (next to or below counter/check-out)
- Fresh fruit (next to or below counter/check-out)
- Bottled water (next to or below counter/check-out)
- Other: specify (such as dried fruit, trail mix, 100% juice, etc.)

The unhealthy products surveyed include the following:

- Gumball or candy machine (next to counter or exit doorway)
- Candy (next to or below counter/check-out)
- Soda (next to or below counter/check-out)
- Chips (next to or below counter/check-out)
- Other: specify (such as cookies, ice cream, beef jerky, energy drinks, etc.)

Among the 20 stores surveyed all had information on the marketing near the main check-out area. Looking at ads for healthy food products, 19 stores had 0 ads and 1 store had ads for 1-2 items. Looking at ads for unhealthy food products, no stores had 0 ads, 4 stores had ads for 1-2 items, and 16 stores had ads for 3-4 items. More stores had at least one ad for unhealthy food products compared to healthy food products near the main check-out area (20 versus 1).

Looking at the presence of healthy food products near the main check-out area, 15 stores had 0 items, 4 stores had 1-2 items, and 1 store had 3-5 items. Looking at the presence of unhealthy food products near the main check-out area, 2 stores had 0 items, 17 stores had 1-2 items, and 1 store had 3-5 items. More stores had at least one unhealthy food product compared to healthy food product near the main check-out area (18 versus 5).

Table S.7.7. Store Check-out Area Marketing (N=20)

Marketing next to the main check-out area	Healthy Food Products (n)	Unhealthy Food Products (n)
Presence of ads or promotions		
0	19	0
1-2 items	1	4
3-4 items	0	16
Presence of products		
0	15	2
1-2 items	4	17
3-5 items	1	1

Store Exterior Advertisements on Healthy and Unhealthy Foods

Stores were assessed for ads promoting healthy or unhealthy foods on the exterior of the store. Unhealthy products are high calorie, low nutrient foods and beverages that include alcoholic beverages, soft drinks and other sweetened beverages including diet drinks, sweet desserts and highly sugared cereals, chips and other salty snacks, most solid fats, fried foods, and other foods with high amounts of sugar, fat and/or sodium. Healthy products include minimal or no added fat, sugars, or sweeteners. Examples include fresh or dried fruits and vegetables, whole grain snacks (≥ 2 g fiber per serving), energy bars (≤ 14 g sugar per serving), nuts and seeds, non-fat and low fat milk products, water, or 100% fruit juice.

Among the 18 stores that had data on the presence of exterior ads for healthy foods, 0 (0%) had ads on healthy foods. Among the 20 stores that had data on the presence of exterior ads for unhealthy foods, 11 (55%) had ads for unhealthy foods.

Store Exterior Conditions

Stores were assessed for specific exterior conditions for food promotion. Among the 20 stores surveyed, none had produce bins on the sidewalk in front of the store. No stores had other products (e.g., soda, water) displayed on the sidewalk in front of the store or inside the store next to the window so they are clearly visible from the outside. There was no vending machine on the sidewalk in front of any of the 20 stores surveyed. There were ads on the roof, walls, or anywhere on the store property among 9 (45%) of stores surveyed. One store (5%) had images of healthy foods and 2 stores (10%) had images of unhealthy foods and/or beverages painted on doors or windows of the storefront. None of the stores had painted murals of healthy food and/or beverages on the building walls of the store.

Table S.7.8. Store Exterior Conditions (N=20)

Exterior Conditions	Number	Percent
Produce bins on the sidewalk in front of the store	0	0%
Products displayed on the sidewalk in front for the store or inside the store next to the window	0	0%
Vending machines on the sidewalk in front of the store	0	0%
Advertising (banners, posters, temporary signs, etc.) on the roof, walls or elsewhere on the property	9	45.0%
Images of healthy food (e.g. tomato, apple) and/or beverages (e.g. milk) painted on doors or windows of the storefront	1	5.0%
Images of unhealthy food (e.g. hamburger, hot dog) and/or beverages (e.g. soda, shake) painted on doors or windows of the storefront	2	10.0%
Painted murals of healthy foods and/or beverages anywhere on the building walls	0	0%

Perceptions of Safety at Store

Store were assessed for perceptions of safety including whether there were bars or chains on the exterior, whether advertisements covered no more than 1/3 of the window area and the cash register could be seen from the outside for stores that sold alcoholic beverages (e.g. the Lee Law which was passed in California ref), whether people felt safe walking in and around the store, and if the store was located in a safe, walkable environment. Among the 20 stores, 20 (100%) had bars. Among 16 stores with information on Lee Law compliance, 16 (100%) complied with Lee Law. Among 5 stores assessed for whether people feel safe during the walk around or outside of the store only 2 (40%) of stores were rated that people feel safe. And among all 20 stores which were assessed for walkability, only 3 stores (15%) met standards for being located in a safe, walkable environment.

Table S.7.9. Perceived Safety of Store (N=20)

Safety	Number	Percent
Store has bars or chains on windows or doors	20	100.0%
Store sells alcohol and no more than 1/3 of window area is covered with ads (Lee Law) (n=16)	16	100.0%*
People feel safe during the walk around or outside of the store (n=5)	2	40.0%**
Store meets standards for being located in a safe, walkable environment	3	15.0%

Overall Summary of Store Assessments

Among the 20 stores surveyed in Palau there were strengths and areas needing improvement in order for stores to support community health.

Variety, Quality, and Availability of Fruits and Vegetables and Other Healthy Foods

- Of the 20 stores with this data in Palau, only 3 stores had a wide variety of fruits

and vegetables. There were 8 stores (40.0%) that sold no fruits and no vegetables,

- For the stores that had fruits and vegetables, 5 stores can improve their quality of fruit and their quality for vegetables.
- All stores can improve the availability of common, as well as local fruits and vegetables.
- Among the 20 stores assessed for Other Healthy Foods, all provided soy beverages, however at least 75% lacked a low fat dairy option, 10 (50.0%) lacked at least one non-meat protein, 12 (60.0%) lacked at least one whole-grain item, 7 (35.0%) lacked at least one canned/ frozen fruit or vegetable, and 15 (75.0%) lacked at least one baby food.

Ads, promotions, and marketing

- Among the 20 stores in Palau, only 3 stores had health promotion items around the fruit and vegetables display. However, 10 of them promoted of locally grown produce.

- Stores in Palau are more likely to have ads for unhealthy food products than healthy food products near the main check out area (4 stores versus 1 store). Stores in Palau also had at least one unhealthy food product compared to unhealthy food product near the main check-out area (17 versus 4).

- On the store exterior 11 stores had ads for unhealthy foods, while 0 had ads for healthy foods.

- Looking at the store exterior conditions, 0 had produce bins on the sidewalk in front of the store. Only 1 store had images of healthy food and/or beverages painted on doors or windows of the storefront. None of the stores had painted murals of healthy foods and/or beverages anywhere on the building walls.

Perceptions on Safety around the Store

- All stores surveyed in Palau, had bars or chains on the windows, only 2 stores were rated as people feeling safe around or outside of the store, and only 3 stores were in a location deemed to be a safe, walkable environment.
- A majority of stores met the standards of California's Lee Law to limit the amount of space taken by advertisements for alcohol on the store exterior.

Section 8. Walkability Survey

Everyone benefits from walking. These benefits include: improved fitness, cleaner air, reduced risks of certain health problems, and a greater sense of community, but walking needs to be safe and easy.

CHL staff conducted two separate walkability survey in Palau. The survey included a checklist of items to be observed and rated, which are related to the safety and quality of the walk. The individual scores for these items were then added for a total score to get an overall rating for the community walkability.

Community walkability rating scale		
Rating Scale	**Total Score**	**Community Walkability**
1	26-30	Celebrate! You have a great neighbourhood for walking.
2	21-25	Celebrate a little. Your neighbourhood is pretty good.
3	16-20	Okay, but it needs work.
4	11-15	It needs lots of work.
5	5-10	It's a disaster for walking!

The total rating scores for Palau, as well as the individual scores for the 5 items, are summarized in the table below. For the total score, the number of neighborhoods audited (n) is 6. This is followed by the mean total score (24.0), standard deviation (3.2), median (23.5), minimum (19.0), and maximum (28.0). According to the mean total score, the neighborhoods surveyed in Palau should be celebrated (however can always be improved) as the neighborhoods are pretty good and encourage community walkability.

Table S.8.1. Community Walking Features

Walking Features	n	mean	SD	med	min	max
Total Score	6	24.0	3.2	23.5	19.0	28.0
Room to walk	6	4.3	1.4	4.0	3.0	6.0
Ease of crossing street(s)	6	5.2	0.7	5.0	4.0	6.0
Ease of following safety rules	6	4.8	0.4	5.0	4.0	5.0
Drivers' behavior	6	4.8	0.4	5.0	4.0	5.0
Pleasantness of walk	6	4.8	1.0	5.0	3.0	6.0

*Walkability survey and rating scale is adapted from Pedestrian and Bicycle Information Center (http://www.pedbikeinfo.org/planning/tools_audits.cfm)

Food Cost Survey (FCS)

The CHL Food Cost Survey (FCS), adapted from the Alaska Food Cost Survey, was conducted in all of the CHL jurisdictions in March 2014. Given the link between childhood obesity and food security, particularly in low income households, CHL conducted this survey of communities in the CHL jurisdictions. Three stores in Palau were assessed to determine the cost and availability of market foods in Palau.

The FCS is based on a meal plan, in particular, the USDA Thrifty Food Plan (TFP). The Thrifty Food plan, based on a national survey of dietary habits, is designed to meet the nutritional needs at low cost for a family of four with school age children (USDA, 1999). It assumes that the food items are bought at a store and are prepared at home. This menu is made of foods in 10 categories. The categories include fruits, vegetables, meats, legumes, dairy, egg, fats / oils, grain, sweets / beverages, and spices. Included in the report is the percent of each category towards the Thrifty Food Plan cost. The TFP is also used as the basis for determining food assistance levels provided in programs such as school lunch.

If a particular item was missing in a local area/ jurisdiction, we used the cost of a similar item as a substitute for the item that was on the national menu. However, in some

cases, items were unavailable and no obvious substitutes were available.

Portland, Oregon serves as a general indicator of and reference point for the price series in a somewhat comparable mainland/lower 48 city and its food costs have been collected using the same survey as that was used by CHL. The weekly food cost for a family of four with two adults and two young school- age children in Portland was $142.37.

It is important to note that the Thrifty food Plan menu was developed based on diets and food availability in the contiguous U.S. Further work is necessary to document local diets and food availability and to examine how they may be incorporated into an adjusted thrifty food menu for use in Palau, and its effect on community food costs.

Results for Palau

Food Cost Survey, Costs of Food at Home ($) based on the Thrifty Food Plan and USDA adjustments.

In Palau, the following three foods had no price information: grounded pork, banana, and catsup. The weekly food cost for the Thrifty Food Plan menu for a family of four in Palau was $258.94. In the CHL region, the average cost was $215.18, with a minimum of $173.97 and a maximum of $286.30. The cost in Portland, USA was $142.37. Palau's costs for the same or comparable food items of the Thrifty Food Plan are 81.7% of their cost in Portland, Ore.

This provides a measure of the affordability of food in Palau as measured by the cost of the Thrifty Food Plan.

Table 1. Weekly and Monthly Food Cost to Eat According to the U.S. Thrifty Food Plan in Palau

Age, Groups	Weekly	Monthly
INDIVIDUALS		
Child, 6-8 years	$54.27	$235.16
Child, 9-11 years	$64.40	$279.04

Male, 20-50 years	$73.31	$317.69
Female, 20-50 years	$66.97	$290.18
FAMILY		
Family of 2, 20-50 years	$154.34	$668.79
Family of 4 , Couple, 20-50 years and children, 6-8 and 9-11 years	$258.94	$1,122.07

***** Ratio used to calculate cost of family of other size and individuals are based on Center for Nutrition and Policy and Promotion (CNPP)'s Official USDA Alaska and Hawaii Thrifty Food Plans at http://www.cnpp.usda.gov

Thrifty Food Plan, Weekly Food Costs: By Food Category

Cost and percent of each food category was presented in the following table (Table 2), in the order from most expensive to least expensive.

Table 2. Weekly Thrifty Food Plan Costs for a Family of 4 by Food Category in Palau

Food Group	Cost	Percent
Grain	53.55	20.7%
Meat	52.45	20.3%
Fruit	45.38	17.5%
Dairy	33.96	13.1%
Vegetable	29.22	11.3%
Sweets and Beverages	22.56	8.7%
Spice	8.53	3.3%
Legume	4.57	1.8%
Egg	4.53	1.7%
Fats and Oils	4.19	1.6%

Thrifty Food Plan, Weekly Food Costs: Top 10 Most Expensive Foods

The top 10 most expensive foods in Palau were presented in Table 3.

Table 3. Top 10 Most Costly Food Items in Palau

Food	Food Group	Price	Percent
Orange juice, frozen concentrate	Fruit	$23.11	8.9%
Beef, ground, lean (16 to 23% fat)	Meat	$22.30	8.6%
Milk, 1% milk fat	Dairy	$21.14	8.2%
Fruit drink, refrigerated, any flavor	Sweets and Beverages	$14.05	5.4%
Hamburger buns, enriched	Grain	$13.85	5.3%
Milk, whole	Dairy	$9.39	3.6%
Ready-to-eat cereal, Toasted Oats	Grain	$9.02	3.5%
Potatoes, any variety	Vegetable	$9.01	3.5%
Fish, flounder, cod, tilapia or similar, frozen	Meat	$6.81	2.6%
Oranges, any variety (bagged or loose)	Fruit	$6.47	2.5%
Total		$135.15	52.1%

Summary

The CHL food cost survey found the cost of food for a family of four, using the TFP, to be $258.94 per week which is 181.9% higher than the weekly food cost for a family of four in Portland, Oregon. In comparison to the average CHL region ($215.98), the weekly food cost in Palau was 19.9% higher.

Summary of Prevalence Study

Children's Healthy Living Program

VII. Conclusion / Summary of Prevalence Study

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

By increasing the amount of fruit and vegetables sold at stores; increasing pedestrian access to parks; ensuring sidewalks leading to entrance of schools; increasing healthy menu items; and addressing food cost, could all serve to better the health and well-being of young children in the community.

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.

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