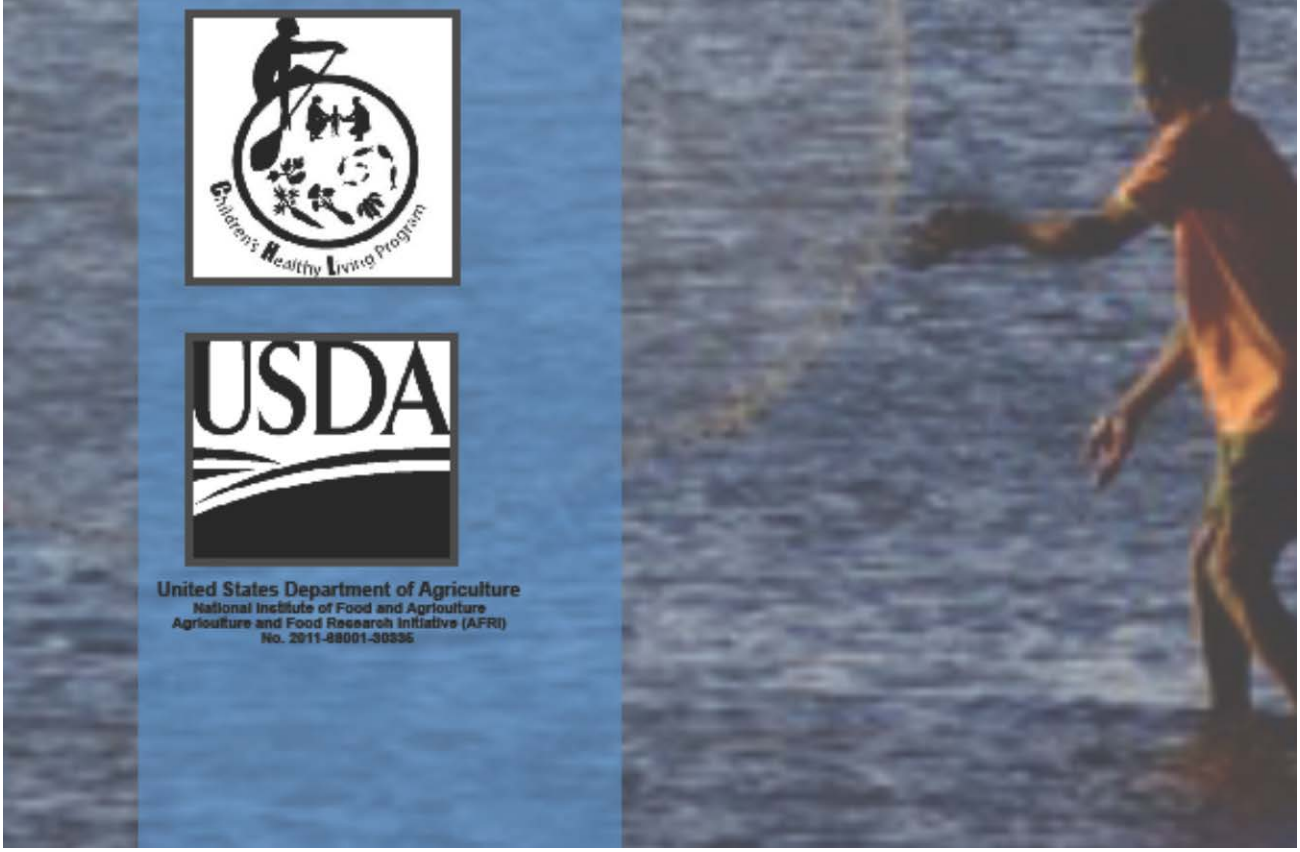
CHILDREN'S HEALTHY LIVING PROGRAM

For Remote Underserved Minority Populations In The Pacific Region



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

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

Chuuk Prevalence Survey Results

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Executive Summary

I. Executive Summary

Introduction to the Report

The CHL program utilizes three major strategies towards its goals: 1) training, 2) extension – 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 Chuuk; 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

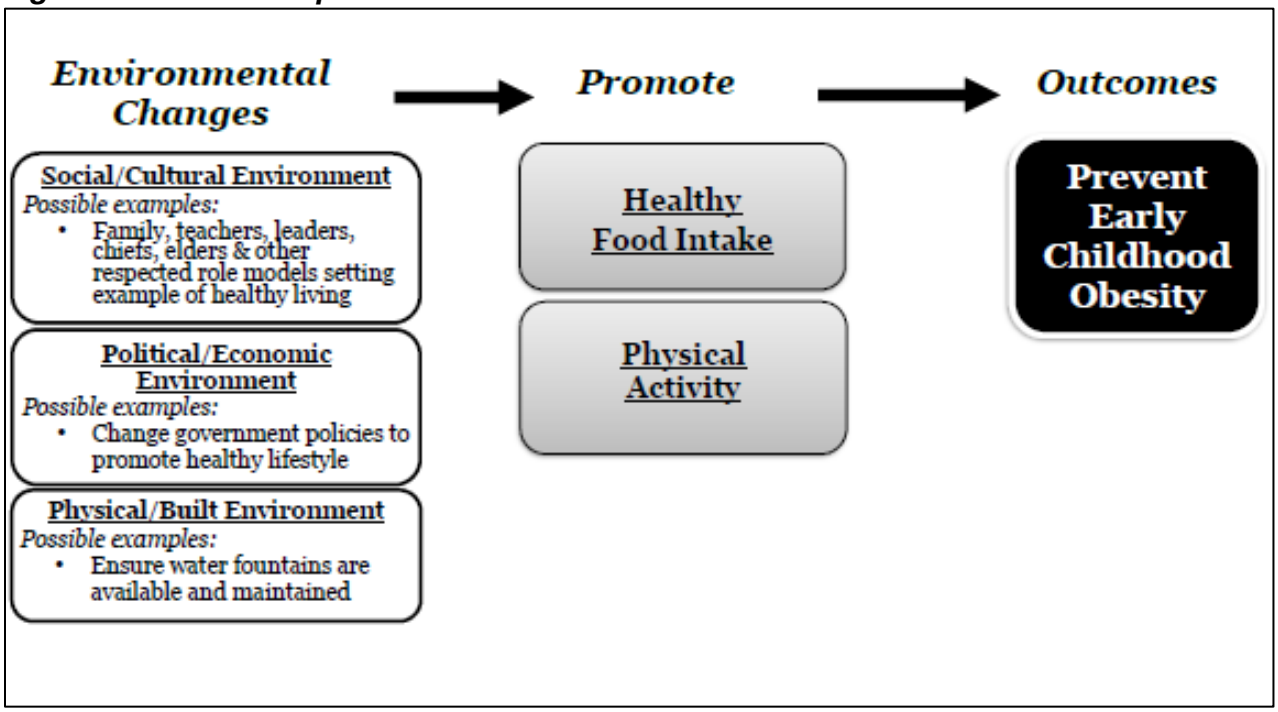
6) Reduced TV/video viewing

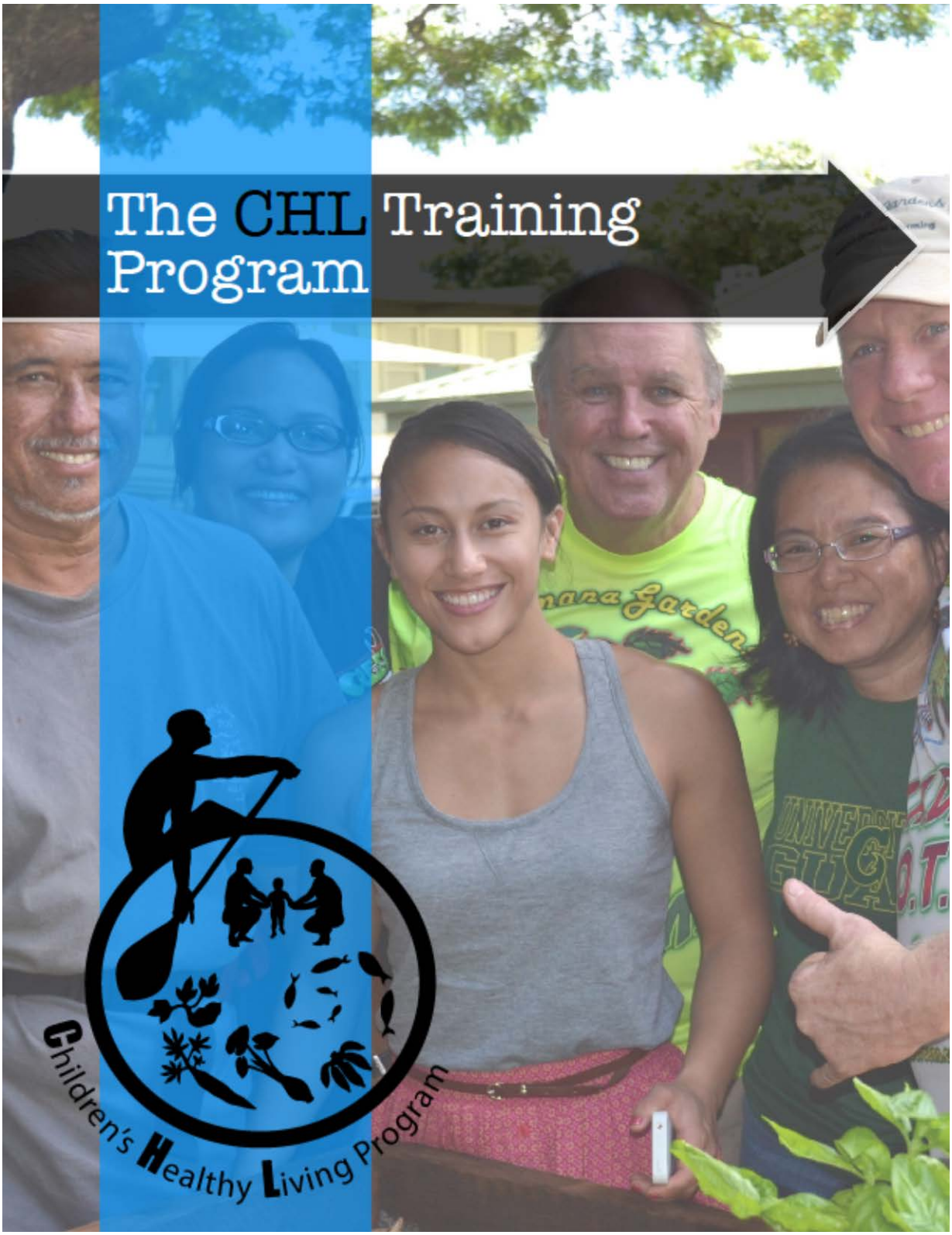
7) Increased physical activity

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.

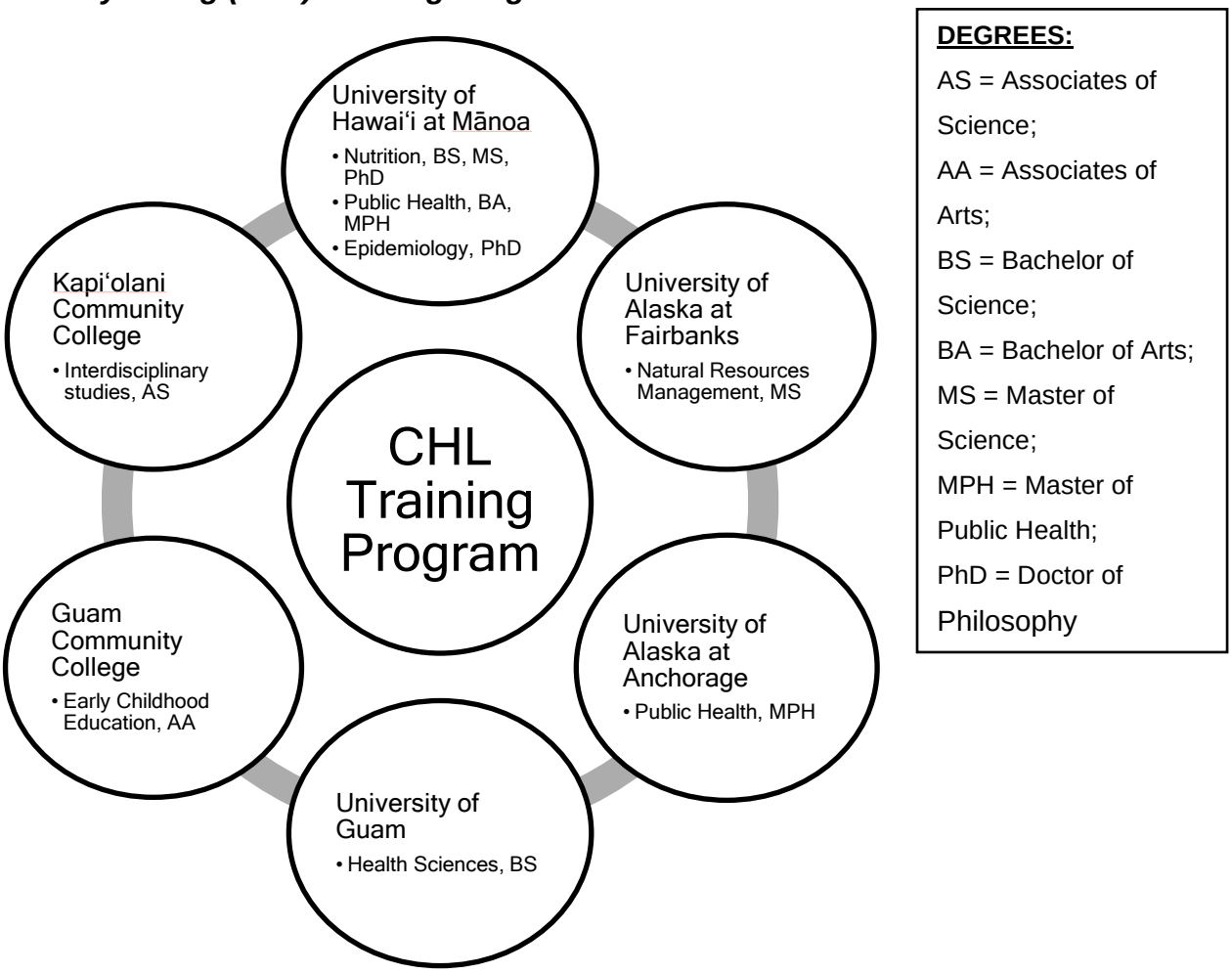
Training Program Partnerships

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 Chuuk, 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 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.

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



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

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). One graduate-level Trainee from Alaska is expected to complete a MS in the Summer of 2016 and another graduate-level Trainee from Alaska is expected to complete a MPH in the Fall of 2016. One graduate-level Trainee from CNMI is expected to complete her MPH degree while one graduate level Trainee from American Samoa is expected to complete a PhD in Epidemiology in the Spring of 2017. Two undergraduate Trainees from Chuuk, and the Marshall Islands are expected to graduate in Fall 2016 with Bachelor's degrees in Public Health. One undergraduate Trainee from Kosrae is expected to complete a degree in Nutrition in Spring 2017. Four undergraduate Trainees from Pohnpei, Chuuk, Kosrae, 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 May 2015 in Chuuk.

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 Chuuk; 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 Chuuk 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.

Children were recruited in the communities of Iras Demo, Mock, Sapuk, Tol, Tonoas, and Uman by the CHL Chuuk team and were conducted in late May 2015.

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 Chuuk in May 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. 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 231 children were consented to participate in the survey. The Chuuk 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**


Community Report
Children's Healthy Living Program

V. Chuuk Community Report

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

Sex: 191 children participated had data on sex.

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

Sex	Number	Percent
Boys	106	55.5%
Girls	85	44.5%
Total	191	100.0%

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

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

Age in Years	Number	Percent
Age 2	--	--
Age 3	2	1.0%
Age 4	24	12.2%
Age 5	82	41.6%
Age 6	59	30.0%
Age 7	18	9.1%
Age 8	12	6.1%
Total	197	100%

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

Age in Years	Number	Percent
2-5 years old	108	54.8%
6-8 years old	89	45.2%
Total	197	100%

Racial and Ethnic Heritage

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

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
Native Hawaiian or other Pacific Islander	172	88.2%
More than one race	23	11.8%
Total	195	100%

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

Race of child of Pacific definition	Number	Percent
Chuukese	169	86.7%
Mixed Chuukese	23	11.8%
Native Hawaiian mixed with Chuukese	3	1.5%
Total	195	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
Chuuk	182	92.4%
Guam	9	4.6%
Hawaii	4	2.0%
Other (including Oregon and Utah)	2	1.0%
Total	197	100%

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

Among the 197 children, 191 had information on this question. Among them, **149 (78.0%) lived their whole life in Chuuk** and the rest, 22.0%, spent 16 to 82 percent of their life in Chuuk.

Language Child Speaks

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

Note: Language responses may total over 197 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
Chuukese	189	95.9%
English and Chuukese	8	4.1%
Total	197	100%

Chuukese was the top language spoken at home (97.5%). Children in Chuuk also spoke English, and English and Chuukese at home. Ninety-five percent of children spoke one language other than English at home. **Five percent of the children spoke English and at least one other language**.

Child Anthropometric Measurement Results

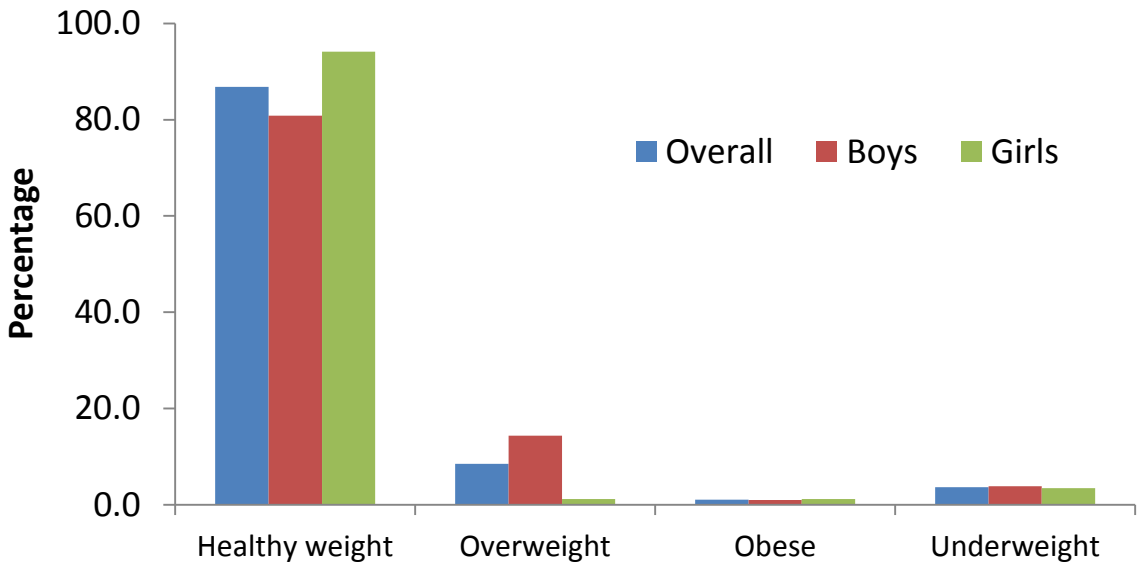
Section 2. Child Anthropometric Measurement Results

Body Mass Index

Among the 197 children who participated in Chuuk, 189 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 Chuuk



A total of 189 children were included for this analysis. Among them, 86.8% were healthy weight, 8.5% were overweight, 1.1% were obese, and 3.7% were underweight. 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, 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 71.47 cm.

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 88 participants in Chuuk between the ages 6-8 years, using the CHL cutoff, none were considered as having abdominal obesity. Using the IDF cutoff value, none of the 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. This screening 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 197 children who participated, 194 had data on AN, of which 6 (3.1%) screened positive for AN.

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 Chuuk, 121 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	Chuuk	
	Number of times reported	% of all foods reported
#1 Rice, White, Not Enriched	524	27.3%
#2 Sardines, Canned, In Oil, Drained	131	6.8%
#3 Fish, Dolphinfish (Mahimahi)	81	4.2%
#4 Saimin, Soup, From Dry, Oriental Broth with Noodles	66	3.4%
#5 Taro, Cooked	61	3.2%

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.

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 Chuuk, children ate 0.8 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 0.2 per day and the average servings of vegetables was 0.6 per day.

7 children (5.8%) in Chuuk met the U.S. national recommendations for daily fruit consumption.

11 children (9.1%) in Chuuk met the U.S. national recommendations for daily vegetable consumption.

Note that the percentages meeting the fruit and vegetable recommendations may 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.

95.9 % of parents / caregivers reported on the two-day Food and Activity Log that their

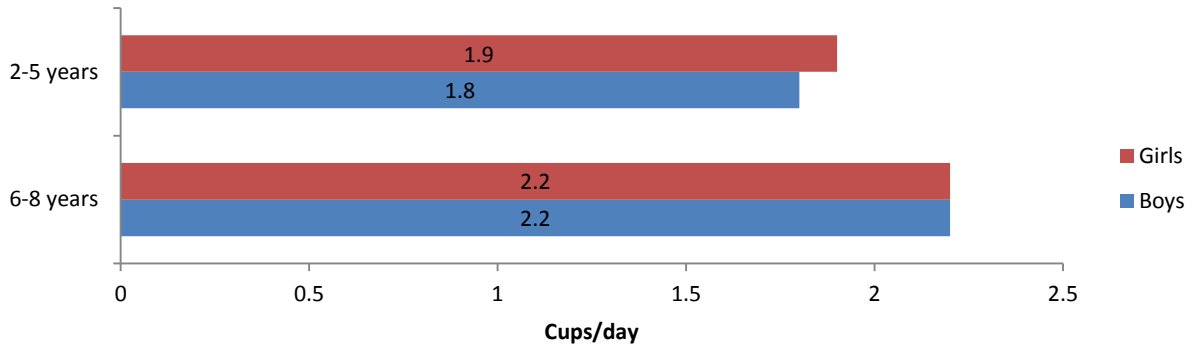
child drank water over these two days.

On average, children in Chuuk drank 2.1 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	Chuuk	
	Number	**Average**
Boys		
2 – 5 years	29	1.8
6 – 8 years	34	2.2
All	63	2.0
Girls		
2 – 5 years	18	1.9
6 – 8 years	40	2.2
All	58	2.1

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, 40 (33.1%) of parents/caregivers in Chuuk reported that their child consumed SSBs.

Children drank 0.4 cups of sugar-sweetened beverages on average daily.

For Chuuk, the most frequently consumed SSB included coconut milk, coconut water, and canned sweetened tea.

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

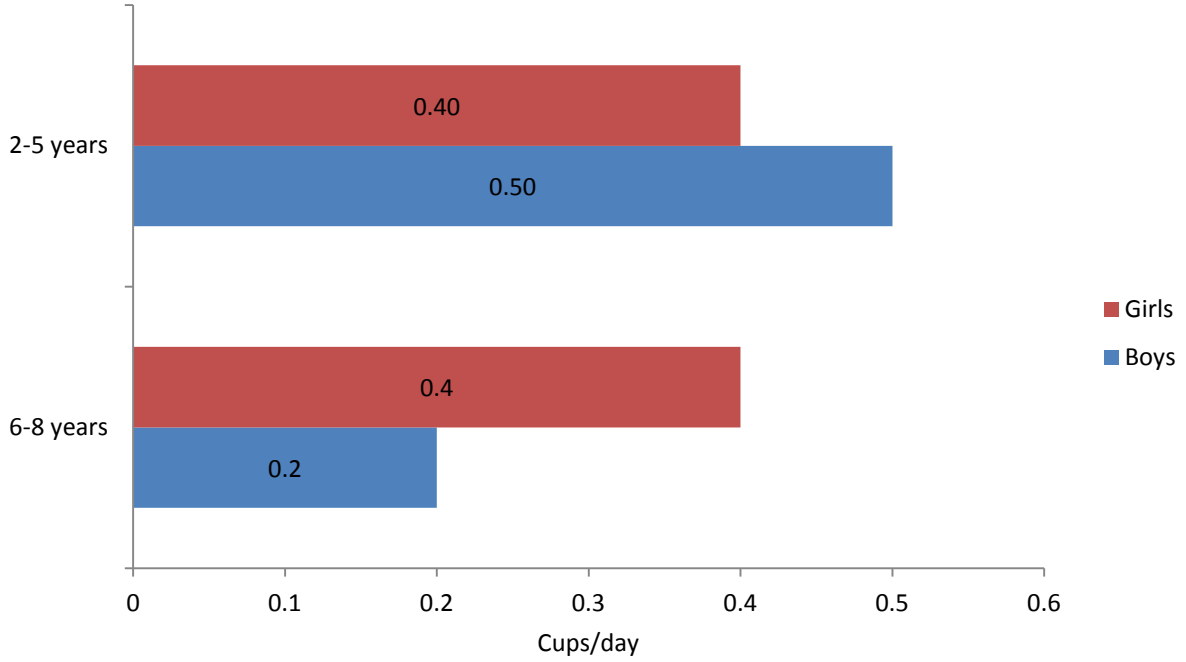


Table S.3.4. Mean SSB intake (cups/day) for all Children and those with SSB's Recorded for Chuuk

Mean SSB intake (cups/day)	All children		SSB Recorded	
	Number	Mean (SD)	Number	Mean (SD)
Boys				
2 – 5 years	29	0.5	12	1.2
6 – 8 years	34	0.2	7	0.9
All	63	0.3	19	1.1
Girls				
2 – 5 years	18	0.4	7	1.0
6 – 8 years	40	0.4	14	1.1
All	58	0.4	21	1.1

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

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	28 (96.6%)	1 (3.5%)	11 (91.7%)	1 (8.3%)
6 – 8 years	34 (100.0%)	0 (0.0%)	7 (100.0%)	0 (0.0%)
All	62 (98.4%)	1 (1.6%)	18 (94.7%)	1 (5.3%)
Girls				
2 – 5 years	17 (94.4%)	1 (5.6%)	6 (85.7%)	1 (14.3%)
6 – 8 years	38 (95.0%)	2 (5.0%)	12 (85.7%)	2 (14.3%)
All	55 (94.8%)	3 (5.2%)	18 (85.7%)	3 (14.3%)

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 cpm 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 Chuuk, Actical accelerometers from 81 children provided valid data on their physical activity levels. After excluding outliers, on average children spent 10.4 hours in sedentary activities (sd=0.9 hours).

On average, children in Chuuk spent 12 hours and 7 minutes (sd=0.8 hours) on light activities. On average, children in Chuuk engaged 1 hour and 21 minutes on moderate activities (sd=0.5). On average, children in Chuuk spent 7 minutes (sd=0.1 hour) on vigorous activities. On average, children spent 1 hour and 28 minutes on moderate or

vigorous activities (sd=0.6 hour).

Of the 81 children with accelerometer data, 63 (77.8%) of children in Chuuk 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.

This information can be found in the following table.

Table S.4.1. Hours of Physical Activity by Type

Physical activity from accelerometer	Mean hours/day (*sd*)	
Sedentary activities (weighted)	10.4 (0.9)	
Light activities (weighted)	12.1 (0.8)	
Moderate activities (weighted)	1.4 (0.5)	
Vigorous activities (weighted)	0.1 (0.1)	
Moderate and vigorous activities (weighted)	1.5 (0.6)	
	Number	**%**
Met national recommendation of >=60 minutes of moderate or vigorous physical activity daily	63	77.8%

Screen Time

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 197 children participated in Chuuk, **time spent on TV watching per day was 1.3 hours per day** (sd=1.8 hour) overall, 1.3 hours per day (sd=1.9) on weekdays, and 1.5 hours per day (sd=2.0) 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	52.3%	57.7%	53.7%
More than ½ hour up to 2 hours	22.8%	19.9%	20.8%
More than 2 hours up to 4 hours	17.3%	15.3%	15.1%
More than 4 hours up to 6 hours	3.6%	2.0%	5.7%
More than 6 hours up to 7 hours	4.1%	5.1%	4.7%
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 197 children participated in Chuuk, a total of 193 had data on the overall time spent on inactive video games. The **overall average among those 193 children is 0.6 hours/day** (sd=1.0 hour). A total of 162 children had data on weekday or weekend inactive video time. Average inactive video time on weekdays is 0.5 (sd=1.0) and on weekends is 0.5 (sd=1.1). 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	71.0%	80.5%	77.7%
More than ½ hour up to 2 hours	18.7%	10.5%	14.0%
More than 2 hours up to 4 hours	9.3%	7.9%	6.7%
More than 4 hours up to 6 hours	1.0%	1.1%	1.7%
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 197 children participated in Chuuk, a total of 193 had data on the overall time spent on active video games. The **overall average among those 193 children was 0.6 hours per day** (sd=1.1). A total of 189 children had data on weekday active video time. Average active video time on weekdays was 0.5 hours per day (sd=1.0). A

total of 187 children had data on weekend active video time. Average active video time on weekend was 0.6 hours per day (sd=1.2). 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	75.1%	79.9%	78.1%
More than ½ hour up to 2 hours	15.0%	12.2%	11.8%
More than 2 hours up to 4 hours	8.3%	7.4%	6.4%
More than 4 hours up to 6 hours	1.6%	0.5%	3.7%
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 197 children participated in Chuuk, 195 had data on the overall screen time, which averaged 2.5 hours per day. A total of 194 had data on weekday screen time, which averaged 2.3 hours per day. A total of 189 had data on weekend screen time, which averaged 2.9 hours per day. 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	40.0%	48.5%	43.4%
More than ½ hour up to 2 hours	21.0%	18.0%	15.3%
More than 2 hours up to 4 hours	14.9%	11.3%	14.3%
More than 4 hours up to 6 hours	10.3%	8.3%	10.1%
More than 6 hours	13.9%	13.9%	16.9%
Total	100%	100%	100%

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	--	--
Less than 9 hours	--	--
9 hours to less than 11 hours	--	--
11 hours or more (to 13.5 hours)	--	--
3 – 5 year olds	91	100%
Less than 8 hours	10	11.0%
From 8 hours to less than 10 hours	15	16.5%
From 10 hours to 13.5 hours	66	72.5%
6 – 8 year olds	75	100%

Hours of sleep in 24 hours at night and in naps (on average and from parent / caregiver report)	Number	%
Less than 7 hours	3	4.0%
From 7 hours to less than 9 hours	18	24.0%
From 9 hours to 13.5	54	72.0%

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	--	--
Three to five year olds met recommendation of 10 – 13 hours of sleep	66	72.5%
Six to eight year olds met recommendation of 9 – 11 hours of sleep	54	72.0%

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 Sleep

How long after going to bed does your child usually fall asleep?	Number	%
0 to less than 15 minutes	120	60.9%
15 to less than 30 minutes	52	26.4%
30 to less than 45 minutes	14	7.1%
45 to less than 60 minutes	2	1.0%
60 minutes and more	9	4.6%
Total	197	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	138	70.4%
The behavior occurs once or twice a month	13	6.6%
Occurs one to two times a week	18	9.2%
Occurs between three and five nights a week	6	3.1%
The sleep behavior happens every night	21	10.7%
Total	196	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	117	59.7%
The behavior occurs once or twice a month	18	9.2%
Occurs one to two times a week	20	10.2%
Occurs between three and five nights a week	6	3.1%
The sleep behavior happens every night	35	17.9%
Total	196	100%

Table S.6.6. Number and Percent of Children Difficulty Falling Asleep After Wakening

After waking up in the night, child has difficulty falling asleep again by himself or herself.	Number	%
This sleep behavior never occurs	154	79.0%
The behavior occurs once or twice a month	14	7.2%
Occurs one to two times a week	16	8.2%
Occurs between three and five nights a week	2	1.0%
The sleep behavior happens every night	9	4.6%
Total	195	100%

Table S.6.7. Number and Percent of Children that Sleep 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	82	42.3%
The behavior occurs once or twice a month	22	11.3%
Occurs one to two times a week	33	17.0%
Occurs between three and five nights a week	9	4.6%
The sleep behavior happens every night	48	24.7%
Total	194	100%

Table S.6.8. 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	144	74.2%
The behavior occurs once or twice a month	12	6.2%
Occurs one to two times a week	12	6.2%
Occurs between three and five nights a week	3	1.6%
The sleep behavior happens every night	23	11.9%
Total	194	100%

Table S.6.9. 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	110	56.1%
The behavior occurs once or twice a month	27	13.8%
Occurs one to two times a week	28	14.3%
Occurs between three and five nights a week	12	6.1%
The sleep behavior happens every night	19	9.7%
Total	196	100%

Table S.6.10. Number and Percent of Children with Sleeping Difficulties

Do you think your child has sleeping difficulties?	Number	%
No	173	89.6%
Yes	20	10.4%
Total	193	100%

Medical

Section 7. Medical

Parents answered the question: Does your child have any current medical conditions diagnosed by a doctor? Among the 197 children, 191 had data on this and 30 (15.7%) reported that their children had a medical conditions diagnosed by a doctor. The top medical condition was asthma (20, 74.1%).

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	113	61.1%
Once per day	61	33.0%
Once per week	10	5.4%
Once per year	--	--
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	141	77.1%
Yes	42	23.0%

Early Life & Feeding Of A Child

Section 8. Early Life and Feeding of Child

Birth Weight

Among the 197 children participated from Chuuk, a total of 41 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	9	22.0%
Healthy birth weight (2500 – 4000 g)	21	51.2%
High birth weight > 4000 g	11	26.8%

Among the 197 children participated in Chuuk, a total of 4 had information on birth length. Among the 4 children, 2 (50.0%) had birth length below the 5th percentile using the CDC 2000 reference data, which is at 45.57 cm.

Early Feeding Pattern

Among the 197 children participated in Chuuk, a total of 191 had information on breastfeeding. Among the 191 children, 172 (90.1%) of children were reported to ever have breastfed.

Table S.8.2. Number and Percent of Children ever Breastfed or fed Breast Milk

Child ever Breastfed or fed Breastmilk	Number	%
Yes	172	90.1%
No	19	10.0%
Total	191	100%
If Yes, (about children who were ever breastfed)		
Mean age child stopped breastfeeding or being fed breast milk (months) (n=136)	9.7 months	

Among the 197 children participated in Chuuk, a total of 177 had information on formula feeding. Among those 177 children, 51 (28.8%) of children were reported to have 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	51	28.8%
No	126	71.2%
Total	177	100%
If Yes, (about children who were fed formula)		
Mean age (sd) child first fed formula (months) (n=40)	3.2 months	
Mean age (sd) child completely stopped drinking formula (months) (n=28)	9.1 months	

A total of 113 out of the 197 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 was 6.3 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	125	63.5%
Legal guardian, caregiver, other	28	14.2%
Adoptive mom	14	7.1%
Birth dad	14	7.1%
Step mom	10	5.1%
Other	6	3.1%

*Includes adoptive dad, step dad, step mom, and adoptive mom

Marital Status

A total of 194 out of the 197 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	162	83.5%
Divorced	10	5.2%
Widowed	8	4.1%
Single and not living with boyfriend, girlfriend, or partner	6	3.1%
Other (not specified)	4	2.1%
Separated	4	2.1%

Household Size and Multi-generation Households

All 197 children had information on the number of people lived in the same household and their relationship to the child. Among them, 100 (50.8%) were from multi-generation households. Mean size of household was 10, with the minimum of 2 and maximum of 42.

Education

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

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

Education	Number	Percent
Never attended school or only kindergarten	5	2.6%
Grades 1 up to 8 (elementary to middle)	63	32.3%
Grades 9 to 11(some high school)	54	27.7%
Grades 12 or GED (high school graduate)	46	23.6%
College or technical school 1 to 3 years	24	12.3%
College 4 years or more	3	1.5%
Total	195	100%

Employment Status of the Caregiver Participants

Among the 197 children participated in Chuuk, 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, unable to work, or whether the caregiver had more than one job.

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

Employment	Number	Percent
Employed for wages / salary	20	10.2%
Self-employed	19	9.6%
Subsistence	10	5.1%
Out of work (less than 1 year)	2	1.0%
Out of work (more than 1 year)	5	2.5%
Homemaker	149	75.6%
Student	6	3.1%
Retired	1	0.5%
Unable to work	3	1.5%
More than one job	53	26.9%

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

Household Income Level

Among the 197 children that participated in Chuuk, 62 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	41	66.1%
From $2500 to less than $5000	9	14.5%
Under $10,000	3	4.8%
From $10,000 to less than $20,000	4	6.5%
From $20,000 to less than $35,000	1	1.6%
From $35,000 to less than $60,000	--	--

From $60,000 to less than $75,000	--	--
Above $75,000	4	6.5%
Total	62	100%

Religion

Among the 197 children, a total of 196 had information on family's religious affiliation. Out of the 196, 1 (0.5%) reported no religious affiliation. Among the 195 with any type of religious affiliation, the distribution of different religious affiliations is presented in the following table. A total of 119 had information on how often they engage in religious activities. The mean number of times per month attending religious activities was 11.6 among those participants.

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

Religion Affiliation	Frequency	Percent
Protestant	95	48.7%
Catholic	77	39.5%
Mormon/Latter-day Saints	12	6.2%
Baptist	6	3.1%
Other*	5	2.6%
Total	195	100%

*Other including Jehovah's Witness, Pentecostal, Evangelical Covenant, 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 197 children who participated in

Chuuk, a total of 117 had information on whether money for food runs out, while 96 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	9	7.7%
Seldom	7	6.0%
Sometimes	77	65.8%
Most times	16	13.7%
Always	8	6.8%
Money for household utilities (water, fuel, etc.) runs out before the end of the month.		
Never	10	10.4%
Seldom	5	5.2%
Sometimes	63	65.6%
Most times or always	8	8.3%
Always	10	10.4%

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 197 children who participated in Palau, all 197 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	12	6.1%
River/ Stream/ Creek	29	14.8%
Community Rain Water Collection	10	5.1%
Private Tap in Yard	93	47.5%
Public/ Shared Standpipe	7	3.6%
Purchased bottled water	9	4.6%
Home Rain water collection	50	25.5%
Neighbor's Tap	25	12.8%
Spring	58	29.6%
Refilling Station	16	8.2%

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	98	51.3%
Somewhat knowledgeable	65	34.0%
Neutral or no response	3	1.6%
Somewhat not knowledgeable	7	3.7%
Not at all knowledgeable	18	9.4%

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	110	57.9%
Somewhat involved	59	31.1%
Neutral or no response	3	1.6%
Somewhat not involved	4	2.1%
Not at all involved	14	7.4%

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	100	52.6%
Somewhat positive	64	33.7%
Neutral or no response	8	4.2%
Somewhat negative	8	4.2%
Very negative	10	5.3%

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	73	37.8%
Somewhat often	81	42.0%
Neutral or no response	10	5.2%
Very little of the time	14	7.3%
Not at all	15	7.8%

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	18	9.2%
Somewhat knowledgeable	53	27.2%
Neutral or no response	10	5.1%
Somewhat not knowledgeable	25	12.8%
Not at all knowledgeable	89	45.6%

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	24	12.2%
Somewhat involved	50	25.5%
Neutral or no response	30	15.3%
Somewhat not involved	9	4.6%
Not at all involved	83	42.4%

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	29	15.0%
Somewhat positive	66	34.2%
Neutral or no response	67	34.7%
Somewhat negative	8	4.2%
Very negative	23	11.9%

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	7	3.6%
Somewhat often	56	28.4%
Neutral or no response	28	14.2%
Very little of the time	18	9.1%
Not at all	88	44.7%

Betel Nut, Tobacco and Alcohol

Betel nut

Among the 197 participants, a total of 177 who participated in Chuuk had information on Betel nut chewing. Out of the 177, 134 (75.7%) reported having never chewed. Among the 43 who indicated that they had ever chewed, 46 (26.4%) indicated that they were current chewers.

Table S.9.17. Betel Nut Usage

Ever chewed Betel Nut	Number	Percent
Yes	43	24.3%
No	134	75.7%
Do you now chew Betel Nut?		
Yes	46	26.4%
No	128	73.6%

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	39	83.0%
No	8	17.0%
Lime included when chewing betel nut?		
Yes	45	97.8%
No	1	2.2%
Betel Leaf included when chewing?		
Yes	44	93.6%

No	3	6.4%
Added alcohol to any of the components of your chew (Nut, leaf, lime, or tobacco)?		
Yes	9	22.5%
No	31	77.5%

Participants were also asked if there were other household members who chewed Betel nut. One hundred and eight (60.0%) participants in Chuuk indicated that there were other household members who chewed. The mean number of household members who chewed was 2.2.

Table S.9.19. Household Member Betel Nut Usage

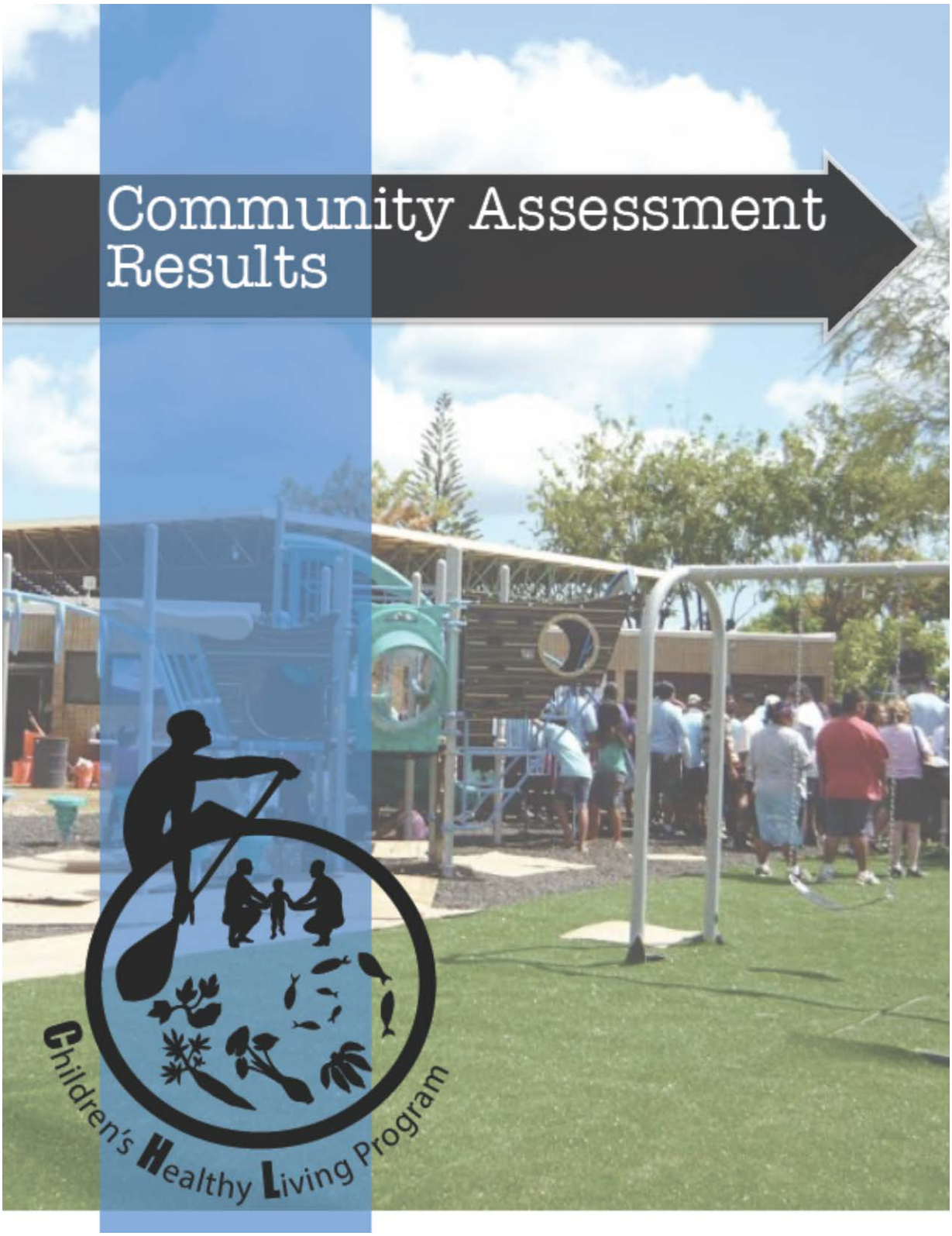
Other household members chew Betel nut?	Number	Percentage
Yes	108	60.0%
No	72	40.0%
How many household members chew Betel nut?		
Average number of household members who chew (n=105)	2.2 members	

Tobacco

Among the 197 participants, a total of 177 had information on Tobacco use. Out of these 177 participants in Chuuk, 22 (12.4%) reported current use of tobacco products. Mean number of tobacco products used per day was 10.7 sticks/pipes. Participants also reported whether other members of the household used tobacco, with the mean number of household tobacco users being 2.1 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	22	87.6%
No	155	12.4%
Other household members use tobacco		
Yes	132	71.7%
No	52	28.3%
How many sticks/pipes do you smoke daily?		
Mean number of sticks/pipes smoked daily (n=3)	10.7 sticks/pipes	
How many household members use tobacco (with or without betel nut)?		
Mean number of household members using tobacco (n=120)	2.1 persons	


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. F ood 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 Chuuk there were 5 parks with this information. Among the 5 parks, 3 (60%) were a public park, of which only one was adjacent to a school and shared sports features with an adjacent school. Two locations in Chuuk (40%) were identified as a communal space.

Three of the parks (60%) had on-site parking, while none of the parks had an on-site parking with overhead lighting, and none of the parks had bicycle parking. All five parks surveyed had information on sidewalks, of which one (20%) park had a sidewalk leading up to the entrance of the park while none had a sidewalk with overhead lighting.

Observation on park amenities included whether it had closing time signage, restrooms, showers, and beverage vending machine. Among the 5 parks with such information, none had restrooms, none had closing time signage, none had showers, and none had beverage vending machines.

Table S.2.1. Park Setting (N=5)

Park Setting	Number	Percent
Setting (n=5)		
Public Park	3	60.0%
Adjacent to a school	1	20.0%
Shares sports features with a school	1	20.0%
Communal Space	2	40.0%
Parking (n=5)		
Parking on-site available (not including street parking)	3	60.0%
Parking has lights	0	0.0%
Bicycle parking racks or cages available	0	0.0%
Sidewalk (n=5)		
Sidewalks on street lead up to the entrance	1	20.0%

Sidewalks have lighting	0	0.0%
Amenities (n=5)		
Park has closing time signage	0	0.0%
Restrooms present	0	0.0%
Showers present	0	0.0%
Beverage vending machines present	0	0.0%

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 Chuuk, none had a response on the question of whether there was an entrance fee. None had signage indicating the park name, none 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 one (20%) had a locked fence or other physical barrier around the perimeter.

Table S.2.2. Park Access and Barriers (N=5)

Access and barriers	Number	Percent
Signage indicates park name	0	0.0%
Signage states public use of area is limited to specific times	0	0.0%
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	1	20.0%

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 five parks surveyed in Chuuk, there were a total of 16 features, of which 4 were rated as ok/good and 12 were rated as poor. Basketball courts were the most frequent features (5), followed by volleyball courts (4). 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 all 5 parks in Chuuk.

Table S.2.3. Sports Features Across all 5 Parks in Chuuk

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	0
Field football	0	0	0	0	0
Field baseball	1	0	1	0	0
Field soccer	1	0	1	0	0
Court basketball	5	1	4	0	1
Court tennis	2	0	2	0	0
Court volleyball	4	1	3	0	1
Court multiuse	1	1	0	0	1
Track	1	0	1	0	0
Pool	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

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 5 parks in Chuuk, there were a total of 10 features and amenities, of which 5 were rated as ok/good and 5 were rated as poor. The most common features and amenities present were green space and fences. 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 5 Parks in Chuuk

Feature	Total Number of the feature	Condition of the Feature		
		OK/Good	Poor	Not rated
Green Space	4	1	3	0
Beach swim	1	1	0	0
Beach recreational	1	1	0	0

Beach lifeguard	0	0	0	0
Waterpark	0	0	0	0
Shelters	0	0	0	0
Picnic Tables w/Shade	0	0	0	0
Picnic Tables w/o Shade	0	0	0	0
Benches	0	0	0	0
Drinking fountain	0	0	0	0
Décor fountain	0	0	0	0
Trash bins	1	1	0	0
Grills	0	0	0	0
Fence	3	1	2	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 five parks in Chuuk, there was a little bit of incivilities (mean= 0.7; sd=0.4). Across the parks in Chuuk, there was on average, a little bit of broken glass, graffiti/tagging, evidence of alcohol use, evidence of substance abuse, and vandalism. There was no evidence of sex paraphilia, dog refuse, or dogs left unattended across any of the parks. However, there was some garbage present (Table S.2.5).

Table S.2.5. Average Amount of Each Incivility Across 5 Parks in Chuuk

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

The original form can be viewed at:

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

Section 3. 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 Chuuk there were 15 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 15 churches, 10 (71.4%) churches were near another community resource.

Eleven (84.6%) churches had on-site parking, while 3 (23.1%) churches had on-site parking with overhead lighting, and 9 (69.2%) churches had bicycle parking. Only 2

(15.4%) churches had a sidewalk leading up to the entrance while 1 (7.7%) church had a sidewalk 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 15 churches, 1 (7.7%) had closing time signage, 12 (92.3%) had restrooms, 5 (38.5%) had showers, and none had beverage vending machines.

Table S.3.1. Church Setting (N=15)

Church Setting	Number	Percent
Setting (n=14)		
Within ¼ of a mile from another community feature	10	71.4%
Parking		
Parking on-site available (not including street parking)	11	84.6%
Parking has lights	3	23.1%
Bicycle parking racks or cages available	9	69.2%
Sidewalk (n=13)		
Sidewalks on street lead up to the entrance*	2	15.4%
Sidewalks have lighting	1	7.7%
Amenities (n=13)		
Church has closing time signage	1	7.7%
Restrooms present	12	92.3%
Showers present	5	38.5%
Beverage vending machines present (n=12)	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 15 churches surveyed in Chuuk, 5 (33.3%) had signage indicating the church name, all 15 (100%) had signage stating that an area was open to the public, none had signage indicating that an area was open to church

members only, 2 (13.3%) had signage indicating that use of an area was limited to specific times, 14 (93.3%) had signage stating that use of an area required permission (e.g. from a minister or deacon), 8 (53.3%) had signage stating that supervision was needed (e.g. by an adult or minister), and 1 (6.7%) had signage stating that an area was private or restricted at all times. Among the 15 churches 3 (20%) had a locked fence or other physical barrier around the perimeter.

Table S.3.2. Church Access and Barriers (N=15)

Access and barriers		
Signage indicates church name	5	33.3%
Signage states an area is open to the public	15	100.0%
Signage states an area is open to church members only	0	0.0%
Signage indicates that use of an area was limited to specific times	2	13.3%
Signage states that use of an area required permission	14	93.3%
Signage states that supervision was needed	8	53.3%
Signage states area is private or restricted access at all times	1	6.7%
Locked fence or other physical barrier around the perimeter prevents public access	3	20.0%

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 15 churches surveyed in Chuuk, there were a total of 17 features and amenities, of which 9 were rated as ok/good, 5 were rated as poor, and 3 were not rated. Among rated features and amenities, 64.3% were rated as ok/good.

Volleyball courts were the most frequent features (5), followed by playgrounds (4). Playgrounds may be of particular interests to families with young children. In Chuuk there were 4 playgrounds, of which 2 were rated as ok/good and 2 were rated as poor. Two churches 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 the 15 churches in Chuuk.

Table S.3.3. Sports Features Across all 15 Churches in Chuuk

Feature	Total number of the feature	Condition of the Feature			Number of churches w/ Lighting
		OK/Good	Poor	Not rated	
Field multiuse	2	0	1	1	0
Field football	1	0	0	1	0
Field baseball	1	0	1	0	0
Field soccer	1	0	0	1	0
Court basketball	1	1	0	0	1
Court tennis	0	0	0	0	0
Court volleyball	5	4	1	0	1
Court multiuse	1	1	0	0	1
Track	0	0	0	0	0
Pool	0	0	0	0	0
Playground	4	2	2	0	2
Skateboarding	1	1	0	0	1
Exercise Stations	0	0	0	0	0
Rock Climbing	0	0	0	0	0

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 15 churches in Chuuk, there were a total of 65 features and amenities, of which 29 were rated as ok/good, 25 were rated as poor, and 11 were not rated. Among rated features and amenities, 53.7% were rated as ok/good. The most common features and amenities present were green space (12), shelters (12), benches (10), grills (10), and trash bins (9). The following table summarizes the total number and condition of each individual feature/amenity that was assessed.

Table S.3.4. Features and Amenities Across all 15 Churches in Chuuk

Feature	Total Number of the feature	Condition of the Feature		
		OK/Good	Poor	Not rated
Green Space	12	7	2	3
Beach for swimming	0	0	0	0
Beach, recreational	0	0	0	0
Beach with lifeguard	0	0	0	0
Waterpark	0	0	0	0
Shelters	12	7	3	2
Picnic Tables w/ Shade	8	5	2	1
Picnic Tables w/o Shade	2	1	0	1
Benches	10	4	4	2
Drinking fountain	0	0	0	0

Decorative fountain	0	0	0	0
Trash bins	9	3	6	0
Grills	10	1	7	2
Fence	1	1	0	0
Trails	1	0	1	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 15 churches in Chuuk, there was a little bit of garbage, broken glass, graffiti/tagging, evidence of alcohol use, evidence of substance abuse, dog refuse, dogs left unattended, and vandalism. Sex paraphilia was not present (Table S.3.5).

Table S.3.5. Average Amount of Each Incivility across 15 Churches in Chuuk

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	None
Dog Refuse	A little
Dogs Unattended	A little
Vandalism	A little

The original form can be viewed at:

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

Section 4. 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 Chuuk, 2 facilities were listed on the inventory and 2 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 two

PA facilities assessed, all had information on setting. Out of those two PA facilities, one (50%) was a communal play space. Among the two PA facilities, all (100%) had only indoor features. Both facilities did not offer childcare or offer teen services. All facilities had information on fees for entrance and all facilities offered a daily fee, and a discount for low-income but not for youth. Table S.4.1 summarizes this information.

Table S.4.1. PA Facility Setting (N=2 unless otherwise noted)

PA facility Setting	Number	Percent
Setting		
Communal Play Space	1	50.0%
For-profit Facility	0	0.0%
Sport feature location		
Indoor	2	100.0%
Outdoor	0	0.0%
Both Indoor and Outdoor	0	0.0%
Services		
Childcare	0	0.0%
Teen activities	0	0.0%
Fees		
Daily Fees	2	100.0%
Fee discount for low-income	2	100.0%
Fee discount for youth	0	0.0%

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 two PA facilities surveyed in Chuuk, all (100%) had on-site parking, none had parking with overhead lighting, and none had bicycle parking. A total of one (50%) had a sidewalk leading up to the entrance. None had sidewalks with overhead lighting.

Observations on PA facility amenities included whether it had restrooms, showers, and beverage vending machines both inside and outside. Among the two PA facilities with indoor features, one (50%) had restrooms inside. None had showers and none had a beverage vending machine present inside. On the outside, there were no outdoor facilities. Table S.4.2 summarizes this information.

Table S.4.2. PA Facility Amenities (N=2 unless otherwise noted)

Access and barriers		
Parking		
Parking on-site available (not including street parking)	2	100.0%
Parking has lights	0	0.0%
Bicycle parking racks or cages available	0	0.0%
Sidewalk		
Sidewalks on street lead up to the entrance	1	50.0%
Sidewalks have lighting	0	0.0%
Amenities		
Restrooms present inside	1	50.0%
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	1	50.0%
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 two PA facilities surveyed in Chuuk, there were a total of 3 indoor sports features, of which 2 were rated as ok/good and 1 was rated as poor.

Basketball courts, volleyball courts, and exercise machine areas were the most common features (1). The following table (Table S.4.3) summarizes the number of each sports feature and the conditions of the feature across all two PA facilities in Chuuk.

Table S.4.3. Indoor Sports Features Across all 2 PA Facilities in Chuuk

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	0	0	0	0
Court volleyball	1	0	1	0
Court racquetball	0	0	0	0
Court multiuse	0	0	0	0
Multipurpose room	0	0	0	0
Exercise machine area	1	1	0	0
Gymnastics facilities	0	0	0	0
Running/ Walking track	0	0	0	0

Pool >3 feet deep	0	0	0	0
Skateboarding	0	0	0	0
Rock Climbing	0	0	0	0

Survey Results for Outdoor Sports Features

Across the two PA facilities surveyed in Chuuk, there were no outdoor sports features.

The following table (Table S.4.4) summarizes the number of each sports feature and the conditions of the feature across all two PA facilities in Chuuk.

Table S.4.4. Outdoor Sports Features Across all 2 PA Facilities in Chuuk

Feature	Total number of the feature	Condition of the Feature			Number of facilities w/ Lighting
		OK/Good	Poor	Not rated	
Field multiuse	0	0	0	0	0
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	0	0	0	0	0
Running/walking track	0	0	0	0	0
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 two PA facilities in Chuuk, there were no amenities present. Table S.4.5 summarizes the total number and condition of each individual feature/amenities which was assessed.

Table S.4.5. Amenities Across all 2 PA Facilities in Chuuk

Feature	Total Number of the feature	Condition of the Feature		
		OK/Good	Poor	Not rated
Drinking fountain indoor	0	0	0	0
Trash container	0	0	0	0
Benches	0	0	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 two PA facilities in Chuuk, the mean rating across all the incivility types was 0.61. There was some garbage and a little bit of graffiti/tagging, evidence of alcohol and substance abuse, and vandalism. There was no evidence of broken glass, sex paraphilia, dog refuse, or dogs left unattended. (Table S.4.6).

Table S.4.6. Average Amount of Each Incivility Across 2 PA Facilities in Chuuk

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

The original form can be viewed at:

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

Section 5. 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 Chuuk. Among the 18 stores assessed, the most common store types in Chuuk were convenience (9) and large grocery stores (5).

Table S.5.1. Type of Store (N=18)

Type	Number	Percent
Supermarket chain	0	0.0%
Large grocery store	5	27.8%
Small market	4	22.2%
Convenience	9	50.0%

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 18 stores with this data in Chuuk, 14 (77.8%) had no fruits, 13 (72.2%) had no vegetables, none had a wide variety of fruit and 1 (5.6%) had a wide variety of vegetables.

Table S.5.2. Variety of Fruits and Vegetables (N=18)

Variety	Number	Percent
Fruits		
None	14	77.8%
Limited	3	16.7%
Moderate variety	1	5.6%
Wide variety	0	0.0%
Vegetables		
None	13	72.2%
Limited	0	0.0%
Moderate variety	4	22.2%
Wide variety	1	5.6%

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 18 stores in Chuuk assessed for quality, 1 (5.6%) had good quality for fruit and none had good quality for vegetables.

Table S.5.3. Quality of Fruit and Vegetables (N=18)

Quality	Number	Percent
Fruit		
None	14	77.8%
Poor	1	5.6%
Mixed Poor	0	0.0%
Mixed Good	2	11.1%
Good	1	5.6%
Vegetable		
None	13	72.2%
Poor	0	0%
Mixed Poor	2	11.1%
Mixed Good	3	16.7%
Good	0	0.0%

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 18 stores in Chuuk had data on the availability of these produce. The most commonly available fruits were apples which were in 3 (16.7%) of stores. Oranges were in 2 (11.1%) of stores while none had bananas. Among the vegetables carrots were in 4 (22.2%) of stores, tomatoes were in none, broccoli were in 2 (11.1%) of stores, and cabbage were in 3 (16.7%) of stores.

Table S.5.4. Availability of Selected Fruits and Vegetables (N=18)

Availability	Number	Percent
Selected fruit		
Apple	3	16.7%
Banana	0	0.0%
Orange	2	11.1%
Selected vegetable		
Carrot	4	22.2%
Tomato	0	0.0%
Broccoli	2	11.1%
Cabbage	3	16.7%
Select Local Foods		
Ong Choi	1	5.6%
Pandanus	0	0.0%
Taro	0	0.0%
Cassava	0	0.0%

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 18 stores assessed in Chuuk, 5 (27.8%) had at least one low/reduced fat dairy or soy beverage, 14 (77.8%) had at least one lean meat protein, 4 (22.2%) had at least one non-meat protein, 9 (50%) had at least one whole-grain item, none had at least one canned/ frozen fruit or vegetable, and 2 (11.1%) had at least one baby food.

Table S.5.5. Availability of Other Healthy Foods in Stores (N=18)

Other Healthy Foods	Number	Percent
Low/reduced fat dairy or soy beverage	5	27.8%
1% milk	2	11.1%
2% milk	4	22.2%
Skim milk	0	0.0%
Mozzarella	0	0.0%
Flavored soy beverage	2	11.1%
Plain soy beverage	0	0.0%
Lean meat protein	14	77.8%
Ground beef or turkey, lean (85% or higher)	2	11.1%
Whole chicken	11	61.1%
Tuna (light) canned in water	4	22.2%
Salmon canned in water (n=17)	0	0.0%
Sardines canned in water, tomato, or mustard	6	33.3%

Other Healthy Foods	Number	Percent
Non-meat protein	4	22.2%
Tofu, plain	3	16.7%
Beans, dried	2	11.1%
Beans, canned with no added fats, sugar or sweetener	1	5.6%
Whole grain	9	50.0%
Whole grain bread	0	0.0%
Brown rice	1	5.6%
High fiber cereal (>= 3 grams fiber, <=12 grams sugar per serving)	3	16.7%
Oatmeal (plain)	5	27.8%
Tortillas, soft corn or whole wheat (no lard)	0	0.0%
Canned/ frozen fruit or vegetables	0	0.0%
Any canned fruit packed in 100% fruit juice	4	22.2%
Any canned vegetable with no added fats, sugar, or sweetener	7	38.9%
Any frozen fruit with no added fats, sugar, or sweetener	1	5.6%
Any frozen vegetable with no added fats, sugar, or sweetener	4	22.2%
Baby food	2	11.1%
Baby food, jarred, single fruit	2	11.1%
Baby food, jarred, single vegetable	2	11.1%
Baby food, jarred, single meat	2	11.1%

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 18 stores with this data, only 2 (11.1%) 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 Chuuk, the two stores with health promotion items around the fruit and vegetable display had items categorized as "NCD Program Division of Public Health" and "NCD Program Healthy Food Section". Stores were also assessed for ads promoting locally grown produce. Of the 18 stores with this data, none promoted locally grown produce.

Table S.5.6. Advertisements Inside the Store (N=18)

Interior Advertisements	Number	Percent
Health promotion around the fruit and vegetable display	2	11.1%
5 A Day signs (n=0)	0	0.0%
Nutrition information (n=0)	0	0.0%
Fruit and Veggies: More matters (n=0)	0	0.0%
Children's Healthy Living (CHL) or CHL partnership (n=0)	0	0.0%
Other *(NCD Program Division of Public Health, NCD Program Healthy Food Section)* (n=2)	2	100.0%
Promotion of locally grown produce	0	0.0%

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 18 stores surveyed all had information on the marketing near the main check-out area. Looking at ads for healthy food products, none had ads. Looking at ads for unhealthy food products, 1 store had ads for 1-2 items, and 17 stores had ads for 3 or more items. More stores had at least one ad for unhealthy food products compared to healthy food products near the main check-out area (18 versus 0).

Looking at the presence of healthy food products near the main check-out area, 7 had 1-2 items. Looking at the presence of unhealthy food products near the main check-out

area, 9 stores had 1-2 items, and 3 stores had 3-5 items. More stores had at least one unhealthy food product compared to healthy food product near the main check-out area (12 versus 7).

Table S.5.7. Store Check-out Area Marketing (N=18)

Marketing next to the main check-out area	Healthy Food Products (n)	Unhealthy Food Products (n)
Presence of ads or promotions		
0	18	0
1-2 items	0	1
3-4 items	0	17
Presence of products		
0	11	6
1-2 items	7	9
3-5 items	0	3

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, none had ads on healthy foods. Among the 18 stores that had data on the presence of exterior ads for unhealthy foods, 6 (33.3%) had ads for unhealthy foods.

Store Exterior Conditions

Stores were assessed for specific exterior conditions for food promotion. Among the 18 stores surveyed, 1 (5.6%) had produce bins on the sidewalk in front of the store. 4 (22.2%) of 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 18 stores surveyed. There were ads on the roof, walls, or anywhere on the store property among 2 (11.1%) of stores surveyed. No stores had images of healthy foods while 1 store (5.6%) 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.5.8. Store Exterior Conditions (N=18)

Exterior Conditions	Number	Percent
Produce bins on the sidewalk in front of the store	1	5.6%
Products displayed on the sidewalk in front for the store or inside the store next to the window	4	22.2%
Vending machines on the sidewalk in front of the store	0	0.0%
Advertising (banners, posters, temporary signs, etc.) on the roof, walls or elsewhere on the property	2	11.1%
Images of healthy food (e.g. tomato, apple) and/or beverages (e.g. milk) painted on doors or windows of the storefront	0	0.0%
Images of unhealthy food (e.g. hamburger, hot dog) and/or beverages (e.g. soda, shake) painted on doors or windows of the storefront	1	5.6%

Painted murals of healthy foods and/or beverages anywhere on the building walls	0	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 18 stores, 16 (88.9%) had bars. Among the 8 stores with information on Lee Law compliance, 8 (100%) complied with Lee Law. None of the stores assessed had information for whether people feel safe during the walk around or outside of the store, none of the stores were rated that people feel safe. And among all 18 stores which were assessed for walkability, only 8 stores (44.4%) met standards for being located in a safe, walkable environment.

Table S.5.9. Perceived Safety of Store (N=18)

Safety	Number	Percent
Store has bars or chains on windows or doors	16	88.9%
Store sells alcohol and no more than 1/3 of window area is covered with ads (Lee Law) (n=8)	8	100.0%
People feel safe during the walk around or outside of the store (n=0)	--	--
Store meets standards for being located in a safe, walkable environment	8	44.4%

Overall Summary of Store Assessments

Among the 18 stores surveyed in Chuuk 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 18 stores with this data in Chuuk, no stores had a wide variety of fruits and only 1 had a wide variety of vegetables. There were 14 stores (77.8%) that sold no fruits and 13 (72.2%) that sold no vegetables.
- For the stores that had fruits and vegetables, 3 stores can improve their quality of fruit and 5 stores can improve their quality for vegetables.
- 14 stores can improve the availability of common, as well as local fruits and vegetables.
- Among the 18 stores assessed for Other Healthy Foods, 13 (72.2%) lacked at least a low/reduced fat dairy or soy beverage, 14 (77.8%) lacked at least one non-meat protein, 9 (50.0%) lacked at least one whole-grain item, 18 (100.0%) lacked at least one canned/ frozen fruit or vegetable, and 16 (88.9%) lacked at least one baby food.

Ads, promotions, and marketing

- Among the 18 stores in Chuuk, 2 (11.1%) had health promotion items around the fruit and vegetables display. However, none of them promoted of locally grown produce.

- Stores in Chuuk are more likely to have ads for unhealthy food products than healthy food products near the main check out area (18 stores versus 0 stores). Stores in Chuuk also had at least one unhealthy food product compared to unhealthy food product near the main check-out area (12 versus 7).

- On the store exterior 6 (33.3%) stores had ads for unhealthy foods, while none had ads for healthy foods.

- Looking at the store exterior conditions, 1 (5.6%) had produce bins on the

sidewalk in front of the store. None of the stores had images of healthy food while only 4 (22.2%) stores had 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

- 16 (88.9%) stores surveyed in Chuuk, had bars or chains on the windows, none of the stores had information as people feeling safe around or outside of the store, and only 8 (44.4%) stores were in a location deemed to be a safe, walkable environment.
- Of the 8 stores surveyed, all 8 (100%) 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 6. 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 Chuuk. 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 Chuuk, 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 10. This is followed by the mean total score (14.6), standard deviation (2.9), minimum (10.0), and maximum (19.0). According to the mean total score, the neighborhoods surveyed in Chuuk needs a lot of work to encourage community walkability.

Table S.6.1. Community Walking Features

Walking Features	n	mean	SD	med	min	max
Total Score	10	14.6	2.9	--	10.0	19.0
Room to walk	10	3.1	1.0	--	2.0	5.0
Ease of crossing street(s)	10	3.0	0.7	--	2.0	4.0

Ease of following safety rules	10	2.1	1.2	--	1.0	4.0
Drivers' behavior	10	3.9	0.3	--	3.0	4.0
Pleasantness of walk	10	2.8	0.6	--	2.0	4.0

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

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 Chuuk during 2015. 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 Chuuk.

By increasing the amount of fruit and vegetables sold at stores and increasing quality of parks could serve to better the health and well-being of young children in the community. More attention to the environment of pregnant women to increase their healthy food intake may help to increase the prevalence of healthy birth size in infants. Attention to availability of basic education would also likely improve opportunities for healthy living.

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