

Chronic Health Conditions By Mental and Physical Health (Self-Reported)

Hawaiian population

Hawai`i Health Survey

**Office of Health Status Monitoring
Hawaii Department of Health
State Registrar and Chief,
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HHS

- **Introduction to HHS**
- **Prevalence of Hawaiian – Alone and Part Hawaiian**
- **Ethnicity distribution for Hawai`i**
- **Prevalence of selected health conditions**
- **Associated mental and physical health scores**

Hawai`i Health Survey (HHS)

**Modeled After
National Health Interview
Survey (NHIS), CDC**

HHS

- **House to house survey beginning 1968**
- **Telephone survey beginning 1996**
- **Provides intercensal estimates of ethnicity**
- **Sample data weighted to reflect Hawaii's:**
 - ✿ **Households – from respondent**
 - ✿ **Adult Population by respondent**
 - ✿ **Population – respondent answers for other household members**

Data Presented

- **Respondent – Age 18 and older**
- **Data weighted and adjusted* to Adult Population of Hawai`i**
 - ✿ numbers are adjusted as the homeless, households without telephones, group quarters, and island of Ni`ihau are not included.

Methods

- **Rolling Two Year Average**
- **HHS 1998-2003**
- **Average weight applied**
- **Data analysis**
 - ✿ **SAS**
 - ✿ **SUDAAN for variance, 95% confidence limits estimates, and regression analysis for single year estimates.**

Hawaiian

Survey question – *Of what ethnic background is your father? ... mother?*

***Four possible responses for each parent
(they can also specify other)***

ETHNICITY/RACE

AIAN

Asian Indian

Black

Chinese

Filipino

**Guamanian/
Chamorro**

Hawaiian

Japanese

Korean

Mexican

Portuguese

Puerto Rican

Samoan/Tongan

Vietnamese

White

Other

ETHNICITY/RACE

Alone – Only one ethnicity/race listed
for parents: **Hawaiian Alone**

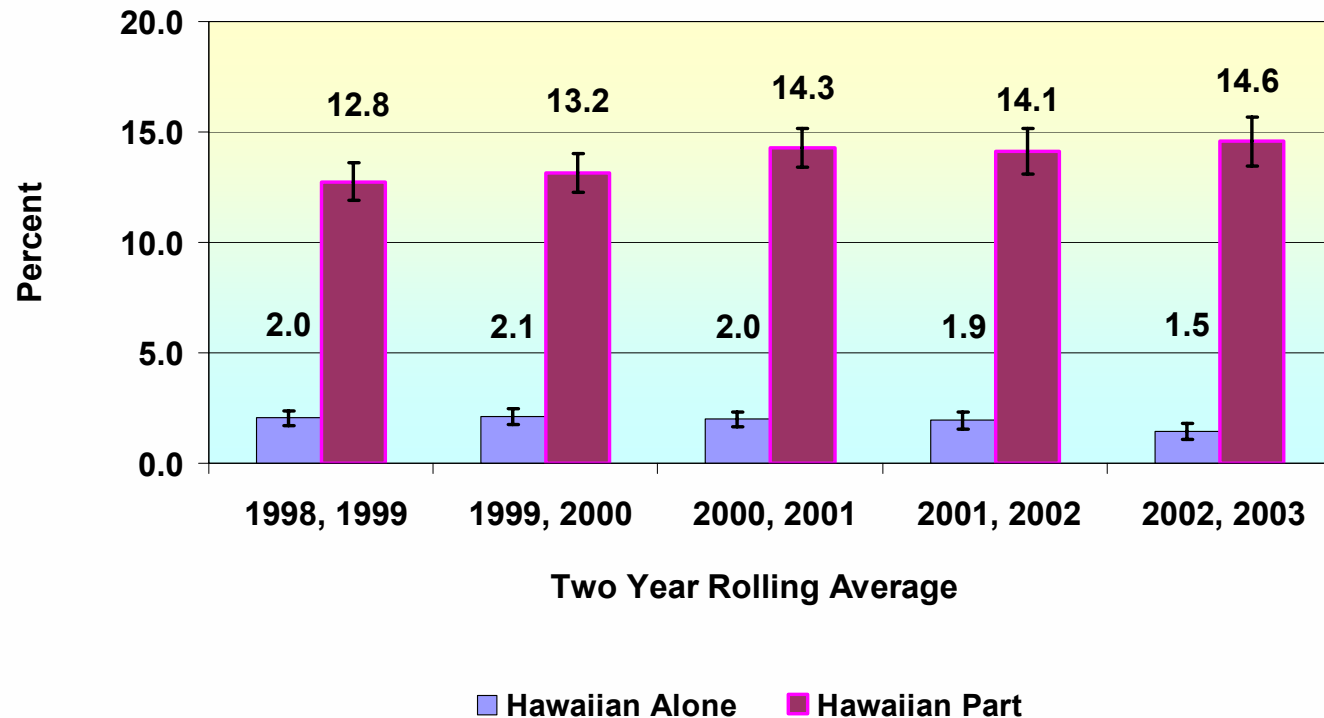
Part – More than one ethnicity/race
listed for parents: **Hawaiian Part**

Sample and Weighted and Adjusted Numbers for Adults in Hawai`i By Two Year Rolling Average, HHS

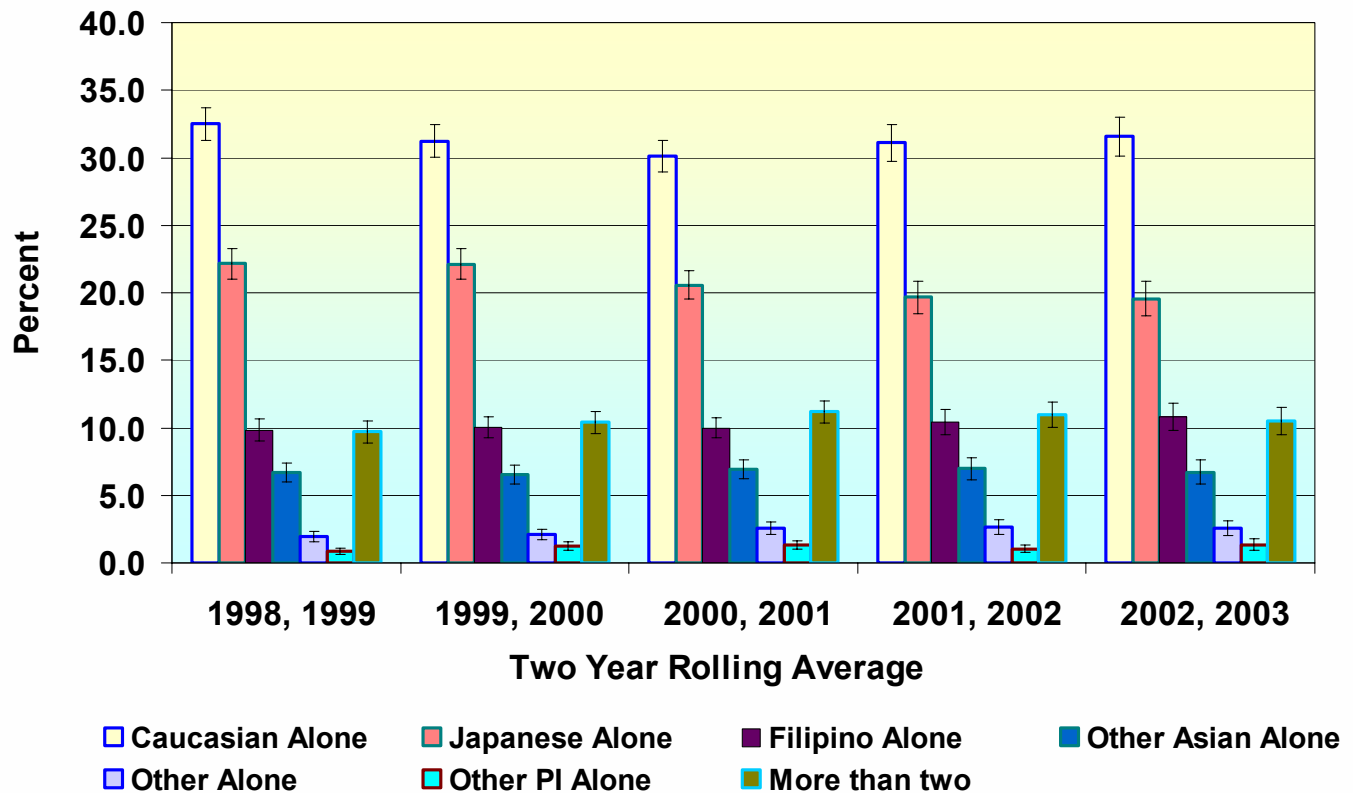
Two Years Averaged	Hawaiian		Total Sample n	Adults*
	Alone	Part		
1998/1999	256	1,256	8,733	851,724
1999/2000	301	1,550	10,233	859,260
2000/2001	295	1,802	11,555	872,072
2001/2002	255	1,670	10,917	896,156
2002/2003	181	1,628	10,335	921,126

***Weighted and Adjusted**

Percent Alone and Part Hawaiian By Two Year Rolling Average for Adults in Hawai'i, HHS



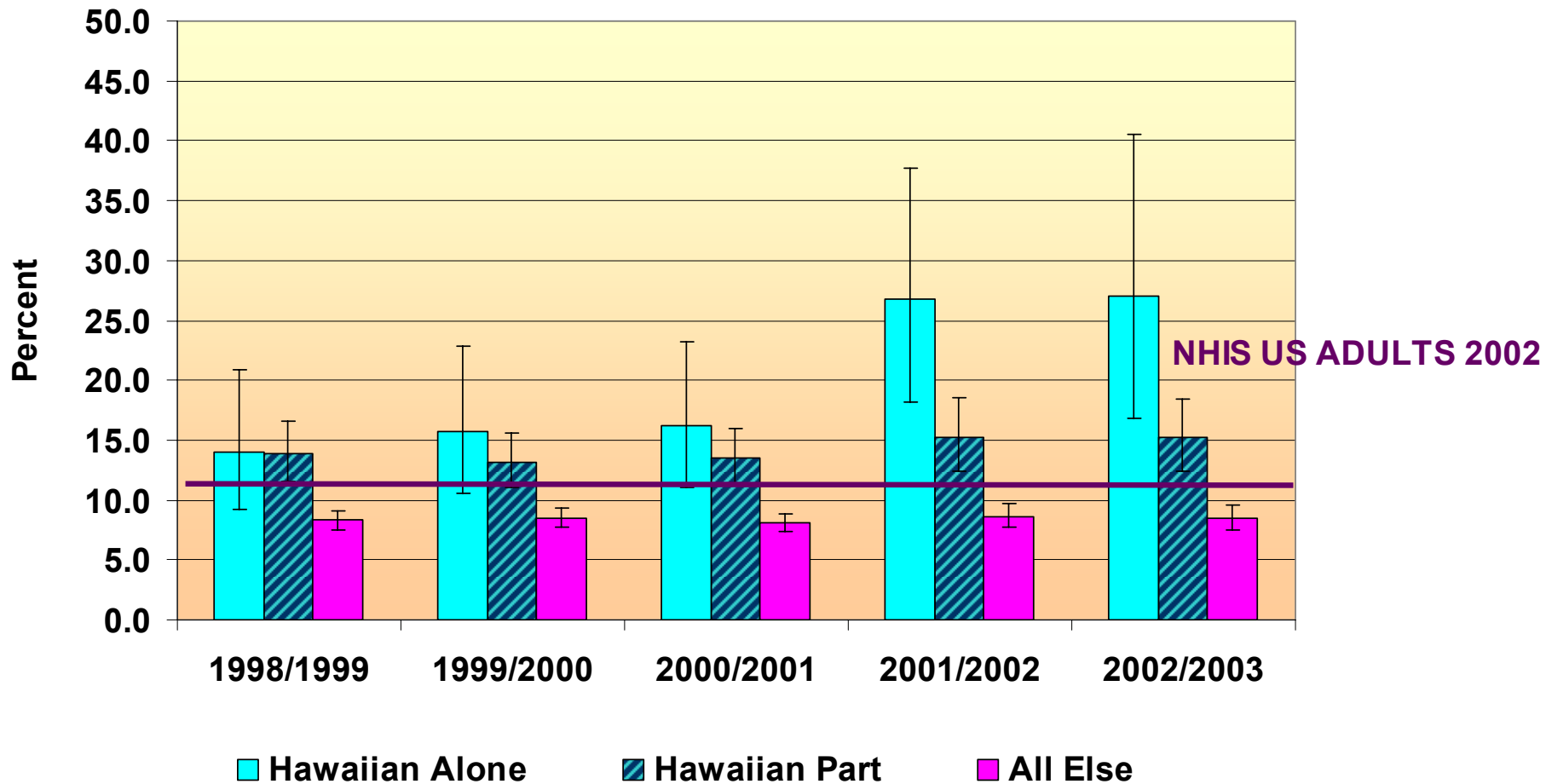
Percent of Other Ethnicities (All Else) By Two Year Rolling Average, HHS



Chronic Health Conditions

- Respondents are asked: "*Have you been told by a physician or medical professional that you have arthritis?*"asthma, diabetes, high blood cholesterol, and hypertension.
- **Obese from Body Mass Index BMI –**
 - ✿ **Weight / height (kg/m²).**
 - ✿ **Values 30 and above**
 - ✿ National Heart, Lung, and Blood Institute (NHLBI) (June 17, 1998)
"clinical definition"

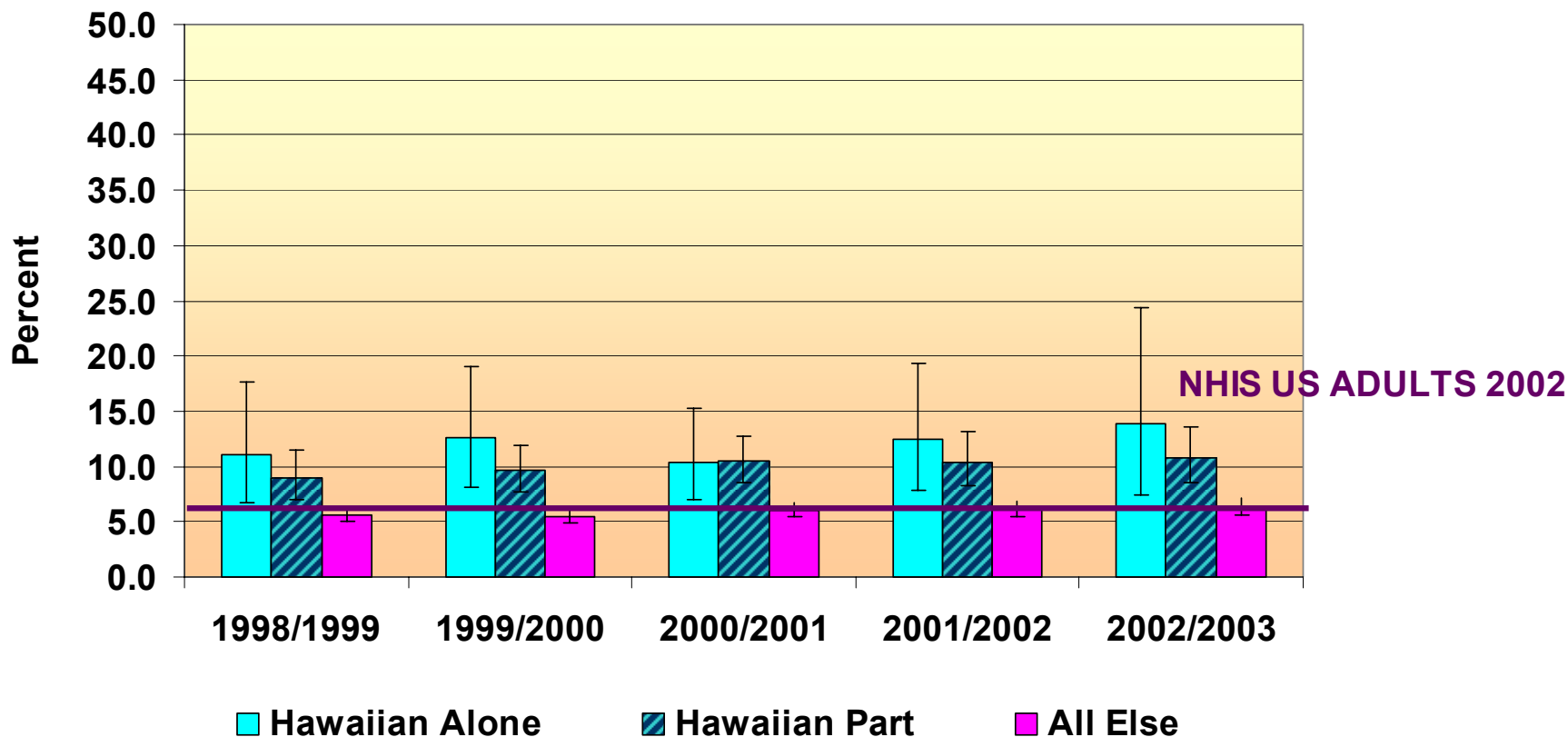
Prevalence of Asthma By Ethnicity, Two Year Rolling Average, Adults-HHS



Weighted and adjusted numbers
Age adjusted

DOH, OHSM, HHS

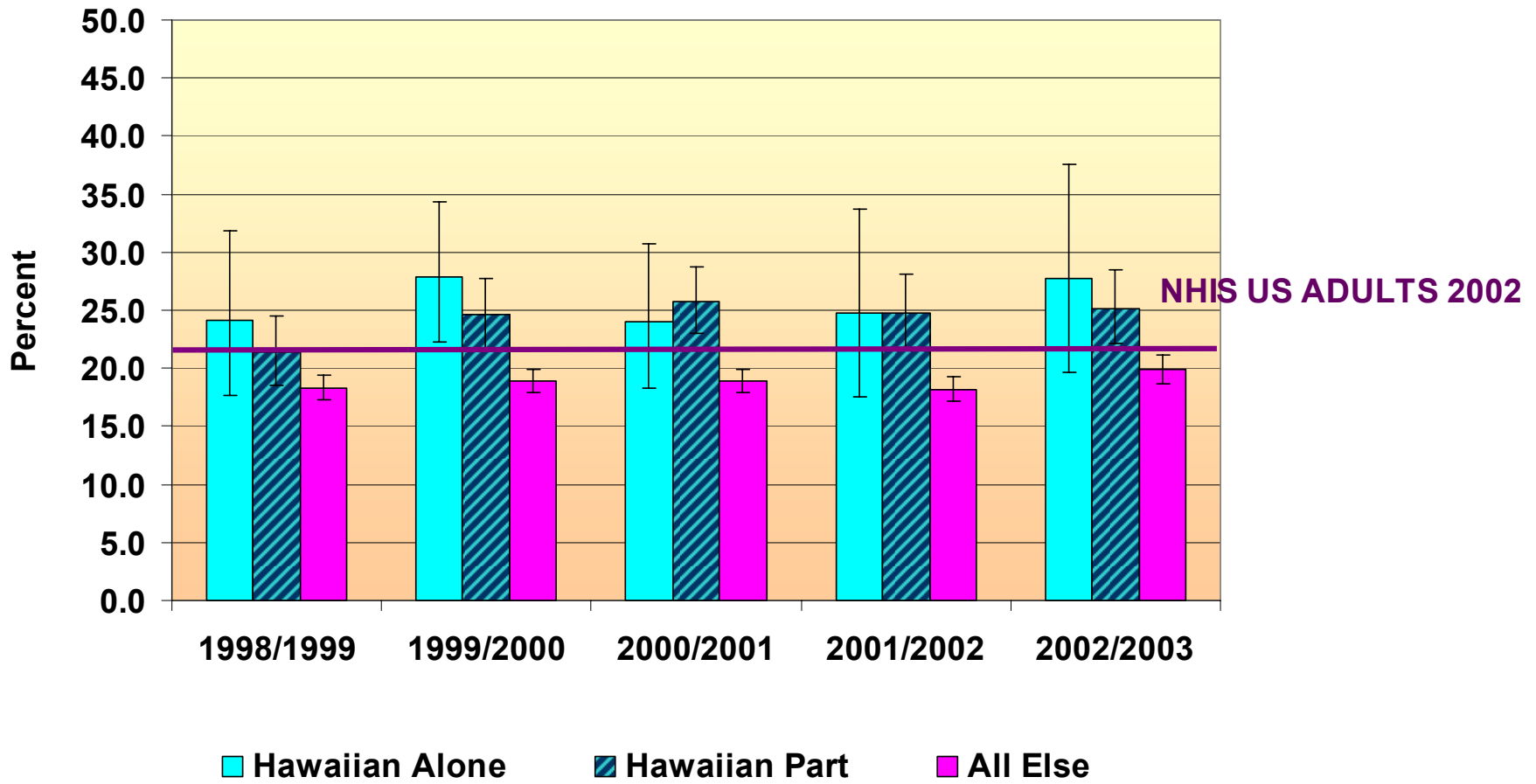
Prevalence of Diabetes By Ethnicity, Two Year Rolling Average, Adults-HHS



Weighted and adjusted numbers
Age adjusted

DOH, OHSM, HHS

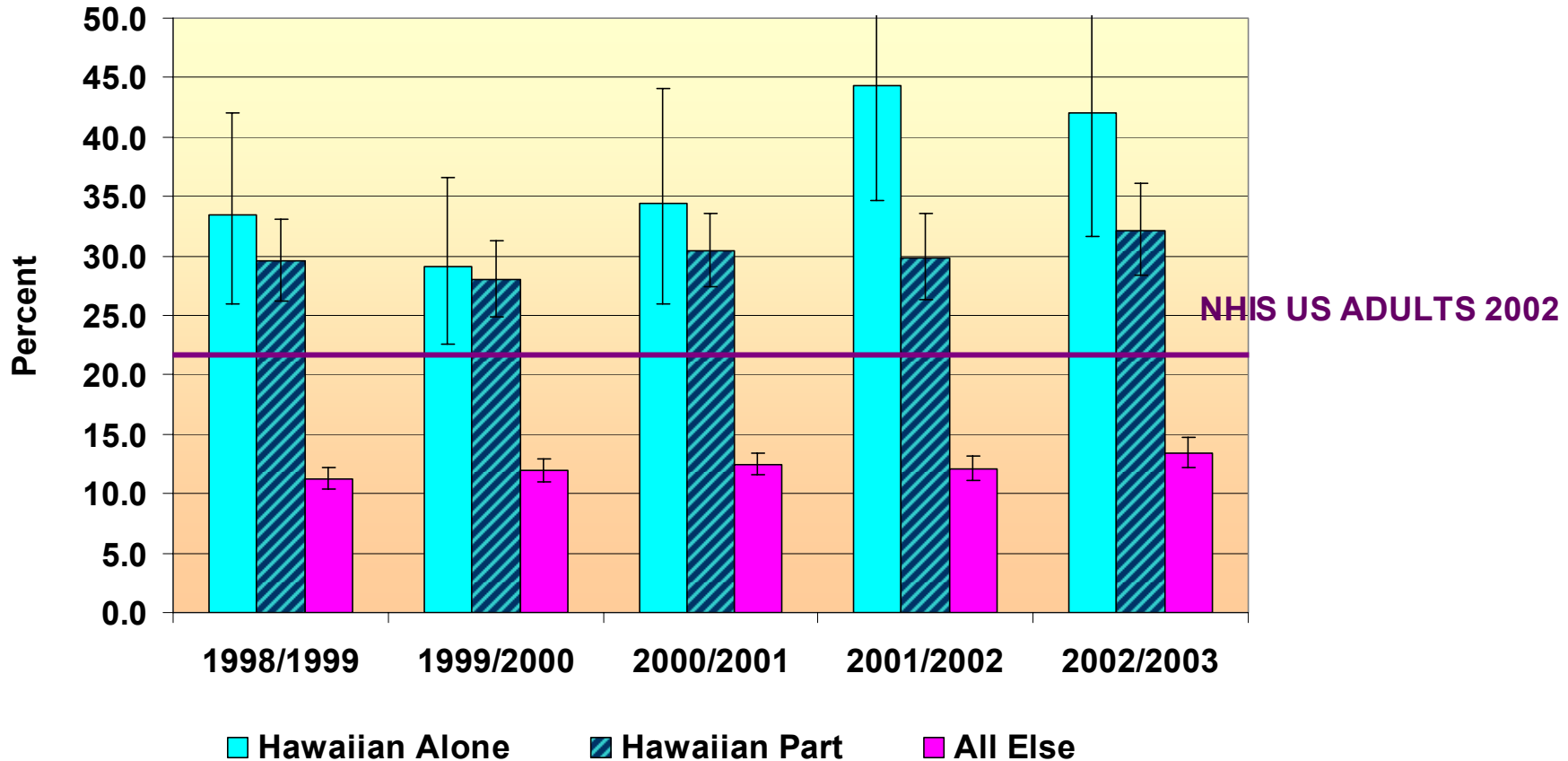
Prevalence of HBP By Ethnicity, Two Year Rolling Average, Adults-HHS



Weighted and adjusted numbers
Age adjusted

DOH, OHSM, HHS

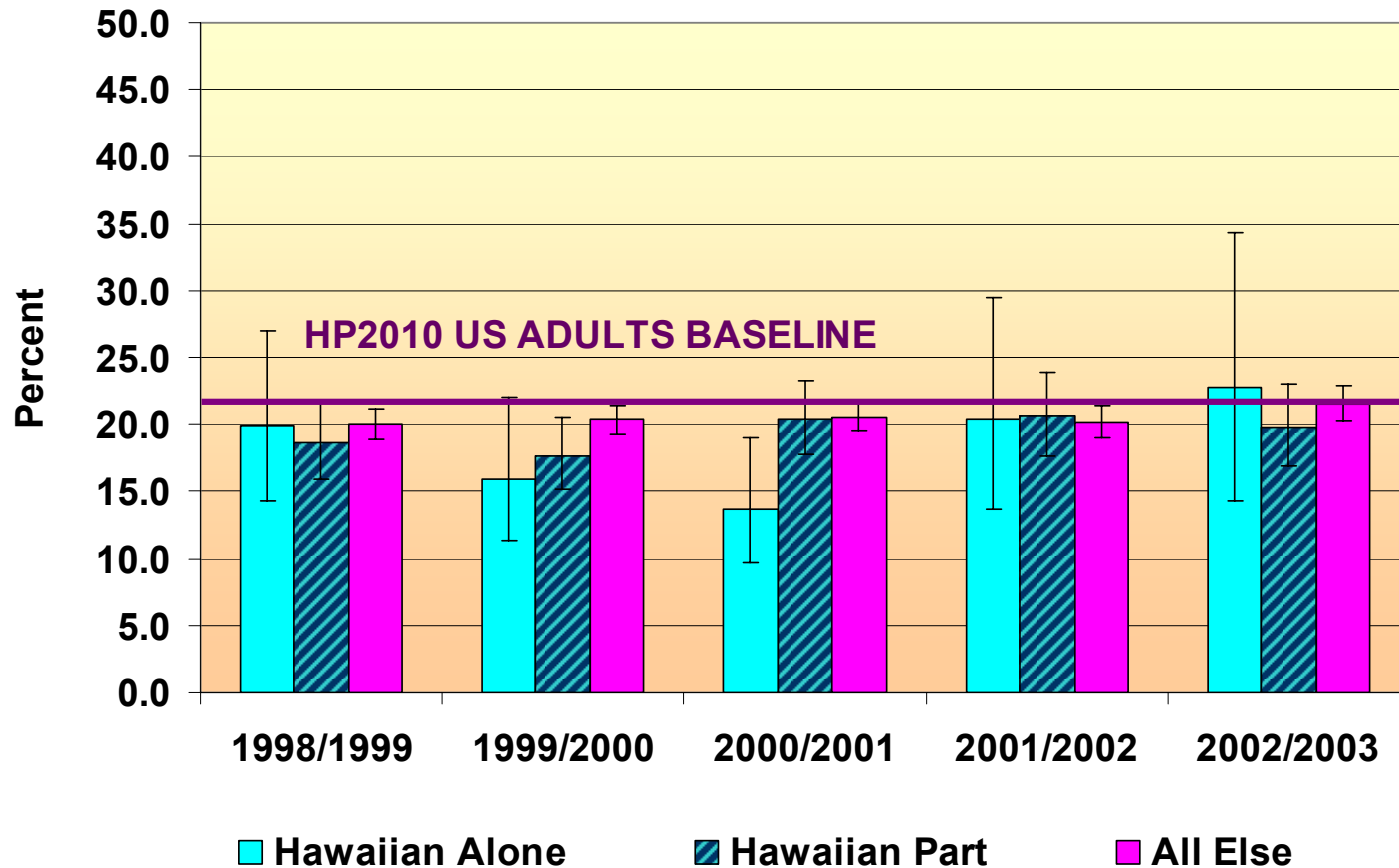
Prevalence of Obesity By Ethnicity, Two Year Rolling Average, Adults-HHS



Weighted and adjusted numbers
Age adjusted

DOH, OHSM, HHS

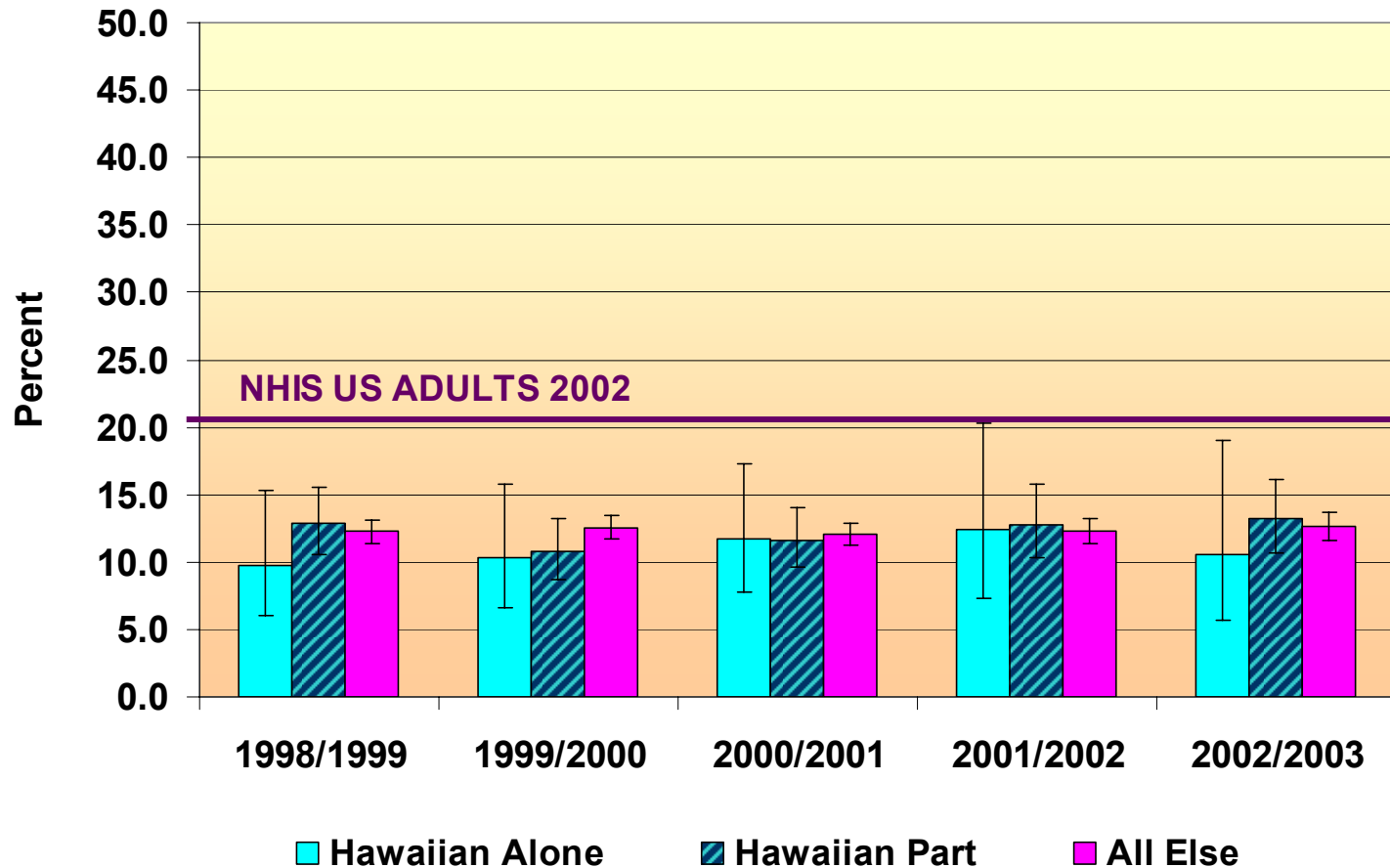
Prevalence of HBC By Ethnicity, Two Year Rolling Average, Adults-HHS



Weighted and adjusted numbers
Age adjusted

DOH, OHSM, HHS

Prevalence of Arthritis By Ethnicity, Two Year Rolling Average, Adults-HHS



Weighted and adjusted numbers
Age adjusted

DOH, OHSM, HHS

Chronic Disease Prevalence Adult Hawaiians Compared to All Else (Single Year Comparison), HHS

Significantly higher for Hawaiians, $\alpha=.05$	Not Significantly higher for Hawaiians
Obesity	HBC
HBP	Arthritis
Asthma	
Diabetes	

Mental and Physical Health Scores

How does the higher prevalence of chronic health conditions among Hawaiians affect self reported mental and physical health?

SF-12® Questions, v. 1

➤ Quality Metric

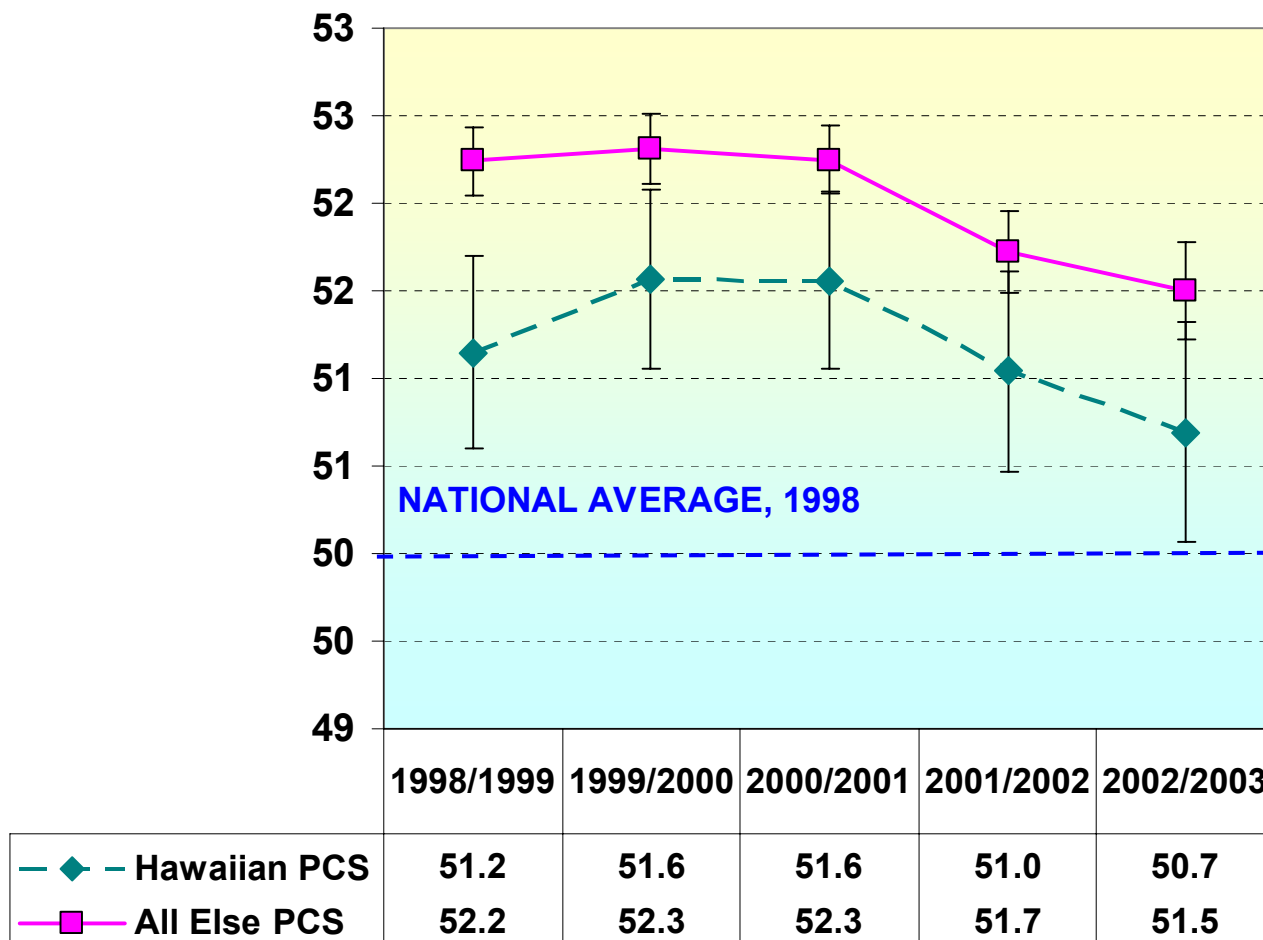
➤ Twelve self reported general health questions on:

- ✿ limitations caused by physical and/or emotional problems,
- ✿ pain limiting activities,
- ✿ limitations to amount and type of work,
- ✿ and limitations in social activities due to health problems

MCS and PCS Summary Scores, v1

- PCS (physical component summary scale)
- MCS (mental component summary scale)
- **A lower PCS or MCS score indicates poorer self reported mental or physical health**
- Standardized normal distribution (mean=50, SD=10 in the 1998 general U.S. population)
- SF-12® manual.
- <http://www.sf-36.org/tools/sf12.shtml>

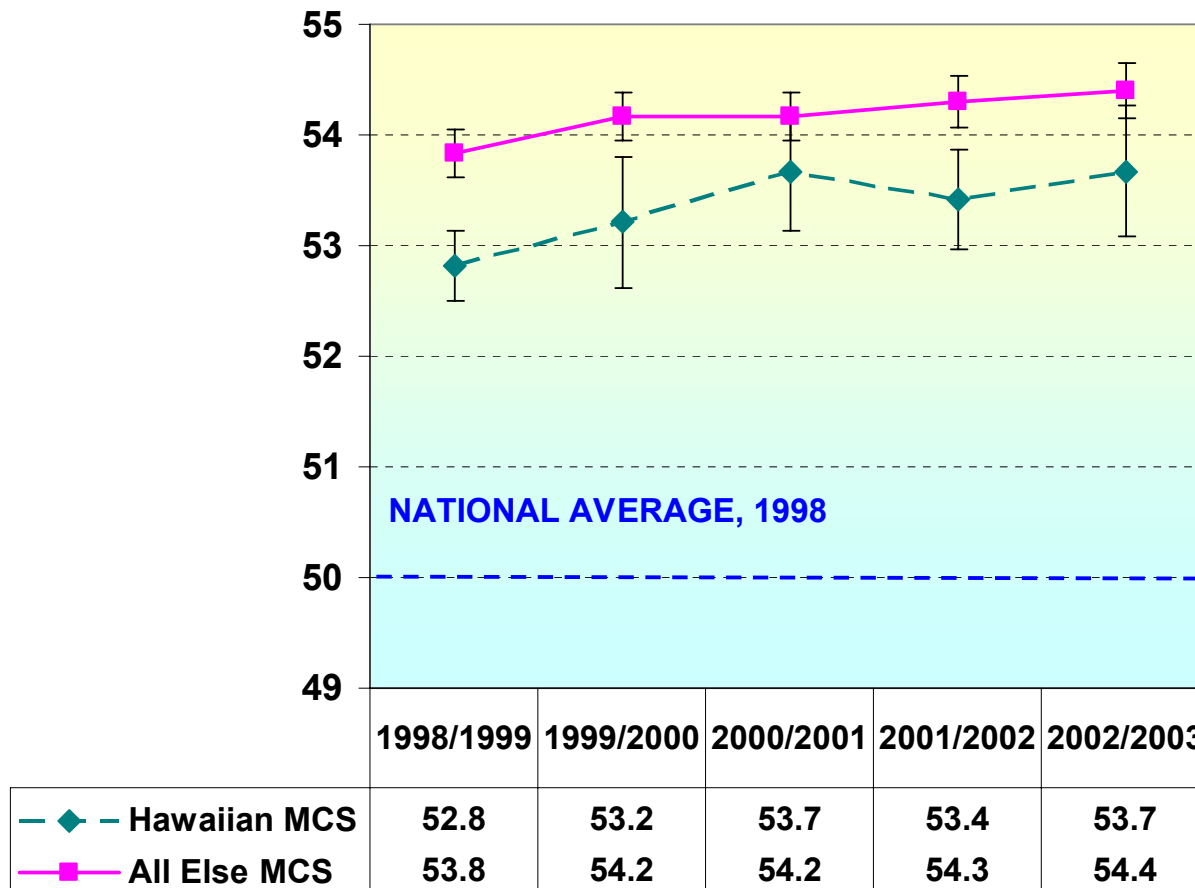
Average PCS Score for Hawaiians (Alone and Part) and All Else, Two Year Rolling Average, Adults-HHS



Weighted and adjusted numbers
Age adjusted

DOH, OHSM, HHS

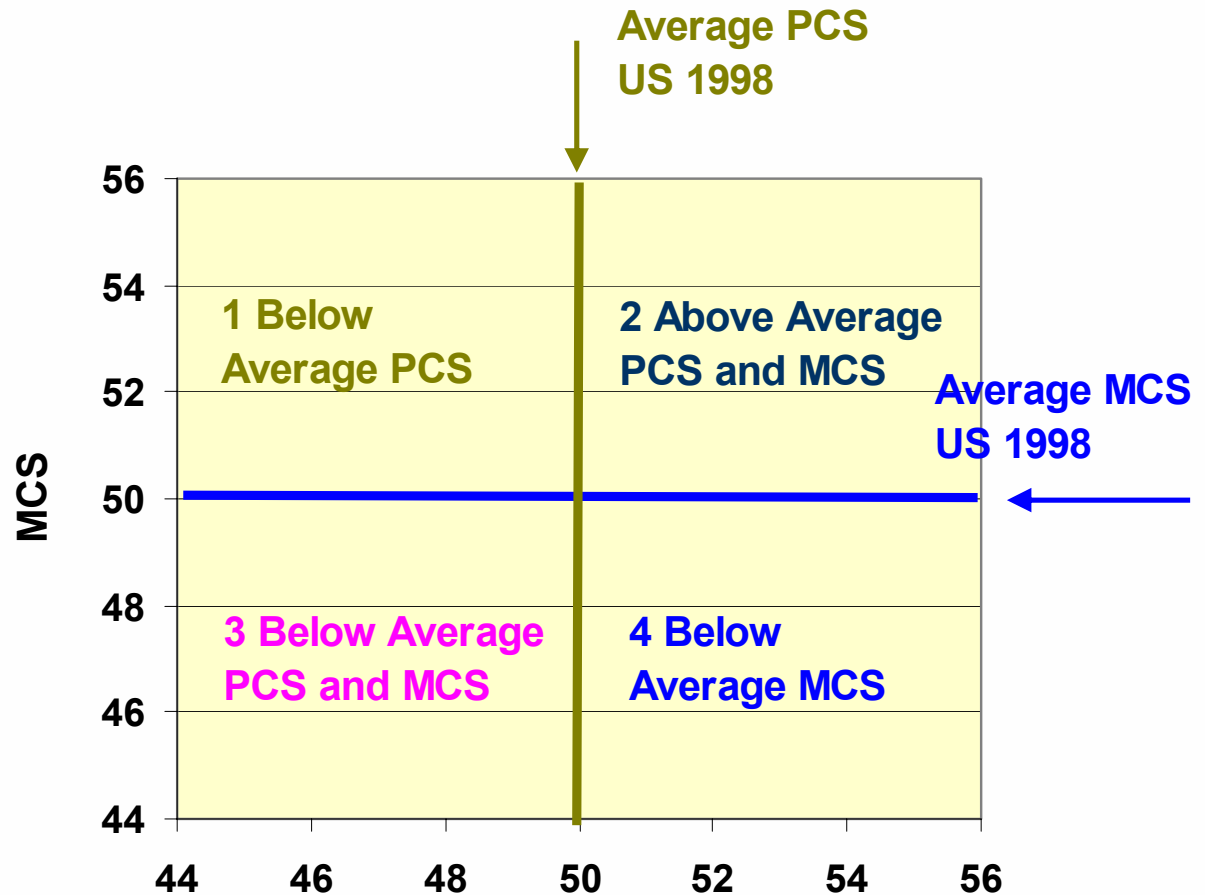
Average MCS Score for Hawaiians (Alone and Part) and All Else, Two Year Rolling Average, Adults-HHS



Weighted and adjusted numbers
Age adjusted

DOH, OHSM, HHS

Average PCS By MCS Score Diagram



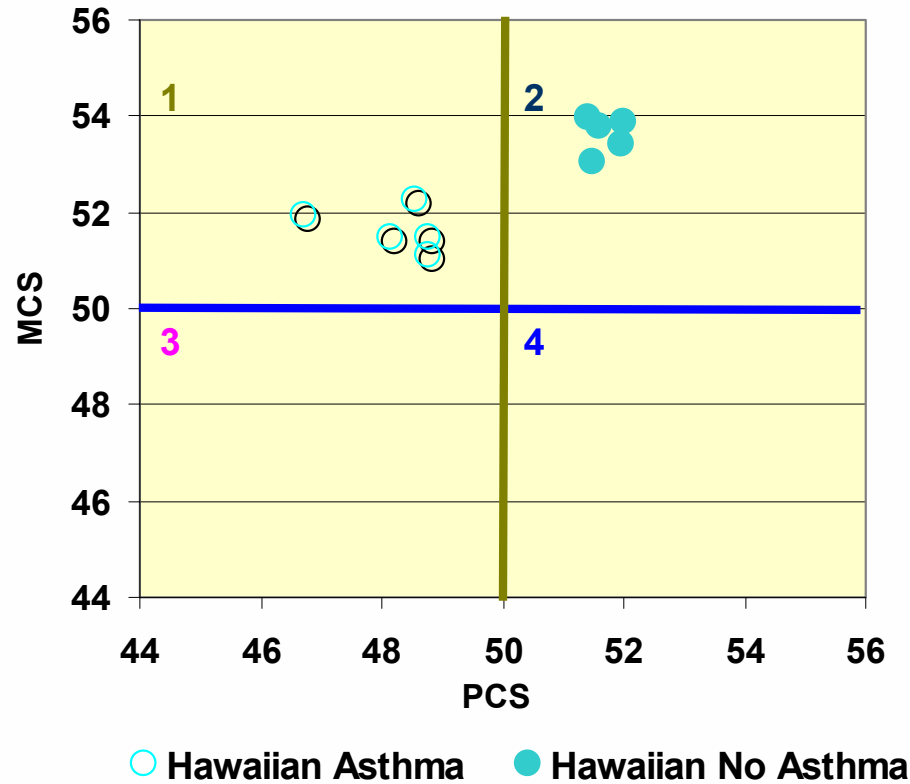
1 Below Average PCS

2 Above Average PCS and MCS

3 Below Average PCS and MCS

4 Below Average MCS

Asthma By Average PCS and MCS for Adult Hawaiians (Alone and Part), Two Year Rolling Average HHS 1998 - 2003



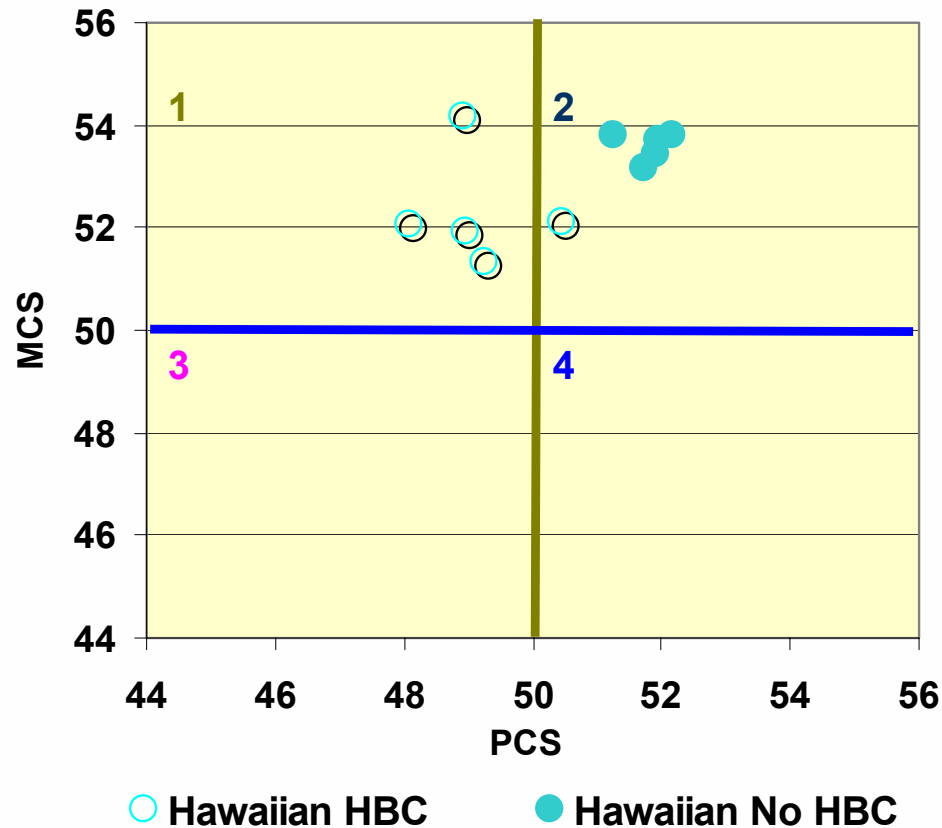
1 Below Average PCS

2 Above Average PCS and MCS

3 Below Average PCS and MCS

4 Below Average MCS

HBC By Average PCS and MCS for Adult Hawaiians (Alone and Part), Two Year Rolling Average HHS 1998 - 2003



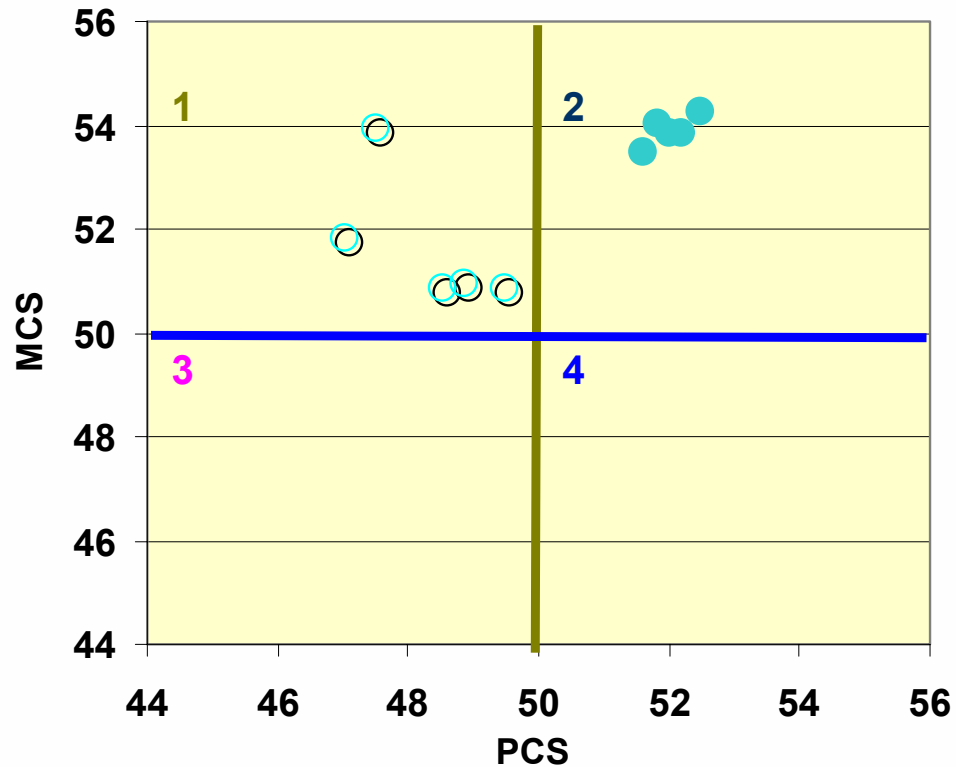
1 Below Average PCS

2 Above Average PCS and MCS

3 Below Average PCS and MCS

4 Below Average MCS

HBP By Average PCS and MCS for Adult Hawaiians (Alone and Part), Two Year Rolling Average HHS 1998 - 2003



○ Hawaiian HBP

● Hawaiian No HBP

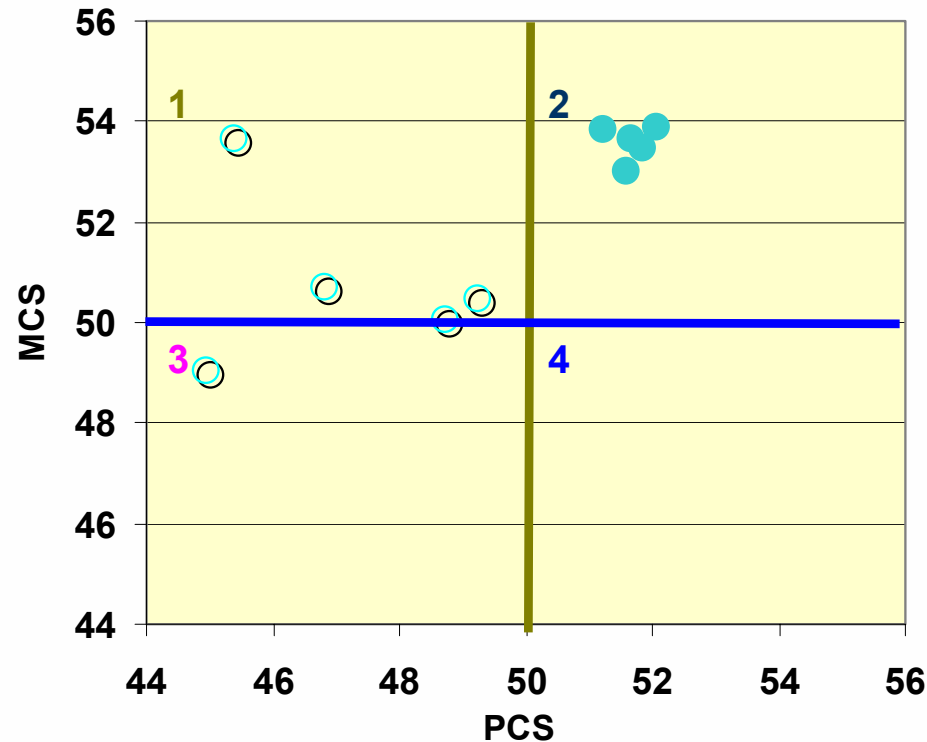
1 Below Average PCS

2 Above Average PCS and MCS

3 Below Average PCS and MCS

4 Below Average MCS

Diabetes By Average PCS and MCS for Adult Hawaiians (Alone and Part), Two Year Rolling Average HHS 1998 - 2003



○ Hawaiian Diabetes ● Hawaiian No Diabetes

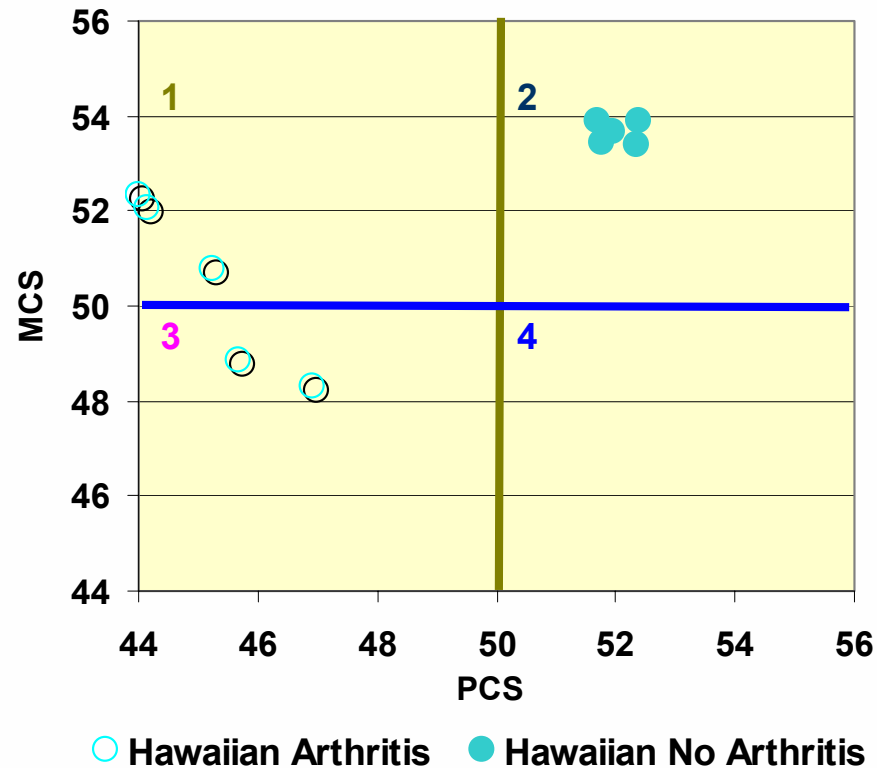
1 Below Average PCS

2 Above Average PCS and MCS

3 Below Average PCS and MCS

4 Below Average MCS

Arthritis By Average PCS and MCS for Adult Hawaiians (Alone and Part), Two Year Rolling Average HHS 1998 - 2003



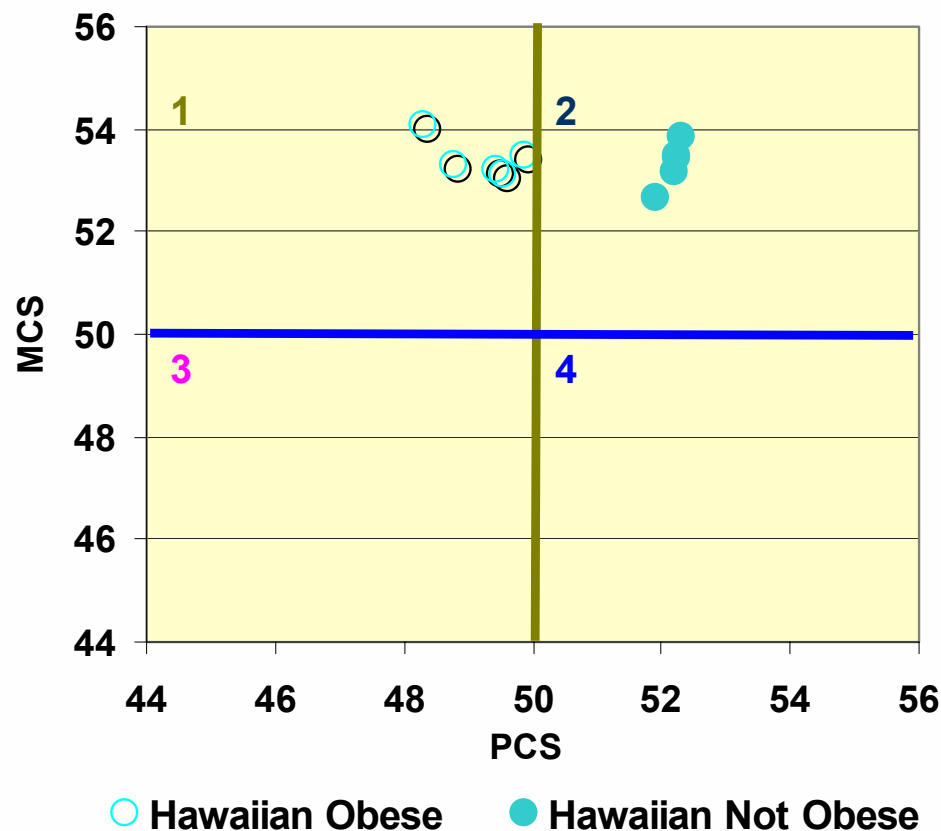
1 Below Average PCS

2 Above Average PCS and MCS

3 Below Average PCS and MCS

4 Below Average MCS

Obese By Average PCS and MCS for Adult Hawaiians (Alone and Part), Two Year Rolling Average HHS 1998 - 2003



1 Below Average PCS

2 Above Average PCS and MCS

3 Below Average PCS and MCS

4 Below Average MCS

Summary – Adult Population

- **Hawaiians and All Else**
 - ✿ **Physical health scores decreased from 1998 to 2003**
 - ✿ **Mental health scores increased from 1998 to 2003**
- **The average MCS and PCS scores for Hawaiians were lower than for All Else for all five two year averages**
- **PCS and MCS scores on average for Hawaiians were lower when associated with a chronic disease**
- **Hawaiians with arthritis had the lowest average PCS and MCS when compared to other chronic conditions**
- **Obesity had the least affect on MCS and PCS for Hawaiians when compared to other chronic conditions**

Summary – Adult Population

Several other variables other than the chronic diseases measured are highly associated with decreased PCS and MCS (in addition to age):

- PCS – poverty and marital status**
- MCS – gender, poverty, and marital status**

PCS for Adult Hawaiian Population, SUDAAN Regression, HHS 1998-2003

Contrast	Degrees		P-value
	of Freedom	Wald F	
Overall Model	19	8694.7	0.0000
Model Minus Intercept	18	17.7	0.0000
Intercept	.	.	.
With at least one chronic condition	1	104.7	0.0000
Year	2	0.1	0.8652
Gender	1	1.6	0.2058
Education	3	1.8	0.1474
Marital Status	4	2.9	0.0221
Poverty level (3 levels)	2	12.1	0.0000
Age Group	5	9.2	0.0000

MCS for Adult Hawaiian Population, SUDAAN Regression, HHS 1998-2003

Contrast	Degrees of Freedom	Wald F	P-value Wald F
Overall Model	19	7656.6	0.0000
Model Minus Intercept	18	8.1	0.0000
Intercept	.	.	.
With at least one chronic condition	1	22.9	0.0000
Year	2	3.0	0.0523
Gender	1	24.9	0.0000
Education	3	1.8	0.1414
Marital Status	4	5.9	0.0001
Poverty level (3 levels)	2	9.5	0.0001
Age Group	5	8.1	0.0000

Limitations

- **Populations not sampled**
- **Small sample with high variability for Alone Hawaiians**
- **Self reported chronic disease, mental and physical health scores**
- **No chronic mental health disease measured**
- **Only average of PCS and MCS presented**
- **Comorbidity and other associated variables**

<http://www.hawaii.gov/health>