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HIV TESTING BEHAVIOR AMONG PACIFIC ISLANDERS IN SOUTHERN CALIFORNIA: EXPLORING THE IMPORTANCE OF RACE/ETHNICITY, KNOWLEDGE, AND DOMESTIC VIOLENCE

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This article presents an analysis of a 2008 community needs assessment survey of a convenience sample of 179 Pacific Islander respondents in southern California; the needs assessment focused on HIV knowledge, HIV testing behavior, and experience with intimate partner/relationship violence. Multivariate logistic regression results indicated that race/ethnicity and reported experience with intimate partner/relationship violence were the most important variables in explaining the variation in reported HIV testing among Chamorro/Guamanian and Samoan respondents. However, when analyzed separately, self-reported experience with intimate partner/relationship violence was associated with reported HIV testing only for Chamorro respondents and not for Samoan respondents. As U.S. Pacific Islanders experience a high degree of HIV health disparities, additional research is needed to clarify the links among race/ethnicity, intimate partner/relationship violence, and HIV testing behavior.

Pacific Islanders in the United States constitute a diverse multiethnic group, from myriad islands, both U.S. governed (e.g., the state of Hawai'i and U.S. territories, including American Samoa, Guam, Commonwealth of the Northern Mariana Islands) and sovereign nations (e.g., Fiji, Federated States of Micronesia, Palau, Papua New Guinea, Samoa, Tonga). The Pacific Islands are broadly grouped into three regions:

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Micronesia (including Guam, the Marianas, Palau, Marshall Islands), Polynesia (including New Zealand, American Samoa, Samoa, Hawai'i, Tonga, Tokelau), and Melanesia (including Papua New Guinea, Vanuatu, Solomon Islands, Fiji). There remains inadequate research on Pacific Islander health, especially HIV prevention and testing behavior, both on the islands and on the U.S. mainland. More research is urgently needed, however, as Pacific Islanders in the U.S. experience substantial health disparities. The Centers for Disease Control and Prevention (CDC, n.d.) reported that in 2007, Native Hawai'ians and Pacific Islanders (NHPIs) comprised about 0.2% of the U.S. population, but about 2% of new HIV infections.

This article focuses on Micronesians and Polynesians on the U.S. mainland to address this severe gap in scholarly and policy knowledge. Specifically, this paper presents an analysis of a community needs assessment survey conducted in late 2008 in southern California targeting Chamorros (indigenous peoples of Guam and surrounding islands in Micronesia), and Samoans, native Hawai'ians, and Tokelauans (indigenous peoples of the islands in Polynesia). The survey data suggest that there is an association among race/ethnicity, reported experience with intimate partner violence, and reported HIV testing for these Micronesians and Polynesians in southern California. The article concludes with a summary of the findings and recommendations for possible interventions and further research.

PACIFIC ISLANDERS AND HIV IN THE U.S.

AIDS case rates for Asians and Pacific Islanders (APIs) in the United States are relatively low compared with other ethnic groups (comprising about 1% of all U.S. AIDS cases from 2001 to 2004; CDC, 2006). However, scholars have argued that AIDS cases among APIs may be significantly underreported or misclassified; in a widely cited study, Kelly, Chu, Diaz, Leary, and Buehler (1996) found in comparing national AIDS surveillance data for APIs 12% disagreement with death certificates and 33% disagreement with self-reports. In addition, disaggregating Pacific Islanders from other Asian American subgroups in HIV research remains an important challenge. Pacific Islanders tend to be grouped with Asian Americans in national data sets when they are not aggregated in the "other" category. This diverse group, however, has distinct cultural norms and has experienced unique colonialist histories compared with Asian American populations; they consequently have ethnic/cultural factors more similar to Native Americans than the majority of Asian American groups (Ellingson & Odo, 2008). Therefore, focusing on Pacific Islanders separately from Asian Americans is a necessary and urgent need for HIV prevention research and intervention design/testing.

As already mentioned, epidemiological data from the CDC indicate that Pacific Islanders experience important health disparities with respect to HIV transmission. There is, however, very little research on Pacific Islanders and HIV and even less about Pacific Islanders and HIV on the U.S. mainland. To provide some indication of the potential variation in HIV transmission rates among Pacific Islanders, we review existing research and epidemiology focused on the Pacific Islands. In the Pacific Island region, although Papua New Guinea in Melanesia in 2008 reported about 99% of all HIV cases in the Pacific Island region (other than Australia and New Zealand), UNAIDS (n.d.) reported that "the island nations of New Caledonia, Fiji, French Polynesia and Guam" were also important sites for emerging HIV epidemics. The total estimated number of persons living with HIV in the Pacific Island region was

about 59,000 in 2008, with rising new HIV infections in Papua New Guinea, where the HIV prevalence rate, based on data from only the capital city, was about 0.6% Mackenzie et al., 2001; UNAIDS, n.d.). HIV transmission in Papua New Guinea and Fiji tended to be through heterosexual contact in contrast to Australia and New Zealand, where less than one third of new HIV infections was due to heterosexual contact.

The limited scholarship that exists on Pacific Islanders and HIV in the United States has tended to focus on same-sex behavior, though there has also been research on transgender women and HIV transmission. Researchers have found, for example, for Pacific Islander men who have sex with men in Hawai'i, cultural norms such as familial obligation and prioritizing giving (rather than receiving) may interfere with risk reduction strategies; familial obligation conflicts with the comfort in self-identifying as "gay," and prioritizing giving (rather than receiving) conflicts with individual risk reduction such as condom use for self-protection (Kanuha 2000). There is little, if any, research on heterosexual Pacific Islanders and HIV risk, especially for Pacific Islanders on the U.S. mainland.

Beyond the cultural norms of familial obligation and prioritizing giving common across Pacific Islander same-sex and heterosexual individuals, one important possible HIV risk factor for heterosexual Pacific Islanders is violence, especially intimate partner/relationship violence. The limited research that exists on intimate partner violence in Pacific Island settings has suggested that it is a significant issue (Paterson et al., 2007). Researchers have long argued that there is a direct link between intimate partner violence and HIV transmission (García-Moreno & Watts, 2000; Maman, Campbell, Sweat, & Gielen, 2000; Wenzel & Tucker, 2005; Zierler & Krieger, 1997). Linkages between intimate partner/relationship violence and HIV transmission are direct (e.g., HIV transmission through sexual violence) and indirect (e.g., increased sexual risk taking, lack of capacity for condom negotiation) (World Health Organization, 2004). However, there is little to no research that elucidates the linkages between intimate partner/relationship violence and HIV testing and prevention among Pacific Islanders, especially on the U.S. mainland (Tjadon & Thoennes, 2000).

The analysis of the community needs assessment survey data presented in the following sections suggests that for Pacific Islanders in southern California there is an important connection between reported having experienced intimate partner/relationship violence and reporting having been tested for HIV.

DATA AND METHODS

The data consist of a community needs assessment survey of a convenience sample of Micronesian (specifically Chamorros) and Polynesian (Samoan, native Hawai'ians, Tokelauans) residents in Los Angeles, Orange, and San Diego counties in southern California. The community needs assessment questionnaires were distributed April 1-30, 2008, at community/church meetings, cultural gatherings, and other community venues. A total of 179 questionnaires were returned, and each respondent was given $5 as a gift for completing the questionnaire.

The questionnaire was developed over a 7-month period in 2007 (June--December), by community members with the guidance of an independent consultant (who also evaluated the project). From June to October, the independent consultant provided trainings to community members in Long Beach and San Diego on

data collection, program evaluation, and needs assessments. These trainings were largely discussion based, with the consultant providing brief didactic presentations on data types (quantitative and qualitative), survey research methods, needs assessment approaches, and program evaluation strategies. During the trainings, community members were asked to provide examples of problems that were faced by their families and friends, to discuss whether community members would answer specific questions, and how best to frame such questions, and to forge stronger personal connections with each other and the consultant. From October to November, the consultant met with the community members in Long Beach and San Diego to refine questions and measures and to pilot-test measures. The final English version of the questionnaire was pilot tested with 20 individuals in San Diego and Los Angeles counties; the self-administered questionnaire took approximately 15 minutes to complete. The responses were reviewed and minor changes were made to the questionnaire to clarify any confusing issues (e.g., adding arrows to guide respondents through the self-administered questionnaire especially when questions were meant to be skipped). In December, the lead community organization, Guam Communications Network, developed a logo that was used on the survey instrument to help identify the survey as community based.

The final English version of the questionnaire was translated in February, 2008 into Samoan and Chamorro by several of the coauthors and another community-based organization. The translated versions were then back-translated into English by different community members than had translated the questionnaire into Samoan and Chamorro. Two of the coauthors compared the original and back-translated English versions to identify any mistranslations or differences in meaning between the original English and translated versions. Adjustments were made to the translated versions to ensure that the English and translated versions were equivalent (as much as possible given cultural and language differences).

To facilitate questionnaire completion, the final English and corresponding in-language versions (Samoan or Chamorro) were copied so that the English version was on the flip side of the Samoan or Chamorro version. Putting the English and in-language versions of the questionnaire on the same sheets was done for two reasons: (a) If respondents felt more comfortable switching between languages, one copy with the questionnaire in English and Samoan or Chamorro allowed them to answer in both or either language, and (b) having one questionnaire (in English and in-language) made survey administration easier (so that only one questionnaire would be needed at any of the sites). In addition, the questionnaires were color coded by language for ease of survey administration. Respondents were instructed to return their completed questionnaires to a sealed box, which would not be opened during data collection, but returned sealed to the lead community organization Guam Communications Network (to minimize respondent bias).

The convenience sample had the following characteristics (Table 1). About one third of the respondents were older than 50 years, and about one quarter were 24 years or younger. About 55% of the respondents reported being born in the Pacific Islands: 27% Guam, 17% American Samoa, 9% Western Samoa/Samoa, 3% Hawai'i. About 45% of the respondents reported being born on the United States mainland (with about 42% reporting being born in California). About 64% of the respondents reported having a high school education or less. The average household size was about 6.1 persons; respondents with children reported on average having about 2 children living with them. About 37% of the respondents reported a yearly household income of $50,000 or more. However, a substantial proportion reported

TABLE 1. Demographic Characteristics of Sample Compared With Census Data

Variable	Sample (*N* = 179)	% of Total	Southern California PUMS Data 2005-2007 (*N* = 727)	% of Total
Preferred language	English	55%	English	47
Primary Language (Census)	Chamorro	27%	Chamorro	10
	Samoan	17%	Samoan	26
Age	< 25 years	24%	< 25 years	42
	25-39 years	27%	25-39 years	24
	40-49 years	16%	40-49 years	14
	50 years or older	34%	50 years or older	20
Gender	Female	60%	Female	49
Race/ethnicity	Samoan	55%	Samoan	16
	Chamorro/Guamanian	33%	Chamorro/Guamanian	15
	Other	9%	Other	65
Place of birth	California	42%	California	46
	Guam	27%	Guam	20
	American Samoa	17%	American Samoa	10
	Western Samoa	9%	Western Samoa	7
Highest level of education	Primary school (K-8)	5%	Primary school (K-8)	20
	High school or GED	59%	High school or GED	28
	Junior College (AA/AS)	17%	Junior College (AA/AS)	5
	Voc/Trade School	5%	Some college	20
	College degree	10%	College degree and higher	8
Marital status	Married	55%	Married	39
	Never been married	29%	Never been married	51
	Divorced/separated	12%	Divorced/separated	10
Household size	Mean (number that live with respondent)	6.1	Mean (number that live with respondent)	4.8
Owns home	Owns	34%	Owns	56
Employed	Currently employed	60%	Currently employed	90
Yearly household income	< $20,000	15%	< $20,000	7
	$20,000 - $29,999	12%	$20,000 - $29,999	8
	$30,000 - $39,999	18%	$30,000 - $39,999	7
	$40,000 - $49,999	18%	$40,000 - $49,999	7
	$50,000 or more	37%	$50,000 or more	71

very low annual household incomes, with about 18% of the respondents reporting a yearly household income of $10,000 to $29,999, and about 9% of the respondents reporting a yearly household income of less than $10,000.

As the sample was not randomly drawn, it may not be representative of the Pacific Islander population in southern California. Table 1 compares the sample characteristics to southern California data from the 2005-2007 Public Use Microdata Sample (PUMS) collected by the U.S. Census (n.d.), which is a 1% sample that was aggregated over the 3 years.[1] Population estimates for Samoan and Guamanian/Chamorro respondents were analyzed using unweighted variables (*N* = 727).[2] Metropolitan area variables for the Los Angeles-Long Beach, Orange County, Riverside-San Bernardino, and San Diego areas were aggregated for the southern California demographic, employment, and family size estimates.

1. http://www.census.gov/acs/www/Products/PUMS/pumsaccuracy_archived.html

2. See http://usa.ipums.org/usa-action/faq.do#ques8. Because the PUMS sample was relatively small, the unweighted population characteristics may not be representative of the larger population in southern California. To test for differences, the weighted population characteristics were calculated and compared with the unweighted population characteristics, and for the most part these variables remained within 1 or 2 percentage points.

TABLE 2. HIV Knowledge

HIV Knowledge Questions (N = 173)	No (% of Total)	Yes(% of Total)	Don't Know (% of Total)
Can someone get HIV by having unprotected sex (sex without a latex condom) with an HIV-infected person?	7%	86% (correct response)	7%
Can someone get HIV by sharing needles for drugs, tattoos, or body piercing?	6%	88% (correct response)	6%
Can using latex condoms help protect someone from getting HIV?	25%	63% (correct response)	12%
Should oil-based lubricants (like Vaseline or baby oil) be used with latex condoms?	53% (correct response)	8%	40%
Can cleaning needles with bleach and water help prevent someone from getting HIV?	53%	13% (correct response)	33%
Can someone in your ethnic group get HIV?	5%	84% (correct response)	12%

Compared with the 2005-2007 PUMS data, the respondents are older, more female, more well educated, more often married, with larger households, more often renting than owning, less often employed, and with lower incomes than the Pacific Islander population as a whole in Los Angeles, Orange, and San Diego counties. Questionnaires completed partially in English and Samoan/Chamorro were counted here as in language (in other words, questionnaires that were partially completed in English and Samoan were counted here as completed in Samoan, and similarly, for Chamorro language respondents).

About 32% of the respondents reported that they had ever been tested for HIV with 11% who identified their race/ethnicity as Chamorro reporting that they had ever been tested for HIV, and about 40% who identified their race/ethnicity as Samoan reporting that they had ever been tested for HIV. Respondents who reported that they had been tested for HIV, on average, had been tested about 2.7 times, and about 4% of those reporting that they had been tested reported that they had been diagnosed with HIV or AIDS. About 23% of the respondents reported that they knew a Pacific Islander with HIV or AIDS, which means that over 75% of respondents did not know a Pacific Islander living with HIV or AIDS. HIV knowledge was low in the respondents surveyed, especially in terms of using latex condoms, not using oil-based lubricants with latex condoms, and cleaning needles with bleach as risk reduction strategies (Table 2).

INTIMATE PARTNER/RELATIONSHIP VIOLENCE

The community needs assessment survey questionnaire also included three questions concerning experience with violence by intimate/relationship partners (Table 3). Substantial proportions of respondents reported that their spouses or partners had ever yelled at them, and about one quarter of the respondents indicated that their spouses or partners had pushed, slapped, or hit them, or thrown something at them. Samoan respondents more often reported that their spouses/partners had ever pushed, slapped, or hit them, or had ever thrown anything at them when compared with Chamorro respondents (using chi-square tests at $p < .05$ level).

TABLE 3. Experience with Domestic Violence

Domestic Violence Questions ($N = 161$)	No (% of Total)	Yes (% of Total)
Has your spouse/partner ever yelled at you?	50%	50%
Has your spouse/partner ever pushed, slapped, or hit you?	75%	25%
Has your spouse/partner ever thrown anything at you?	77%	23%

HIV TESTING: IMPORTANCE OF RACE/ETHNICITY, HIV KNOWLEDGE, AND DOMESTIC VIOLENCE

To explore the association of demographics, HIV transmission knowledge, and domestic violence experience with HIV testing behavior, a multivariate logistic regression model was estimated using HIV testing behavior as the dependent bivariate variable. As about one third of the respondents reported that they had been tested for HIV, this provided an opportunity to clarify the association of different factors with reported HIV testing behavior. Because the primary racial/ethnic groups in the sample were Chamorro and Samoan, respondents self-identifying as these racial/ethnic groups were retained in the model (i.e., 9% of the respondents who reported other race/ethnic backgrounds were not included in the multivariate logistic regression models that follow).

Descriptive statistics were used (chi-square and ANOVA) to select variables from the available demographic characteristics, HIV knowledge, and domestic violence measures already discussed. Several variables were recoded to facilitate interpretation of the results. Two racial/ethnic variables were constructed: (a) a dummy variable that indicated whether respondents self-identified as Chamorro or Samoan and (b) two language dummy variables that indicated which language respondents used to complete the questionnaire, in other words, which language they preferred to use to complete the questionnaire (English, Chamorro, or Samoan). The HIV knowledge questions were recoded as dummy variables (where "don't know" was collapsed into the incorrect responses). A Pearson correlation matrix was constructed of these variables to remove variables that were highly correlated (at the $r = 0.4$ level or greater) to minimize multicollinearity. The final set of variables included in the logistic regression model is listed in Table 4.

The statistical package STATA was used to estimate the logistic regression models. The results are listed in Table 5. Four models were estimated to assess the association of race/ethnicity or preferred language, homeownership, HIV knowledge, and self-reported experience with intimate partner/domestic violence. The model estimates suggested that the most important variables were race/ethnicity, preferred language, and reported having experienced physical violence by an intimate partner.

The first model (A) included preferred language (Chamorro or Samoan, with English as the comparison) and indicated that preferring to complete the questionnaire in Samoan (as compared with English) had the most significant association with reporting receiving an HIV test. Respondents who preferred completing the questionnaire in Chamorro were 0.19 times as likely as those respondents who preferred completing the questionnaire in English to have reported receiving an HIV test. Also important, and almost significant at the $p < .05$ level, was the respondent reporting that her/his spouse had ever hit her/him. The log likelihood for the model was -73.81, with a probability of 0.0066 for the chi-squared measure, and a pseudo $R^2 = .11$ (suggesting that the model was significantly better than an "empty" model).

TABLE 4. Logistic Regression Model Variables

Variable	Description
HIV test (dependent variable)	HIV test = 1 if respondent reported having ever tested for HIV, 0 otherwise
Samoanr	Samoanr = 1 if respondent self-identified race/ethnicity as Samoan, 0 if respondent self-identified race/ethnicity as Chamorro
Chamorro	Chamorro = 1 if respondent completed the questionnaire in Chamorro, 0 otherwise (comparison group is English)
Samoan	Samoan = 1 if respondent completed the questionnaire in Samoan, 0 otherwise (comparison group is English)
Own	Own = 1 if respondent owned her/his home, 0 if the respondent rented
Vaselno	Vaselno = 1 if respondent answered HIV knowledge question about the use of oil-based lubricants with latex condoms correctly, 0 if respondent answered incorrectly or did not know
Spouhit	Spouhit = 1 if respondent reported that her/his spouse or partner had ever pushed, slapped, or hit the respondent, 0 otherwise

The second model (B) included race/ethnicity instead of preferred language, and consistent with the first model (A), suggested that Samoan ethnicity was significantly associated with reporting receiving an HIV test. Samoan respondents were 3.25 times more likely than Chamorro respondents to report that they had received an HIV test. There was also a significant association between reporting receiving an HIV test and reporting experiencing being pushed, slapped, or hit by a spouse/intimate partner, controlling for race/ethnicity, home ownership, and HIV knowledge. Respondents who reported that they had ever been hit by their spouse or partner were 2.6 times more likely to report that they had received an HIV test than respondents who did not report ever being hit by their spouse. The log likelihood for the model was -62.20, with a probability of 0.0099 for the chi-squared measure, and a pseudo R^2 = .09 (suggesting that the model was better than an "empty" model).

The third model (C) included only Chamorro respondents (identified using the race/ethnic variable), and indicated that for Chamorro respondents, the significant association between reporting experiencing intimate partner/domestic violence and reporting receiving an HIV test held. Chamorro respondents who reported that they had ever been hit by their spouse or partner were 14.85 times more likely to report that they had received an HIV test than Chamorro respondents who did not report that they had ever been hit by their spouse or partner. The results must be viewed with caution however because of the small sample (N = 39) and the relatively large number of degrees of freedom (5). The final model (D) used the same variables as the third model (C) but included only Samoan respondents. In contrast to the third model, none of the explanatory variables were significantly associated with reporting receiving an HIV test. Again, however, the results must be viewed with caution because of the small sample (N = 75) and the relatively large number of degrees of freedom (5).

These models suggest a relationship between reporting experiencing domestic violence and HIV testing behavior. What this might also suggest, however, is that respondents who were willing to disclose intimate partner/relationship violence were also willing to disclose being tested for HIV. In other words, as both of these issues (domestic violence and HIV) remain highly stigmatized in the Pacific Islander community, the willingness to disclose either in a community needs assessment survey might be related to disclosure about the other.

TABLE 5. Logistic Regression Results

A. HIVTEST	**Odds Ratio**	***SE***	***Z***	***P*** > |z|	**95% Confidence Interval**	
Chamorro	0.19	0.13	-2.44	0.015	0.05	0.72
Samoan	1.10	0.58	0.19	0.853	0.39	3.10
Own	0.76	0.37	-0.56	0.579	0.29	2.00
Vaselno	1.39	0.60	0.75	0.453	0.59	3.26
Spouhit	2.48	1.16	1.93	0.053	0.99	6.21
Number of obs = 114						
LR χ^2 (5) = 16.08, Prob> χ^2 = 0.0066						
Log likelihood = -63.81; Pseudo R^2 = .11						
B. HIVTEST	**Odds Ratio**	***SE***	***Z***	***P*** > |z|	**95% Confidence Interval**	
Samoanr	3.25	1.71	2.24	0.025	1.16	9.14
Own	0.84	0.41	-0.36	0.718	0.32	2.20
Vaselno	1.43	0.62	0.83	0.404	0.62	3.34
Spouhit	2.60	1.21	2.05	0.040	1.04	6.49
Number of obs = 114						
LR χ^2 (5) = 13.29, Prob >χ^2 = 0.0099						
Log likelihood = -65.20; Pseudo R^2 = .09						
C. HIVTEST (Chamorros)	Odds Ratio	*SE*	*Z*	*P* > |z|	95% Confidence Interval	
Own	2.27	2.42	0.77	0.440	0.28	18.32
Vaselno	1.84	1.97	0.57	0.572	0.22	15.09
Spouhit	14.85	16.78	2.39	0.017	1.62	135.97
Number of obs = 39						
LR χ^2 (5) = 7.59, Prob >χ^2 = 0.0553						
Log likelihood = -12.95; Pseudo R^2 = .23						
D. HIVTEST (Samoans)	Odds Ratio	*SE*	*Z*	*P* > |z|	95% Confidence Interval	
Own	0.53	0.32	-1.07	0.287	0.16	1.71
Vaselno	1.25	0.60	0.46	0.645	0.48	3.23
Spouhit	1.66	0.85	0.99	0.321	0.61	4.52
Number of obs = 75						
LR χ^2 (5) = 2.42, Prob >χ^2 = 0.4890						
Log likelihood = -49.64; Pseudo R^2 = .02						

SUMMARY AND FURTHER RESEARCH

To summarize, there is little understanding of the sources for the HIV disparities experienced by U.S. Pacific Islanders, especially on the U.S. mainland. This article highlighted the results of a recent community needs assessment survey of a convenience sample of Micronesians (specifically Chamorros) and Polynesians (especially Samoans) on HIV knowledge, HIV testing behavior, and experience with intimate partner/domestic violence.

There were two important findings. The first was that there were significant differences between Samoan and Chamorro respondents regarding the frequency of receiving an HIV test. Samoan respondents were much more likely to have reported receiving an HIV test than Chamorro respondents. Further, respondents who

preferred completing the questionnaire in Chamorro were much less likely than respondents who completed the questionnaire in English to have reported receiving an HIV test. This is perhaps not surprising because English speakers of any racial/ethnic background may have access to more HIV prevention and testing information than comparable non-English speakers; however, this challenge appeared to be more severe for Chamorro speakers than for Samoan speakers. The second important finding was that there was a significant and positive association between reporting experiencing intimate partner/domestic violence and reporting receiving an HIV test. Respondents who reported ever being pushed, slapped, or hit by their spouses or partners were much more likely to also report that they had received an HIV test. However, when Chamorro and Samoan respondents were analyzed separately, this significant association between reporting receiving an HIV test and experiencing intimate partner/domestic violence seemed to hold for Chamorro respondents but not for Samoan respondents (these racial/ethnic results, however, should be taken with caution because of the small sample sizes in these race/ethnic specific models).

These findings taken together suggest that Chamorro respondents may be less knowledgeable about, or believe less that they need, HIV testing when compared with Samoan respondents, suggesting that Chamorros may need additional education and information about the need for HIV testing. However, although Samoan respondents reported that they more often had received an HIV test, they also more often reported experiencing intimate partner/domestic violence. The multivariate logistic regression results did not indicate, however, that there was a significant association between intimate partner/domestic violence and HIV testing for Samoan respondents. This might suggest that the association between reporting intimate partner/domestic violence and HIV testing may be specific to particular racial/ethnic groups, and that interventions that might aim to increase HIV testing linked to domestic violence screening might be more effective for Chamorros than for Samoans.

These findings point to needed additional research. First, the results point to a need to conduct further research on the relationship between intimate partner/relationship violence and HIV testing. As suggested earlier in the article, this result might indicate that there is a direct connection between intimate partner/relationship violence and HIV testing, but this might also be an indirect connection (e.g., respondents who were willing to disclose that they had been tested for HIV might also be more willing to disclose that they had experienced intimate partner/relationship violence, or vice versa). There is also a need to further study why this association appeared to be significant for Chamorro respondents, but not for Samoan respondents (who tended to report higher rates of experience with intimate partner/domestic violence). Second, there is a need to further clarify the interethnic differences among Pacific Islander populations in HIV testing behavior. The results indicated that Samoan respondents were more likely to report that they had tested for HIV than Chamorro respondents, controlling for homeownership and HIV knowledge. Additional research is needed to ascertain the sources of these differences to better understand the factors leading to HIV health disparities in this racial/ethnic minority population.

As this was a convenience sample of southern California Micronesians and Polynesians, there are several limitations in the analysis. First, the results may not represent views of the Pacific Islander population on the U.S. mainland, either in southern California or nationally. Second, and related to the first limitation, as the sample was more educated, older, and had lower incomes than the population as a

whole, the results may not be generalizable to U.S. mainland Pacific Islanders. Even with these limitations, however, the data point to a need for more research on the factors that explain HIV testing, and further, the links between HIV testing and intimate partner violence.

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