

NATIVE HAWAIIANS IN THE UNITED STATES

HISTORY

Native Hawaiians are descended from Polynesian communities that explored the Pacific Islands. Even with the arrival of Westerners in the late 18th century, the Native Hawaiian population in Hawaii remained relatively stable at approximately 800,000 to 1 million (Tsark, Special Communication, 2001). A hundred years later, however, the population dwindled to nearly 40,000 due to deaths from disease and war. In the last century, Native Hawaiians have been increasing in number and reestablishing their cultural heritage (Akau et al., 1998).

The Native Hawaiian Health Care Improvement Act of 1988, which was reauthorized in 1992 and 2000, was established to “raise the health status of Native Hawaiians to the highest possible level and to encourage the maximum participation of Native Hawaiians in order to achieve this objective” (Native Hawaiian Health Care Program). In addition, the United States government in 1993 issued an apology to the Native Hawaiian community for the hardships and suffering endured during the colonization of Hawaii. While this has helped to heal some old scars, Native Hawaiians continue to experience special needs and concerns in terms of health status, and bring many cultural strengths as well (White House Initiative on Asian Americans and Pacific Islanders, 2001).

DEMOGRAPHICS

According to Census 2000, there were 140,652 people in the United States who indicated they were Native Hawaiian (one race alone), but 401,162 people who are Native Hawaiians alone or in combination with other races (US Census Bureau, 2000). Native Hawaiians are the largest Pacific Islander group. The median age is 31.8 compared to the national median of 35.4. Outside of Hawaii, there are large concentrations of Native Hawaiians in California, Washington, Utah, Texas and Nevada.

ENGLISH LANGUAGE PROFICIENCY

The ability to speak English has a tremendous impact on access to health information, public services (i.e. Medicaid, Medicare, SCHIP), effective communication with providers and emergency personnel, and the ability

to understand and utilize medications properly. Thirteen percent of Native Hawaiians speak a language other than English at home and 3% are limited English proficient, higher than for Whites (2%)(APIAHF, 2005).

POVERTY/INCOME

The relationship between income and health has been well established over the years. Poverty and lower income have been correlated with high rates of death and disease while higher income has been correlated with better health status. Large disparities in income have been linked to lower life expectancy in cross-national comparisons as well as higher mortality and obesity rates at the state level.

Median household income is higher for Native Hawaiians compared to the general population (\$44,862 vs. \$41,994); however Native Hawaiian households are larger than the U.S. average (3.2 people vs. 2.6). Native Hawaiians, however, have a higher poverty rate (15%) compared to the total population (12%)(APIAHF, 2005).

EDUCATIONAL ATTAINMENT

According to the Institute of Medicine (IOM), the likelihood of being insured rises with higher levels of educational attainment. Having a college degree is strongly associated with multiple factors that increase the likelihood of being insured—employment in sectors that are more likely to offer coverage, higher income, and a greater likelihood of choosing employment-based coverage if offered. Previous studies of Census data have shown that adults who did not graduate from high school were almost twice as likely to be uninsured as those with a high school diploma (38.5% compared to 19.6%)(APIAHF, 2005).

Fifteen percent of Native Hawaiians have less than a high school diploma, compared to 20% of the U.S. Sixty-two percent have a high school diploma as their highest degree, which is higher than the U.S. average of 50%. However, only 11% have a Bachelor’s as their highest degree, compared to the U.S. average of 16% (APIAHF, 2005).

HEALTH STATUS

It is difficult to characterize the health status of Native Hawaiians. Many studies do not differentiate between the various ethnicities studied. Small sample sizes make it difficult to generalize research findings. In some cases, data are just not available. For example, it is estimated that Native Hawaiians represent a mere 0.1% of subjects participating in cancer prevention trials (Hughes et al., 2000). For these reasons, the data contained here provide only a rough estimate of Native Hawaiian health status.

ACCESS TO CARE

The most recent estimate for uninsurance among Native Hawaiians and other Pacific Islanders is 21.8%. This is a three-year average from the Current Population Survey (CPS) Annual Social and Economic Supplement (ASEC) (Denavas-Walt et al, 2006).

In a study assessing health care utilization among Native Hawaiian women on O'ahu, results indicated that they were less likely to have been seen by a healthcare provider in the last year, less likely to have insurance coverage, and more likely to have emergency room visits (Blaisdell-Brennan & Goebert, 2001).

Findings from a focus group study of Native Hawaiian men found that integrating cultural strengths and preferences into health-seeking approaches can motivate Hawaiian men to navigate the healthcare system and may over time improve their health status (Hughes, 2004).

CHRONIC DISEASES

HEART DISEASE & STROKE

Heart disease is a major cause of death and disability among Native Hawaiians. Native Hawaiians age 36-65 in Hawaii are nearly one-and-a-half times more likely to experience heart disease than other racial groups (Native Hawaiian Data Book, 1998). Native Hawaiians also have a higher rate of death and disability due to stroke and cerebrovascular conditions than other populations (58 per 100,000) (Johnson et al., 1998). Native Hawaiians have higher rates of hypertension than non-Hawaiians.

CANCER

Native Hawaiian males have the highest rates of death from lung, liver, and pancreatic cancer, while Native Hawaiian females have the highest mortality rate from lung, liver, pancreatic, breast, cervical, uterine, stomach, and rectal cancer (Tsark, 1998). While mortality rates for many cancers have decreased among Native Hawaiians, they have increased for liver, kidney, and

uterine cancer among women. Mortality rates for cervical cancer among Native Hawaiian women is 3.8 per 100,000 compared to 2.5 per 100,000 for the general population in Hawaii (Gotay et al., 2000).

Lung Cancer

A review of medical records of a single hospital in Hawaii from 1995 – 2001, of which 229 of 1,394 were self-reported Native Hawaiian ancestry, revealed disparities in treatment and survival patterns for Native Hawaiians with lung cancer (Liu & Kwee, 2004). Native Hawaiians had a significantly lower median age at diagnosis compared to non-Native Hawaiian patients. An increased mortality risk was associated with gender, stage, and Native Hawaiian ancestry after controlling for age, but no differences in treatment as appropriate for stage or delays in treatment were observed. This suggests that factors such as environmental or biological influences may be contributors to unfavorable lung cancer outcomes among Native Hawaiians.

Breast Cancer

Compared to women in other ethnic groups, Native Hawaiian women have the highest breast cancer mortality rates in the state of Hawai'i. Nationally, the five-year relative survival rate for Native Hawaiian women is 9% shorter than for Caucasians and all races. This poor outcome has been attributed, in part, to late-stage detection of cancer in Native Hawaiians, and data suggest that breast cancer screening rates for Native Hawaiian women are relatively low (Tsark, 2001).

Using population-based data from the SEER Hawaii Tumor Registry, ethnic variation in survival among 7722 women diagnosed with invasive breast cancer in Hawaii between 1990 and 2002 were examined among five ethnic groups: Caucasian, Chinese, Japanese, Filipino, and Native Hawaiians (Braun et al., 2005). Results indicated that Native Hawaiian and Filipino women were diagnosed in later stages of disease and at earlier ages. Native Hawaiians also had the lowest rate of survival for breast cancer and from a cause other than breast cancer.

Cancer screening

A study of 117 Native Hawaiian women to determine change over 10 years in breast cancer knowledge, attitudes and practices found minimal changes in knowledge and attitudes. However, remarkable improvements in breast health practices were seen, with 62% of women reporting compliance with American Cancer Society guidelines for mammogram screening in 1999-2000, compared to only 14% in 1989-1990. Findings suggest that breast health practices can be

improved through appropriate outreach; encouragement by health professionals; and policies and programs that increase access and affordability (Tsark, 2001)

A number of studies that focus on the impact of culture on cancer screening and survivorship have contributed to a better understanding of how to deliver more culturally sensitive interventions and services to Native Hawaiians. In one of the first community-based cancer control studies conducted among Native Hawaiians, Gotay and colleagues (2000) found that the use of social networks is central to Native Hawaiian culture, as information diffusion can strengthen cancer screening programs that build on cultural values. In another study involving eight focus groups of cancer survivors conducted in five Hawaiian Islands, participants suggested that enhancing access to care and incorporating cultural values in health education and services can increase the number of Native Hawaiians who survive cancer (Braun et al., 2002).

Colorectal cancer is the second leading cause of cancer death for Native Hawaiian men and ranks fourth for Native Hawaiian women (Braun et al., 2005). A study testing an intervention based on social learning theory to improve colorectal cancer screening among this population showed that a culturally targeted educational session delivered by a non-Hawaiian nurse demonstrated lower screening compliance than a program using a Native Hawaiian physician and colorectal cancer survivor. Interestingly, researchers decided against using a no-treatment control group. Although this was a challenge to the study design, the researchers honored the Native Hawaiian community's preference due to their distrust of research and researchers. This is an important concept to be mindful of when designing future studies for this population.

The 'Ohana Day Project, a year long community-based participatory project was implemented in a small, rural, and predominantly Hawaiian community in an effort to attract underserved Hawaiians to cancer screening (Gellert et al., 2006). The project consisted of a one-day ho'olaule'a (community celebration) for families that featured 30-minute visits with a same-sex Hawaiian physician, culturally relevant cancer education, Hawaiian music, and games for children. A total of 10 abnormal screening results were detected among the 73 participants, all of whom received follow-up screening, treatment, or both within three months. Screening rates for prostate and colorectal cancer as well as clinical breast exams increased significantly among participants. Program evaluations also showed high overall

satisfaction, an indication that culture and community-based strategies appear to be successful at overcoming barriers to increasing cancer screening among underserved minorities.

DIABETES

Native Hawaiians have extremely high rates of diabetes. They have the second highest rate of type 2 diabetes in the US (Mau et al., 2002), while rates are also four times higher in Native Hawaiians than among non-Hispanic white residents of the same age in Hawaii (Grandinetti et al., 1998). Prevalence among this population and other Pacific Islander groups is also generally higher than their Asian counterparts. Culturally appropriate interventions are of critical importance in the control of diabetes, as diabetes management is dependent on diet and lifestyle factors (Hughes, 1998).

INFECTIOUS DISEASES

HIV/AIDS & SEXUALLY TRANSMITTED DISEASES

Native Hawaiians account for disproportionate 4% of AIDS cases among Asian Americans and Pacific Islanders in California (Maldonado, 1999). According to the Hawaii State Department of Health, Hawaiians / Part-Hawaiians accounted for 11% of the total reported AIDS cases as of June 30, 2005, while this population accounted for only 8.6% of the state population. Males accounted for the majority of cases (85%), while men who have sex with men (MSM) are the most at risk group for Hawaiians (Hawaii State Department of Health, 2005).

MATERNAL AND CHILD HEALTH

Approximately 34% of all children born in Hawaii in 1996 were Native Hawaiian (Hawaii State Department of Health). The Hawaii State Department of Health found that Native Hawaiian women were less likely to receive proper prenatal care, with only 76% receiving care in the first trimester compared to 82% of all women in the state (Hawaii State Department of Health, 1996). Of all women who did not receive prenatal care until the third trimester, nearly one-third was Native Hawaiian (Native Hawaiian Handbook, 1998). Native Hawaiians in Hawaii also have a high teen birth rate; over half of all births to mothers under the age of 19 were among Native Hawaiians (Hawaii Department of Health, 1990).

In a study examining the relationship between perinatal substance use and adverse pregnancy outcomes among high risk women in Hawaii, results revealed that Hawaiian/part-Hawaiian women were 1.5 times more likely to drink alcohol and 1.8 times more likely to smoke during pregnancy than non-Hawaiians (Fuddy et al.,

2003). The relative risk for preterm delivery was significantly higher for those who used alcohol, tobacco, and illicit drugs, while low birth weight was significantly higher for those who smoked or used illicit drugs.

MENTAL HEALTH

In a study assessing health care utilization among Native Hawaiian women on O'ahu, results indicated that this group experienced the highest rates of depression as well as sexual, physical, and emotional abuse (Blaisdell-Brennan & Goebert, 2001).

Andrade and colleagues (2006) conducted the first prevalence study to determine rates of mental disorders from a community sample of Hawaiian adolescents and found that Hawaiian female youths had the highest rate for any diagnosis, particularly for anxiety disorders. Diagnostic trends appear to be similar to Native Americans and other high-risk youths in America. Further, the rate of obsessive-compulsive disorder (OCD) among the entire Hawaii sample was 8.4%, with girls reporting a 17.7% rate.

In a study to examine rates of lifetime suicide attempts in a community sample of native Hawaiian adolescents, results showed that Hawaiian adolescents had significantly higher mean levels of depression, anxiety, conduct disorder, and substance abuse symptoms than non-Hawaiians (Yuen et al., 2000). Those in the ninth and twelfth grades reported higher rates, which suggest that transitional periods may be more stressful for Hawaiian adolescents. The effects of Hawaiian cultural affiliation were also assessed, which revealed that greater affiliation was associated with a statistically significant risk. This may be due to increased cultural conflict and acculturative stress of being culturally Hawaiian in a Western environment.

In another study examining the demographic and clinical characteristics of Hawaiian adolescents with OCD, results indicated that Native Hawaiians have a two-fold higher risk, with depressive symptoms being the single best predictor of OCD prevalence (Guerrero et al., 2003). The study also revealed that environmental factors, namely crowding in the household, were positively correlated with OCD. Finally, the study revealed the effect of family income, where the lower the main wage earners' education, the higher the teens' OCD rate.

SUBSTANCE USE

In a cross-sectional study comparing alcohol, tobacco and other drug (ATOD) rates among Asian American

and Pacific Islander (AAPI) adolescents from California and Hawaii, Native Hawaiians reported the highest lifetime and 30-day rates of substance use (Wong et al., 2004). The study illustrates the continual need to identify the underlying social, psychological, and contextual variables that account for ATOD differences among heterogeneous AAPI subgroups.

A large-scale, cross-sequential study examined protective and risk factors in the prediction of alcohol use for Hawaiian and non-Hawaiian adolescents (Makini et al., 2001). Although both groups showed a comparable rate of 25% for "sometimes drinking too much alcohol," Hawaiians reported a statistically significantly higher rate of drinking in the morning to offset a hangover than non-Hawaiians. Results also showed that educational level of the primary income earner in a family served as a protective factor for Hawaiian adolescents, as such students reported less likely to drink too much.

In a study examining drinking, drug use, and sexual behavior among adolescents from three ethnic groups in Hawaii, results indicated that Native Hawaiian males and female students engaged in unsafe behaviors more frequently than their Caucasian counterparts (Ramisetty-Mikler et al., 2004). Such behaviors include becoming sexually active at a younger age, and using alcohol. Researchers suggest that incorporating cultural aspects is critical in designing prevention and intervention programs for this population.

TOBACCO USE

Although the state of Hawaii enjoys the second lowest smoking prevalence in the nation, a high proportion of Native Hawaiians smoke. In a study that looked at ethnic differences in trends and determinants of cigarette smoking in Hawaii, Native Hawaiians reported the highest levels, while the Japanese had the lowest and Caucasians had intermediate levels (Maskarinec et al., 2005).

In a prospective multiethnic cohort study, the relationship between the incidence of lung cancer and smoking history among African-American, Japanese-American, Latino, Native Hawaiian, and white men and women residing in California and Hawaii were examined (Haiman et al., 2006). African Americans and Native Hawaiians reported the highest rate of smoking, at 28.5% and 20.1% respectively. Women from both groups were also the most frequent smokers. Among smokers, Native Hawaiians had twice the risk of lung cancer than Japanese Americans and 46% higher risk than whites after adjusting for the duration and level of

smoking. This result is aligned with another previous population-based case control study conducted in Hawaii.

In a cross-sectional study that examined relationship among ethnicity, sense of coherence, and tobacco use among multiethnic sample of seventh-grade students in Hawaii, results indicated that Hawaiian / Pacific Islander students had the highest smoking rates of all youths (Maskarinec & Carlin, 2005). 'Ever smoked' rates were 28.2% and 35.4% for Hawaiians / Pacific Islanders boys and girls, respectively. Sense of coherence, or being able to make sense of past and present experiences, was found to be a strong predictor of smoking behavior.

NUTRITION, WEIGHT AND PHYSICAL ACTIVITY

A study comparing prevalence of physical activity (moderate and vigorous levels) by ethnicity among adults in Hawaii showed that Native Hawaiians/part Native Hawaiians were more physically active compared to Japanese and Filipinos, though less active than whites (Mampilly et al., 2005).

Programs that provide culturally competent nutrition education have proven to be successful in improving and maintaining health. Traditional Hawaiian Diet programs (THD) provide intensive instruction on traditional diet, cooking methods, and serving sizes to local Hawaiian communities. The program has been highly successful in lowering and controlling blood sugar levels among diabetic patients (Hughes, 1998).

In an effort to examine how Native Hawaiians define what it means to be a "healthy Hawaiian," McMullin (2005) conducted a series of participant observation and informal and semi-structured interviews with Native Hawaiians. The concept of "Healthy Ancestor," an image of a Hawaiian who lived in a time of easy access to the land and ocean and was able to obtain healthy food, was brought up by a majority of respondents. Many also distinguished between being a healthy person and a healthy Hawaiian, which includes maintaining a balanced life, knowledge about their culture, and the ability to eat and prepare Hawaiian foods that come from the islands. This study serves as an important reminder to put health in a historical and social relations context when examining concepts of health among this population.

TRADITIONAL MEDICINE

Traditional methods of Native Hawaiian healing were nearly lost in the early 1900s, but have gained renewed interest in recent years. Native Hawaiian healers rely on

a variety of indigenous plants and herbs to treat illness (Judd et al., 1998). In addition, spirituality, environment, and personal relationships are central to Native Hawaiian healing practices (Nani`ole et al., 1998).

Cultural issues significantly impact community health. Unfortunately, few programs are designed to build upon cultural assets and community strengths. Many Native Hawaiians place tremendous importance on spirituality, generosity, harmony, and humility (Kanahele et al., 1998). Valuing native culture and traditions and using them to complement Western health practices will help reduce barriers to health care and improve the health of the community. Viewing these beliefs as cultural strengths and incorporating spirituality into a Western healing regimen could be extremely beneficial (Mokuau et al., 1998).

RESOURCES

The following agencies are able to provide additional information regarding the Native Hawaiian community:

- Papa Ola Lokahi
808-536-9453
<http://www.papaolalokahi.org/>
- Health Resources and Services Administration, Native Hawaiian Health Care Program
301-594-4450
www.bphc.hrsa.gov
- Office of Hawaiian Affairs
<http://www.oha.org>
- Hawaii State DOH-Office of Health Equity
808-586-4673
- Native Hawaiian Cancer Awareness, Research, and Training Network
<http://www.imihale.org/>

REFERENCES

- Akau, M., et al. (1998). 'Ke Ala Ola Pono: the Native Hawaiian community's effort to heal itself,' *Pacific Health Dialog* 5, 232-238.
- Andrade, N.N., Hishinuma, E.S., Mcdermott, J.F., Johnson, R.C., Goebert, D.A., Makini, G.K., Nahulu, L.B., Yuen N.Y., McArdle, J.J., Bell, C.K., Carlton, B.S., Miyamoto, R.H., Nishimura, S.T., Else, I.R.N., Guerrero, A.P., Darmal, A., Yates, A., Waldron, J.A. (2006). The National Center on Indigenous Hawaiian Behavioral Health Study of Prevalence of Psychiatric Disorders in Native Hawaiian

- Adolescents. *J Am Acad Child Adolesc Psychiatry*, 45, 26-36.
- Asian Americans and Pacific Islanders: A People Looking Forward (2001)*. Rockville, MD: White House Initiative on Asian Americans and Pacific Islanders. Available at www.aapi.gov.
- Blaisdell-Brennan, H.K. & Goebert, D. (2001). Health care utilization among women on O'ahu: implications for Native Hawaiian women. *Pac Health Dialog*, 8, 274-9.
- Braun, K.L., Fong, M., Kaanoi, M.E., Kamaka, M.L., Gotay, C.C. (2005). Testing a culturally appropriate, theory-based intervention to improve colorectal cancer screening among native Hawaiians. *Preventive Medicine*, 40, 619-627.
- Braun, K.L., Fong, M., Gotay, C., Pagano, I.S., Chong, C. (2005). Ethnicity and breast cancer in Hawaii: increased survival but continued disparity. *Ethn Dis*, 15, 453-460.
- Braun, K.L., Mokuau, N., Hunt, G.H., Kanno, M., Gotay, C.C. (2002). Supports and obstacles to cancer survival for Hawaii's Native People. *Cancer Practice*, 10, 192-200.
- Denavas-Walt, C., Proctor, B.D., & Lee, C.H. (2006). Income, poverty, and health insurance coverage in the United States: 2005. U.S. Census Bureau, Current Population Reports, 60-231. U.S. Government Printing Office, Washington, DC. <http://www.census.gov/prod/2006pubs/p60-231.pdf>.
- Fuddy L.J., Prince, C.B., Tang, M.C. (2003). Perinatal substance use among high risk women in Hawaii: patterns and impact on pregnancy outcomes. *Asian Am Pac Isl J Health*, 10, 50-7.
- Gellert, K., Braun, K.L., Morris, R., Starkey, V. (2006). The 'Ohana Day Project: a community approach to increasing cancer screening. *Prev Chronic Dis*, 3, A99.
- Goebert, D., Birnie, K.K. (1998). Injury and disability among Native Hawaiians. *Pacific Health Dial*, 5, 253-259.
- Goodman, M.J. (1991). Breast cancer in multi-ethnic populations: the Hawai'i perspective. *Breast Cancer Research and Treatment*, 18, S5-9.
- Gotay, C.C., Banner, R.O., Matsunaga, D.S., Hedlund, N., Enos, R., Issell, B.F., DeCambra, H. (2000). Impact of a culturally appropriate intervention on breast and cervical screening among Native American Hawaiian women. *Preventive Medicine*, 31, 529-537.
- Grandinetti, A., Mau, M., Curb, J., Kinney, E., Sagum, R., & Arakaki, R. (1998). Prevalence of glucose intolerance among Native Hawaiians in two rural communities. *Diabetes Care* 21, 549-554.
- Guerrero, A., Hishinuma, E., Andrade, N., Bell, C., Kurahara, D., Lee, T., Turner, H., Andrus, J., Yuen, N., Stokes, A. (2003). Demographic and clinical characteristics of adolescents in Hawaii with Obsessive-Compulsive Disorder. *Arch Pediatr Adolesc Med*, 157, 665-670.
- Haiman, C.A., Stram, D.O., Wilkens, L.R., Pike, M.C., Kolonel, L.N., Henderson, B.E., Le Marchand, L. (2006). Ethnic and racial differences in the smoking-related risk of lung cancer. *N Engl J Med*, 354, 333-42.
- Hawai'i State Department of Health (1990). Health Surveillance Program. Hawai'i State Department of Health (1996). *Annual Report: Statistics Supplement*.
- Hawai'i State Department of Health, STD / AIDS Prevention Branch (2005). Hawaiian / Part-Hawaiian AIDS Cases in Hawaii (Cases through June, 2005). Available at: <http://www.hawaii.gov/health/healthy-lifestyles/std-aids/data-statistics/index.html#hiv>
- Hughes, C.K. (2004). Factors associated with health-seeking behaviors of Native Hawaiian men. *Pac Health Dialog*, 11, 176-82.
- Hughes, C.K. (1998). Traditional Hawaiian diet programs: a culturally competent chronic disease intervention. *Pacific Health Dialog* 5, 328-331.
- Hughes, C.K., Tsark, J.U., Kenui, C.K., Alexander, G.A. (2000). Cancer research studies in Native Hawaiians and Pacific Islanders. *Ann Epidemiol*, 10, S49-60.
- Hughes, C.K., Tsark, J.A., Mokuau, N.K. (1996). Diet-related cancer in Native Hawaiians. *Cancer Supplement*, 78, 1558-1563.
- Institute of Medicine, 2001. Coverage Matters: Insurance and Health Care, Washington, D.C. National Academy Press, p. 65.
- Johnson, D. B., Oyama, N., Loic L.M. (1998). 'Papa Ola Lokahi Hawaiian health update: Mortality, morbidity, and behavioral risks. *Pacific Health Dialog* 5, 297-313.
- Judd, N. (1998). Laau Lapauu: herbal healing among contemporary Hawaiian healers. *Pacific Health Dialog*, 5, 239-245.
- Kanahale, G.H.S. (1986). *Ku Kanaka - Stand tall*. University of Hawai'i Press and Waiaha Foundation, Honolulu.
- Liu, D.M. & Kwee, S.A. (2004). Demographic, treatment, and survival patterns for Native Hawaiians with lung cancer treated at a community medical center from 1995 to 2001. *Pac Health Dialog*, 11, 139-145.
- Maldonado, M. (1999). HIV/AIDS and Asians and Pacific Islanders. National Minority AIDS Council.
- Makini, G.K., Hishinuma, E.S., Kim, S.P., Carlton, B.S., Miyamoto, R.H., Nahulu, L.B., Johnson, R.C., Andrade, N.N., Nishimura, S.T., Else, I.R.N. (2001). Risk and protector factors related to Native Hawaiian adolescent alcohol use. *Alcohol & Alcoholism*, 36, 235-242.
- Mampilly, C.M., Yore, M.M., Maddock, J.E., Nigg, C.R., Buchner, D., Heath, G.W. (2005). Prevalence of physical activity levels by ethnicity among adults in Hawaii, BRFSS 2001. *Hawaii Med J*, 10, 270, 272-3.
- Maskarinec, G. & Carlin, L. (2005). Ethnicity, sense of coherence, and tobacco use among adolescents. *Ann Behav Med*, 29, 192-199.
- Maskarinec, G., Dhakal, S., Pagano, I., Carlin, L., Goodman, M.T., Le Marchand, L., Nomura, A., Wilkens, L.R., Kolonel, L.N. (2005). Ethnic differences in trends and determinants of cigarette smoking in Hawaii. *Ethn Dis*, 15, 316-23.
- Mau, M.K., Glanz, K., Severino, R., Grove, J.S., Johnson, B., Curb, J.D. (2001). Mediators of lifestyle behavior change in Native Hawaiians. *Diabetes Care*, 24, 1770-1775.
- Mokuau, N., Browne, C., Braun, K. (1998). Na Kupuna in Hawai'i: a review of social and health status, service use and the importance of value based interventions. *Pacific Health Dialog* 5, 282-289.

- McMullin, J. (2005). The call to life: revitalizing a healthy Hawaiian identity. *Social Science & Medicine*, 61, 809-820.
- Nani'ole, J. & Meyer, M.A. (1998). Ka Maka o ka Ihe Laumeki: the point of the barbed spear: Native Hawaiian epistemology and health. *Pacific Health Dialog*, 5, 357-369.
- Native Hawaiian Data Book, (1998). Office of Hawaiian Affairs.
- Native Hawaiian Health Care Program. Available at <http://www.bphc.hrsa.gov/Hawaiian/HHCP.htm>
- Ramisetty-Mikler, S., Caetano, R., Goebert, D., Nishimura, S. (2004). Ethnic variation in drinking, drug use, and sexual behavior among adolescents in Hawaii. *Journal of School Health*, 74, 16-22.
- Tsark, J. Special Communication, June 2001.
- [Tsark JU](#), [Braun KL](#). Ten-year changes in breast cancer knowledge, attitudes, and practices in Native Hawaiian women. *Pac Health Dialog*. 2001 Sep;8(2):280-9.
- Tsark, J.U. (1998). Cancer in Native Hawaiians. *Pacific Health Dialog* 5, 315-327.
- US Census Bureau, Census 2000 (2005). . We the People: Pacific Islanders in the United States. Census 2000 Special Reports. Available at <http://www.census.gov/population/www/cen2000/briefs.html#sr>
- Wong, M.M., Klingler, R.S., Price, R.K. (2004). Alcohol, tobacco, and other drug use among Asian American and Pacific Islander Adolescents in California and Hawaii. *Addictive Behaviors*, 29, 127-141.
- Yuen, N.Y., Nahulu, L.B., Hishinuma, E.S., Miyamoto, R.H., (2000). Cultural identification and attempted suicide in Native Hawaiian adolescents. *Journal of the American Academy of Child and Adolescent Psychiatry*, 39, 360-7.

ABOUT THIS SERIES

This health brief is part of a series of that includes Cambodian, Chamorro, Chinese, Filipino, Hmong, Japanese, Korean, Native Hawaiian, Samoan, South Asian, and Vietnamese. All are available for download at www.apiahf.org.

Purpose

The purpose of the series is to summarize published research findings of disparities in the health and healthcare of the selected group. The data presented is meant for community health advocates, grant writers, evaluators and students as a tool to raise awareness, guide program development and spark future research for the well-being of Asian American and Pacific Islander populations.

Methods

This brief was updated after a PubMed literature review. In order to find the latest information, the Pubmed literature search focused on the years 2000-present and each ethnic group was cross referenced with these focus areas: access to quality health services, arthritis, osteoporosis, and chronic back conditions, cancer, chronic kidney disease, diabetes, disability and secondary conditions, education & community-based programs, environmental health, family planning, food safety, health communication, heart disease and stroke, HIV, immunization, infectious disease, injury & violence prevention, maternal, infant & child health, medical product safety, mental health & mental disorder, nutrition & overweight, occupational safety & health, oral health, physical activity & fitness, public health infrastructure, respiratory disease, sexually transmitted disease, substance abuse, tobacco use, and miscellaneous topics. For the Native Hawaiian health brief, the search cross-referenced the terms Hawaii, Hawaiian and Native Hawaiian with the aforementioned areas.

Limitations

It is difficult to characterize the health status of specific Asian American or Pacific Islander ethnic populations. Many studies do not differentiate between the various ethnicities studied. Small sample sizes make it difficult to generalize research findings and in some cases, data are just not available. For these reasons, the data contained here provide only a rough estimate of health status and are not an exhaustive presentation of the findings, nor are they meant for medical decision-making.

Contributors

This series was revised in 2006 by Gem P. Daus, MA, Mona Bormet, MPH, and Sang Leng Trieu, MPH, with research assistance from Doris Chen. You may send comments and questions to healthinfo@apiahf.org.