Published in final edited form as:

J Clin Psychiatry. 2011 June ; 72(6): 820–826. doi:10.4088/JCP.09m05401blu.

Ethnoracial Disparities in Sexual Assault among Asian-Americans and Native Hawaiians/Other Pacific Islanders

Annette S. Crisanti, Ph.D.¹, B. Christopher Frueh, Ph.D.², Debbie Gundaya, M.A.^{1,3},
Florentina R. Salvail, M.Sc.⁴, and Elisa G. Triffleman, M.D.⁵

¹Mental Health Services Research, Evaluation, and Training Program, University of Hawai'i, Manoa, HI

²The Menninger Clinic and the Menninger Department of Psychiatry and Behavioral Sciences, Baylor College of Medicine, Houston, TX

³Department of Economics, University of Hawai'i, Manoa, HI

⁴Hawai'i Behavioral Risk Factor Surveillance System Program, Department of Health, Honolulu, HI

⁵Private Practice, Port Washington, NY

Abstract

Context—Ethnoracial differences may exist in exposure to trauma and post-traumatic outcomes. However, Asian-Americans and Native Hawaiians/Other Pacific Islanders (NHOPI) are vastly underrepresented in research pertaining to trauma and health status sequelae.

Objective—To determine whether there are ethnoracial disparities in sexual trauma exposure and its sequelae for health and functioning among Asian-Americans and NHOPI.

Design, Setting, Participants—We examined data on sexual assault exposure from the 2006–2007 Hawai'i Behavioral Risk Factor Surveillance System (H-BRFSS), cross-sectional adult community-based probability sample ($n = 12,573$). Data were collected via computer-assisted random-digit landline telephone survey. Survey response rate was found to be about 48% in 2006 and 52% in 2007.

Main Outcome Measures—Demographic information, the Sexual Violence Module regarding unwanted sexual experiences, and questions about health lifestyles, chronic diseases and disability, and health status and quality of life.

Results—Participants were 42.3% White, 14.4% NHOPI, and 39.3% Asian-American. NHOPI had a higher 12-month period prevalence (2.24 per 100, CI=1.32–3.78) of any unwanted sexual experience, but a lower prevalence estimate and odds ratio for any lifetime unwanted sexual experience (prevalence: 9.38 per 100, CI=7.59–11.55; odds ratio: 0.61, CI=0.47–0.81) relative to Whites, after adjusting for age, gender, income and education level. Asian-Americans had lower prevalence estimates for 12-month period prevalence (0.78 per 100, CI=0.44–1.39), and lower lifetime prevalence estimates and odds ratios (prevalence: 3.91 per 100, CI=3.23–4.72; odds ratio: 0.27, CI=0.21–0.34). 12-month and lifetime prevalence estimate any unwanted sexual experiences for Whites were 0.71 per 100 (CI=0.45–1.12) and 12.01 per 100 (CI=10.96–13.14), respectively. Sexual assault experiences were highly associated with adverse health status sequelae (e.g., disability, poor general health), but there were no significant ethnoracial disparities on self-reported health outcomes among those with a lifetime history of unwanted sexual experiences.

Conclusions—Data revealed significant ethnoracial differences among Whites, Asian-Americans, and NHOPIs on unwanted sexual experiences, with relative risk differing by time period. This pattern of disparity could represent early stages of a new trend in local assaultive behaviors toward NHOPIs and merits attention. Across all ethnoracial groups, a lifetime history of any unwanted sexual experience is associated with a wide range of adverse health status sequelae.

Keywords

trauma; posttraumatic stress disorder; Asian-Americans; Native Hawaiians; Pacific Islanders; adverse health outcomes

Data on the mental and physical health of ethnoracial minorities in the United States are lacking in the published literature across disciplines (1). Few studies have examined potential ethnoracial disparities in sequelae for health and functioning after exposure to psychological trauma and most national studies have only very small subsamples of certain minority groups (2) or collapse different minority groups together in a way that may obscure disparities between groups (3). This is of concern because interpersonal violence has dramatic adverse effects on mental and physical health, and is a major risk factor for a range of medical comorbidities (4–7). Lower socioeconomic status is a risk factor for assaultive violence (4); in turn, ethnic minorities are disproportionately of lower socioeconomic status, thus placing some members of ethnic minority groups at higher risk for exposure to violence.

Because of wide variation in the percentage of regional representation in the U.S. population, some ethnoracial minorities, such as Asian-Americans and Pacific Islanders, typically appear in insufficient numbers in nationally-representative epidemiological samples to permit meaningful conclusions. Additionally, few studies have been designed to examine trauma in Asian-Americans, Native Hawaiians, and other Pacific Islanders. A recent national study that combined these three groups together for comparison against “non-Asians” found that “Asians” had a lower rate of violent victimization, but were more likely to be violently victimized by a stranger (3). This same study found that among “Asians” males gender and youth were associated with higher rates of violent victimization. However, in this study all Asian-Americans, Native Hawaiians, and other Pacific Islanders were combined into one group (labeled as “Asians”) so intergroup comparisons were not made. Findings from the National Violence against Women survey found that Asian-American and Pacific Islanders tend to report lower rates of interpersonal violence than do women and men from other minority backgrounds (8). However, disparities among minority groups diminish when other socio-demographic and relationship variables are accounted for.

The state of Hawaii offers a unique opportunity to study potential ethnoracial disparities in interpersonal violence and its sequelae for health and functioning because it has relatively high percentages of Asian-Americans (39.9%), Native Hawaiians and other Pacific Islanders (8.7%), and people of two or more races (21.5%) (9). Recent epidemiological data has shown high rates of interpersonal violence among youth and adolescents in Hawaii (10,11) along with high rates of psychiatric disorders among adolescents, especially among Native Hawaiians (12), though Whites are more likely to report violence victimization than most other ethnoracial groups (13).

The lack of valid estimates of trauma exposure and sequelae among ethnoracial minority groups leads to misinformed policy decisions, which limits the ability to adequately fund, plan, and monitor necessary services, and has significant public health consequences. In this study, we examined the prevalence of unwanted sexual experiences from a large community-based probability sample of adults in Hawaii in order to address the question of

whether there are ethnoracial disparities among Asian-Americans, Native Hawaiians and other Pacific Islanders, to examine the impact of controlling for relevant demographic covariates (gender, age, education, income), and to examine whether ethnoracial differences exist in self-reported post-traumatic health complaints and conditions, such as chronic disease and disability, health status and quality-of-life. We focused specifically on completed and attempted sexual assaults and other unwanted sexual experiences because these are prevalent and highly associated with adverse health status sequelae.

Methods

Sample

Data were abstracted from a large cross-sectional survey conducted through the Hawai'i Behavioral Risk Factor Surveillance System (H-BRFSS), which is an ongoing land-based random telephone survey that collects information on health risk behaviors, preventative health practices, and health care access primarily related to chronic disease and injury. The H-BRFSS is funded by the Centers of Disease Control (CDC). Currently, national BRFSS data (9,14) are collected in all 50 states, the District of Columbia, Puerto Rico, the U.S. Virgin Islands, and Guam. The Sexual Violence Module (SVM) was included in calendar years 2006 and 2007.

The survey population for the H-BRFSS is all civilian, non-institutionalized residents aged 18 years of age and older in the state of Hawaii who have land-based telephones. Following CDC's guidelines and standards, the Disproportionate Stratified Sample (DSS) method is used to select randomly land-based telephone numbers throughout the state of Hawai'i. Business, government, and nonworking numbers are excluded from the sample. Interviewers are trained to ask questions exactly the same way for every call using a Computer Assisted Telephone Interview (CATI) program, which is also used to dial telephone numbers and enter data. The survey data are edited and weighted by the CDC.

Theoretically, while non-English speaking households were eligible, they were not included in the dataset as the interviewers were only English speaking. A household is considered linguistically isolated if no person aged 14 or over speaks English at least "very well." According to U.S. Census data, data from the 2007 American Community Survey showed that approximately 6% of households in Hawaii are linguistically isolated (http://hawaii.gov/dbedt/info/census/ACS2007/acs_2007_subject/s1602.pdf). An examination of the percent of contacts that had language problems and were therefore not able to participate in the 2006 and 2007 surveys was 1.6%. BRFSS data are directly weighted for the probability of selection of a telephone number, the number of adults in a household, and the number of telephones in a household. A final post-stratification adjustment is made for non-response and non-coverage of households without telephones. The weights for each relevant factor are multiplied together to get a final weight (<http://www.cdc.gov/brfss/faqs.htm#17>). Further information on the BRFSS weighting procedure can be found at: http://www.cdc.gov/BRfss/technical_infodata/weighting.htm.

The Council on American Survey Research Organization (CASRO) method (15) of determining the survey response rate was computed for the H-BRFSS survey and was found to be about 48% in 2006 and 52% in 2007, which is above the 40% minimum requirement of Behavioral Surveillance Branch of the CDC (16). For both years, slightly more than 6,500 adults participated in the survey; 6,564 in 2006 and 6,603 in 2007 (total N = 13,167). The records were weighted by county, age and sex to extrapolate to the state population. Our data show that 211 landline household phones were called and participated in both 2006 and 2007, indicating that 1.68% (211/12,573) of our sample was potential duplicates.

Participants were classified into ethnoracial groups based on their self-report responses to two questions. The first question asked respondents to identify their race with the possibility of selecting up to six different ethnoracial groups from a list of 23 ethnoracial groups. A follow-up question, used to classify respondents for our analyses, asked those respondents who identified more than one ethnoracial group to select the one that best represents their race. Results from these two questions were collapsed into the three federally defined ethnoracial groups focused on in this paper. Consistent with the purpose of this study, the sample was restricted to those participants who self-identified as either White, Hawaiian and Other Pacific Islander (NHOPI, 14.4%), or Asian-American (39.3%). Respondents who did not fall into one of these three categories (3.9%) were excluded from the present analyses due to their relatively lower population rate. Data on race were missing for 82 respondents resulting in a sample of 12,573 for the demographic analyses. The ethnoracial distribution of our sample is comparable to the ethnoracial distribution of the population of Hawaii (16).

Measures

Hawaii Behavioral Risk Factor Surveillance System Variables—All of the data described below were collected via self-report. Descriptive data for the final sample are presented in Table 1.

Demographic Information—Respondents were asked about sociodemographic information including age, sex, marital status, income level, education and employment status. Response categories were set in advance by the BRFSS. For context regarding income, according to the 2009 Poverty guidelines for Hawaii (17) incomes lower than \$20,000 indicate poverty for families of three (benchmark = \$21,060) or more.

Unwanted Sexual Experiences—The SVM includes eight questions about different types of sexual violence or unwanted sexual experiences (see Table 2). The primary questions of interest for this paper were about experiences of completed sexual assault (questions 3 and 4) and attempted sexual assault (questions 5 and 6). We computed two additional variables to reflect any type of unwanted sexual experience (attempted and/or completed sexual assault combined), one for lifetime and one for the past 12-months. The first six questions were yes/no format. A question about the relationship to the perpetrator had 19 response categories (including two for “do not know” and refused). These responses were collapsed into seven categories: current partner, former partner, relatives, non-relatives/acquaintance, friend, stranger, and missing data, which included don’t know and refused to answer. Questions 1 and 2 about unwanted touching and sexual harassment (see Table 2) were for the past 12-month period only and were not included in the “unwanted sexual experiences” category described above.

Health Lifestyles—Questions about health lifestyles included: cigarette smoking (i.e., frequency measured in days), alcohol use (binge drinking and heavy drinking) and physical activity. A smoker was defined as someone who currently smoked cigarettes some days or every day. “Binge drinking” and “heavy drinking” were BRFSS CDC derived variables, using cut-points developed for the current survey. For adult males, a “binge drinker” was defined as having five or more drinks on one occasion. For adult females, a “binge drinker” was defined as having four or more drinks on one occasion. In contrast, a “heavy drinker” was based on drinks per day. For adult males, a “heavy drinker” was defined as more than 2 drinks per day. For adult females, a “heavy drinker” was defined as more than 1 drink per day. The question regarding physical activity asked about participation (yes/no) in activities such as running, walking, etc. in the past month.

Chronic Diseases and Disability—This category included six questions, four of which reflect lifetime occurrence of certain health conditions (asthma, diabetes, heart attack and angina or coronary heart disease). The last two questions focused on disability and activity limitation due to mental health and physical health. The question on disability asked respondents whether they were currently limited in any activities because of physical, mental or emotional health problems. The question on activity limitation asked “during the past 30 days for about how many days did poor physical health or mental health keep you from doing your usual activities, such as self-care, work or recreation?” Extreme limited activity was defined by 14 days or more.

Health Status and Quality of Life—There were three health status questions and one item on general satisfaction with life. The first health status question related to general health. A five- point Likert scale (excellent, very good, good, fair and poor) were dichotomized with the top three ratings in one category and the bottom two in another. The last two health status questions were used to generate two variables called “frequent mental distress” and “frequent physical distress” (18,19). Both distress variables were derived by using the 14-days or more cut-off to the following two questions: (a) Now thinking about your mental health, which includes stress, depression, and problems with emotions, for how many days during the past 30 days was your mental health not good? and (b) Now thinking about your physical health, which includes physical illness and injury, for how many days during the past 30 days was your physical health not good? Conceptually, a 14-day “frequent distress” cutoff was deemed meaningful because this interval corresponds to the timeframe used by accepted taxonomies, such as the Diagnostic and Statistical Manual of Mental Disorders IV (20), for establishing mental distress. Empirically, a cut-point of 14 unhealthy days is considered to be a meaningful demarcation because it corresponds to the upper 10% to 15% of the general population for the mental health and physical health items in the BRFSS (21). Finally, respondents were asked to rate their satisfaction with life on a four point scale ranging from very satisfied, satisfied, dissatisfied and very dissatisfied. Responses were dichotomized into satisfied and dissatisfied.

Analysis

Data analyses were conducted using STATA (22). A preliminary logistic regression showed that the year in which the data were collected was not significant to the model. Therefore, data from both years were pooled for all analyses. Pearson chi-squared (X^2) statistics was used to examine the three ethnoracial groups on age, sex, marital status, income level, education and employment status, which were then used as covariates in subsequent analyses. Lifetime and 12-month period prevalence estimates were calculated to describe and compare the extent of completed sexual assault, attempted sexual assault, and any unwanted sexual experience. Separate chi-square analyses were used to examine the relationship to the perpetrator among those respondents with a reported history of unwanted sexual experiences.

Logistic regression was used to determine whether self-report rates of lifetime unwanted sexual experiences differ among ethnoracial group and if so, whether the differences persist once controlling for relevant covariates, such as gender and age. Ethnoracial group was entered as the independent variable and, in three separate models; lifetime completed sexual assault, lifetime attempted sexual assault, and lifetime any unwanted sexual experience were entered as dependent variables (referred to as the unadjusted models). Each separate model was then expanded to include the covariates (referred to as the adjusted model). Low base rates did not permit logistic regression modeling with the 12-month data. Logistic regression was also used to examine ethnoracial differences in (a) health life styles, (b) chronic disease and disability, and (c) health status and quality of life among those with a lifetime history of

any unwanted sexual experience. For these analyses, only “lifetime any unwanted sexual experience” was examined and entered into the model as an independent variable along with race because of the low base rates in the 12-month data and to restrict the number of exploratory tests. Interaction variables between race and any unwanted sexual experience were created and entered into the models. Cigarette smoking, heavy drinking, binge drinking, exercise, asthma, diabetes, heart attack, angina or coronary heart disease, disability, activity limitation due to mental and/or physical health, general health status, frequent mental distress, frequent physical distress, and satisfaction with life were entered as separate dichotomous (yes/no) dependent variables. All of the models were expanded to adjust for covariates. Respondents with missing data were omitted from the chi-square and logistic regression analyses.

Results

Demographic Differences

Significant group differences emerged between the three ethnoracial groups on gender, age, education, income level, marital status, and employment with the differences in proportions most evident among the first four variables (Table 1). Compared to the other ethnoracial groups, NHOPI were more likely to be female, young, single, and had lower levels of education and income. Being currently employed was slightly less often reported by Asian-Americans than Whites.

Ethnoracial Group Differences in Sexual Assault

Rates of self-reported completed sexual assault, attempted sexual assault, and any unwanted sexual experience varied across ethnoracial groups, but the risk for ethnoracial groups differed depending on the time period (i.e., lifetime versus 12 month prevalence). According to results presented in Table 3, Asian-Americans were the least likely to report being a victim of completed sexual assault, attempted sexual assault, or any unwanted sexual experience in their lifetime, while White respondents were the most likely to report such experiences. Among White respondents, the prevalence of lifetime any unwanted sexual experience was three times that reported among Asian-Americans (12.01 per 100 compared to 3.91 per 100). NHOPIs also reported high rates of any unwanted sexual experience; 9.38 per 100 reported being a victim of actual or attempted sexual assault in their lifetime. For all ethnoracial groups, lifetime attempted sexual assault was more common than lifetime completed sexual assault.

In contrast to lifetime prevalence, NHOPIs were the most likely to report being a victim of completed sexual assault (0.64 per 100), attempted sexual assault (2.03 per 100), or any unwanted sexual experience (2.24 per 100) in the past 12-months. White respondents were the least likely across all three 12-month prevalence categories; however their rates of attempted sexual assault and any unwanted sexual assault were similar to Asian-American respondents (Table 3).

The logistic regression results showed that compared to Whites, respondents in the NHOPI and Asian-American groups were significantly less likely to report being sexually assaulted during their lifetime, and the differences increased after adjusting for gender, age, income, and education level. For example, compared to Whites, NHOPI were 49% less likely to report being a victim of sexual assault, but 63% less likely when several demographic differences were accounted for. For all but one of the models, the same trends were observed for lifetime attempted sexual assault and lifetime any unwanted sexual experience. For attempted sexual assault, the difference between NHOPIs and Whites only becomes significant after controlling for the demographic differences. For all of the logistic

regression analyses, unadjusted and adjusted, Asian-Americans were the least likely to report being a victim of completed and/or attempted sexual assault (Table 4).

While a significant difference was not found among ethnoracial groups with respect to the self-reported relationship to the perpetrator among those respondents with a history of any unwanted sexual experiences, some interesting trends were observed. A non-relative/acquaintance was the most frequently identified perpetrator among Whites (31.7%) and NHOPIs (24.2%). In contrast, a friend was the most frequently identified perpetrator among Asian-Americans (30.5%). NHOPIs were more likely than the other two groups to report the perpetrator as being a “relative”; 13.8% compared to 11.6% of Whites, and 7.2% of Asian-Americans.

There were very few reports of unwanted “touching” and “exposure” during the past 12-months, but the frequencies varied by ethnoracial group. When asked about whether anyone had, in the past 12-months and without their consent, touched sexual parts of their body, NHOPIs were more likely to report this experience (1.11%) than Whites (0.83%) or Asian-Americans (0.51%) ($X^2 = 8.02$, $p = 0.018$). With respect to being exposed to unwanted sexual situations that did not include physical touching in the past 12-months, Whites were slightly more likely to report that this happened compared to NHOPIs, 1.34% compared to 1.16%, respectively. Asian-Americans were least likely to report this experience (0.62%) ($X^2 = 13.94$, $p = 0.001$).

Group Differences in Health Lifestyles, Chronic Disease and Disability and Health Status and Quality of Life

Logistic regression analyses showed that reporting a history of any unwanted sexual experience was significantly related to reporting cigarette smoking, disability, poor general health, poor mental health, poor physical health, and less satisfaction with life. Interaction terms included in the models between race and any unwanted sexual experiences showed that the increased risk between said history and the various outcomes did not vary by race.

Comment

Prevalence data from this large community-based probability sample of adults in Hawaii revealed significant ethnoracial differences among Whites, Asian-Americans, and Native Hawaiians and Other Pacific Islanders on lifetime self-reported exposure to completed sexual assault, attempted sexual assault, and any unwanted sexual experience, and show that relative risk for ethnoracial groups numerically differed depending on the time period. This pattern of results generally held up in a subsequent set of analyses adjusting for relevant demographic variables. In fact, Whites were about three times as likely as Asian-Americans to report a lifetime sexual assault, and almost twice as likely as NHOPIs to report a lifetime sexual assault.

Our findings reveal a contrast between lifetime and period prevalence in sexual assault experiences for the different groups. NHOPIs reported far more sexual assault experiences within the past 12-months than either Whites or Asian-Americans, with two to three times the period prevalence in unadjusted models. However, as noted above, they showed a lower rate of lifetime sexual assault than Whites. Thus, this pattern of disparity among NHOPIs is worrisome in that recent assault patterns are so different from lifetime prevalence patterns and, combined with recent evidence of a surge in violence among youth (23,24), could represent the early stages of a new trend in local assaultive experiences involving NHOPIs. This merits careful attention in future waves of the CDC’s Hawaii BRFSS. Specifically, efforts should be made to answer the question of whether NHOPIs are experiencing increased patterns of sexual violence in their communities.

Consistent with prior studies (7), results from this ethnoracially diverse sample show that a lifetime history of any unwanted sexual experience is associated with a wide range of adverse health status sequelae, specifically cigarette smoking, disability, poor general health, poor mental health, poor physical health, and less satisfaction with life. These associations did not vary by ethnoracial group, indicating that sexual assault experiences are generally harmful for anyone experiencing them, regardless of ethnoracial status.

A trend emerged when the relationship to perpetrator was examined among those respondents with a reported history of any unwanted sexual experiences. Although a non-relative was the most frequently identified perpetrator across ethnoracial groups, results indicate that NHOPIs were more likely to identify a perpetrator as being a “relative” than were other ethnoracial groups. One possible explanation for this disparity is that people from this group may have larger families, and thus more potential perpetrators, or may have an expanded definition of who a “relative” is. It is common for NHOPIs to have multiple non-biologically-related “aunties” or elders, who are viewed as “family.” Thus, this finding may be an artifact of differing cultural norms and traditions, although it too merits closer examination in the future to determine more precisely who identified “relative” perpetrators of NHOPIs are and whether they would be considered to be “relatives” by other ethnoracial groups.

There are several other study limitations that merit comment. In addition to the usual methodological limitations of cross-sectional and self-report research, our data show that 211 landline household phones were called and participated in both 2006 and 2007, indicating that < 2% of our sample were potentially duplicated. However, we cannot know if the same person was reached in these calls and the majority of these households had more than one eligible resident. Second, the current study does not include people who were without a land-based telephone. While this restricts the representation of the sample, one of the strengths of the Hawaii BRFSS data compared to other states, is that Hawaii has one of the lowest percentage of wireless-only households at 8% in 2007 (25). Third, important information may have been lost or masked when we collapsed people of different ethnoracial backgrounds into three categories. Fourth, self-reports about threatening topics are subject to errors beyond mere faulty recall (26). The low rate of reported sexual assault experiences among Asian-Americans may be a cultural artifact in that men’s violence toward women is regarded as a private, embarrassing, or shameful matter (27–31). Concern about these study limitations is mitigated by the study’s strengths, including a large, ethnoracially diverse, representative community-based population sample and the fact that our analyses classify Asian-Americans and Native Hawaiians/Other Pacific Islanders into two separate groups for comparison, thus reducing chances that important potential ethnoracial differences are obscured by collapsing heterogeneous groups together.

These novel findings contribute to our understanding of potential ethnoracial disparities in sexual assault experiences and their sequelae for health status among Asian-Americans and NHOPIs, who are vastly underrepresented in published research pertaining to trauma and health status sequelae. Future research is needed in these populations regarding the prevalence of other forms of traumatic events (e.g., physical assault, natural disasters), psychopathological posttraumatic reactions (e.g., PTSD), intergenerational residence status, and cultural differences in the meaning of specific traumatic experiences which may influence reporting, help-seeking behaviors, and treatment response. Finally, these data remind those responsible for ensuring the public health that sexual assault experiences have a wide range of adverse health status sequelae for Whites, Asian-Americans, and NHOPIs alike.

Acknowledgments

This work was partially supported by the Mental Health Services Research, Evaluation, and Training Program, University of Hawai'i, Manoa, HI, and by grant MH074468 from the National Institute of Mental Health (NIMH). We are grateful for the support and collaboration of the Hawai'i Behavioral Risk Factor Surveillance System Program of the Hawai'i State Department of Health, Honolulu, HI. We also thank Dr. Nnamdi Pole for his comments on an earlier draft of this manuscript. Dr. Frueh is now affiliated with the University of Hawai'i Hilo, HI and The Menninger Clinic, Houston, TX. Dr. Crisanti had full access to all of the data in the study and takes responsibility for the integrity of the data and the accuracy of the data analysis.

References

1. Freeman HP, Payne R. Racial injustice in health care. *New England Journal of Medicine*. 2000; 342:1045. [PubMed: 10749970]
2. Pole N, Gone JP, Kulkarni M. Posttraumatic stress disorder among ethnoracial minorities in the United States. *Clinical Psychology: Science and Practice*. 2008; 15:35–61.
3. Harrell, E. Asian, native Hawaiian, and pacific islander victims of crime. Bureau of Justice Statistics. U. S. Department of Justice; 2009.
4. Breslau N, Kessler RC, Chilcoat HD, Schultz LR, Davis GC, Andreski P. Posttraumatic stress disorder in the community: The 1996 Detroit Area Survey of Trauma. *Archives of General Psychiatry*. 1998; 55:626–632. [PubMed: 9672053]
5. Kilpatrick DG, Ruggiero KJ, Acierno R, Saunders BE, Resnick HS, Best CL. Violence and risk of PTSD, major depression, substance abuse/dependence, and comorbidity: Results from the National Survey of Adolescents. *Journal of Consulting and Clinical Psychology*. 2003; 71:692–700. [PubMed: 12924674]
6. Magruder KM, Frueh BC, Knapp RG, Davis L, Hamner MB, Martin RH, Gold PB, Arana GW. Prevalence of posttraumatic stress disorder in VA primary care clinics. *General Hospital Psychiatry*. 2005; 27:169–179. [PubMed: 15882763]
7. Schnurr PP, Green BL. Understanding relationships among trauma, post-traumatic stress disorder, and health outcomes. *Advances in Mind-Body Medicine*. 2004; 20:18–29. [PubMed: 15068106]
8. Tjaden, P.; Thoennes, N. Full report of the prevalence, incidence, and consequences of violence against women: Findings from the National Violence Against Women Survey. 2000. Retrieved Nov. 1, 2005, from: <http://www.ncjrs.gov/pdffiles1/nij/183781.pdf>.
9. Centers for Disease Control and Prevention. Behavioral Risk Factor Surveillance System Survey Questionnaire. Atlanta, Georgia: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention; 2007.
10. Hishinuma ES, Johnson RC, Kim SP, Nishimura ST, Makini GK, Andrade NN, Yates A, Goebert DA, Mark GY, Mayeda DT, Revilla LA. Prevalence and correlates of misconduct among ethnically diverse adolescents of Native Hawaiian/part-Hawaiian and non-Hawaiian ancestry. *International Journal of Social Psychiatry*. 2005; 51:242–258. [PubMed: 16252792]
11. Mayeda DT, Hishinuma ES, Nishimura ST, Garcia-Santiago O, Mark GY. Asian/Pacific Islander youth violence prevention center: Interpersonal violence and deviant behaviors among youth in Hawaii. *Journal of Adolescent Health*. 2006; 39:276.e1–276.e11. [PubMed: 16892499]
12. Andrade NN, Hishinuma ES, McDermott JF, et al. The National Center on Indigenous Hawaiian Behavioral Health Study of prevalence of psychiatric disorders in native Hawaiian adolescents. *Journal of the American Academy of Child and Adolescent Psychiatry*. 2006; 45:26–36. [PubMed: 16327578]
13. Hishinuma ES, Chang JY, Goebert DA, Else IR, Nishimura ST, Choi, Misailidis S, Andrade NN, Mayeda DT, Jones LM. Prevalence of victims of violence among ethnically diverse Asian/Pacific Islanders. *Violence and Victims*. 2005; 20:561–575. [PubMed: 16248491]
14. Centers for Disease Control and Prevention. Behavioral Risk Factor Surveillance System Survey Data. Atlanta, Georgia: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention; 2007.
15. Council on American Survey Research Organization. <http://casro.org>.

16. United States Census Bureau. 2006 American Community Survey: Hawaii, data profile highlights. 2006. Retrieved June 18, 2008, from:
http://factfinder.census.gov/servlet/ACSSAFFacts?_event=&geo_id=04000US15&_geoContext=01000US%7C04000US15&_street=&_county=&_cityTown=&_state=04000US15&_zip=&_lang=en&_sse=on&ActiveGeoDiv=&_useEV=&pctxt=fph&pgsl=040&_submenuId=factsheet_1&ds_name=DEC_2000_SAFF&_ci_nbr=null&qf_name=null®=null%3Anull&_keyword=&_industry=
17. Department of Health & Human Services. Annual update of the HHS poverty guidelines. Federal Register. 2009; 74:4199–4201.
18. Crisanti, AS. Health and level of functioning. Technical Report No. 080721: AMHD and Mental Health Services Research, Evaluation, and Training Program of the University of Hawaii. 2008.
19. Reyes-Salvail, F.; Nguyen, SLDH. Frequent mental distress prevalence and disparity: Hawaii BRFSS 2005–2007. The HBRFSS Special Report: State of Hawaii. 2008. p. 6
20. American Psychiatric Association. Diagnostic and statistical manual of mental disorders. 4th ed. Washington, DC: Author; 1994.
21. Brown DW, Balluz LS, Heath GW, Moriarty DG, Ford ES, Giles WH, Mokdad AH. Associations between recommended levels of physical activity and health-related quality of life. Findings from the 2001 Behavioral Risk Factor Surveillance System (BRFSS) survey. Preventative Medicine 2003. 2003; 37:520–528.
22. StataCorp. Stata Statistical Software: Release 10. College Station, TX: StataCorp LP; 2007.
23. Affonso DD, Shibuya JY, Frueh BC. Talk story: Perspectives of children, parents, and community leaders on community violence in rural Hawaii. Public Health Nursing. 2007; 24:400–408. [PubMed: 17714224]
24. Dayton K. Domestic violence escalating. The Honolulu Advertiser. 2006 November 19.
25. Center of Disease Control National Center for Health Statistics. Wireless Substitution: State-level estimates from the National Health Interview survey. Retrieved October 8, 2009, from:
<http://www.cdc.gov/nchs/data/nhsr/nhsr014.pdf>
26. Crisanti AS, Laygo R, Claypoole K, Junginger J. Accuracy of self-reported arrests among a forensic SPMI population. Behavioral Sciences and the Law. 2005; 23:295–305. [PubMed: 15818605]
27. Zhang AY, Snowden LR, Sue S. Differences between Asian and White Americans' help seeking and utilization patterns in the Los Angeles area. Journal of Community Psychology. 1998; 26:317–326.
28. Weingourt R, Maruyama T, Sawada I, Yoshino J. Domestic violence and women's mental health in Japan. International Nursing Review. 2001; 48:1102–1108.
29. Taylor W, Magnussen L, Amundson MJ. The lived experience of battered women. Violence Against Women. 2001; 7:563–585.
30. Magnussen L, Amundson J, Smith N. Through the eyes of women: Cultural insights into living as a battered women in Hawaii. Nursing and Health Sciences. 2008; 10:125–130. [PubMed: 18466385]
31. Shultz J, Magnussen L, Hansen K, Selifis SM, Ifenuk M. Intimate partner violence: Perceptions of Chuukese women. Hawaii Medical Journal. 2007; 66 268-27.

Table 1

Comparison of Demographic Variables Across Ethnoracial Groups

Demographic Variable	White	NHOPI	Asian-American	Pearson χ^2 (df)	p Value
N	5,541	1,889	5,143		
Gender				23.5(2)	0.001
Female	56.4%	62.1%	59.9%		
Male	43.6%	37.9%	40.2%		
Age				280.9(4)	0.001
18–44	29.0%	45.1%	31.7%		
45–64	48.9%	38.9%	39.8%		
65 Plus	22.1%	16.0%	28.6%		
Marital Status				62.2(4)	0.001
Married	56.4%	52.5%	59.0%		
Div/Sep/Wid	24.7%	21.5%	21.2%		
Single	19.0%	26.0%	19.8%		
Employment				85.2(4)	0.001
Working	61.7%	63.6%	59.7%		
Not working/ homemaker/ student/retired	33.7%	30.8%	38.0		
Unable to work	4.6%	5.7%	2.3%		
Education				663.3(6)	0.001
Less than high school	3.6%	8.6%	6.6%		
High school	21.5%	46.0%	27.9%		
Some college	29.8%	27.5%	27.9%		
College and above	45.1%	17.9%	37.6%		
Income				266.2(6)	0.001
< \$20,000	12.6%	21.6%	13.2%		
\$20,000–\$34,999	17.3%	25.3%	21.3%		
\$35,000–\$49,999	35.3%	36.1%	37.6%		
\$50,000 Plus	34.7%	17.1%	27.9%		

Table 2**The SVM Questions included in the H-BRFSS**

-
1	In the past 12 months, has anyone touched sexual parts of your body after you said or showed that you didn't want them to, or without your consent (for example being groped or fondled)?
2	In the past 12 months, has anyone exposed you to unwanted sexual situations that did not involve physical touching? Examples include things like sexual harassment, someone exposing sexual parts of their body to you, being seen by a peeping Tom, or someone making you look at sexual photos or movies?
3	Has anyone EVER had sex with you after you said or showed that you didn't want them to or without your consent?
4	Has this happened in the past 12 months?
5	Has anyone EVER ATTEMPTED to have sex with you after you said or showed that you didn't want to or without your consent, but sex did not occur?
6	Has this happened in the past 12 months?
7	Think about the time of the most recent incident involving a person who had sex with you – or – attempted to have sex with you after you said or showed that you didn't want to or without your consent? What was the person's relationship to you?
8	Was the person who did this male or female?
-

Table 3

Lifetime and Period Prevalence per 100 of Completed Sexual Assault, Attempted Sexual Assault, and Any Unwanted Sexual Experience By Ethnoracial Group

	Ethnoracial Group			
	White	NHOPI	Asian-American	Total
<u>Lifetime Prevalence</u>				
Completed Sexual Assault (95% CI)	7.14 (6.34–8.04) N = 5,233	3.76 (2.75–5.14) N = 1,746	2.0 (1.54–2.60) N = 4,613	4.12 (3.70–4.59) N = 11,592
Attempted Sexual Assault (95% CI)	9.58 (8.64–10.60) N = 5,226	8.08 (6.37–10.20) N = 1,748	3.18 (2.57–3.95) N = 4,613	6.27 (5.72–6.87) N = 11,587
Any Unwanted Sexual Experience (95% CI)	12.01 (10.96–13.14) N = 5,228	9.38 (7.59–11.55) N = 1,745	3.91 (3.23–4.72) N = 4,607	7.69 (7.09– 8.34) N = 11,580
<u>12-month Period Prevalence</u>				
Completed Sexual Assault (95% CI)	0.13 (0.07–0.23) N = 5,232	0.64 (0.24–1.70) N = 1,746	0.30 (0.10–0.85) N = 4,613	0.29 (0.16–0.55) N = 11,591
Attempted Sexual Assault (95% CI)	0.66 (0.40–1.07) N = 5,336	2.03 (1.15–3.58) N = 1,748	0.71 (0.38–1.32) N = 4,613	0.91 (0.65–1.27) N = 11,587
Any Unwanted Sexual Experience (95% CI)	0.71 (0.45–1.12) N = 5,222	2.24 (1.32–3.78) N = 1,745	0.78 (0.44–1.39) N = 4,606	0.98 (0.73–1.36) N = 11,573

Table 4

Lifetime Completed Sexual Assault, Attempted Sexual Assault and Any Unwanted Sexual Experience:
Logistic Regression Odds Ratios and 95% Confidence Intervals (Unadjusted and Adjusted Models)

	Ethnoracial Group	
	NHOPI	Asian-American
Completed Sexual Assault		
Unadjusted OR (95% CI)	0.51 (0.36 – 0.72) ^a	0.27 (0.20 – 0.36) ^a
Adjusted OR (95% CI)	0.37 (0.26 – 0.54) ^a	0.22 (0.16 – 0.31) ^a
Attempted Sexual Assault		
Unadjusted OR (95% CI)	0.83 (0.63 – 1.10)	0.31 (0.24 – 0.40) ^a
Adjusted OR (95% CI)	0.69 (0.51 – 0.93) ^b	0.29 (0.22 – 0.37) ^a
Any Unwanted Sexual Experience		
Unadjusted OR (95% CI)	0.76 (0.59 – 0.98) ^b	0.30 (0.24 – 0.37) ^a
Adjusted OR (95% CI)	0.61 (0.47 – 0.81) ^a	0.27 (0.21 – 0.34) ^a

Note: The three separate models include completed sexual assault, attempted sexual assault, and any unwanted sexual experience as the dependent variables. Time period is “lifetime” for all unwanted sexual experiences. Ethnoracial group is the primary independent variable for all three models, with White as the reference category. All three models were then adjusted for gender, age, income, and education level. For completed sexual assault, unadjusted model N = 11,652, adjusted model N = 10,539. For attempted sexual assault, unadjusted model N = 11,647, adjusted model N = 10,531. For any unwanted sexual experience, unadjusted model N = 11,639, adjusted model N = 10,527.

^a significant at 0.001,

^b significant at 0.05