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Mental Health Status, Need, and Unmet Need for Mental Health Services among U.S. Pacific Islanders

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Abstract

Objective: This study examined the mental health status, need for services, and unmet need of community-dwelling Native Hawaiian and other Pacific Islander (NHPI) adults.

Method: Survey data were collected from 223 NHPI adults of Samoan or Marshallese heritage. Surveys were translated into Samoan and Marshallese using back translation and cultural expert feedback. Participants' severity of depression, anxiety, and alcohol use, plus their perceived need for, and avoidance/delay of, mental health services were obtained. Logistic regressions calculated adjusted odds ratios for past-year: (1) perceived need for services, and (2) avoidance/delay of needed services, controlling for depression, anxiety, and alcohol use.

Results: Participants' screened prevalence of major depression, generalized anxiety disorder, and alcohol use disorder was 21%, 12%, and 22% respectively. Over the past year, 35% and 26% of all participants reported needing services and avoiding/delaying needed services, respectively. Urban Samoan and rural Marshallese participants did not significantly vary in mean depression, anxiety, or alcohol use despite demonstrating significant demographic differences. Female gender and greater familiarity/contact with persons with mental illness significantly predicted greater odds for needing services, and avoiding/delaying services.

Conclusion: Community-dwelling NHPI participants reported heavy burden of depression, anxiety, and alcohol use, and high perceived need for services yet low levels of help-seeking. The large unmet need found in the study sample suggests a gap may exist between service need and engagement in U.S. NHPI communities that could be targeted using culturally tailored approaches that promote engagement in care.

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Introduction

Native Hawaiians and other Pacific Islanders (NHPI) comprise one of only seven federally designated U.S. racial/ethnic groups and are the third fastest growing in size (increasing 40.1% from 2000 to 2010).¹ Although over 1.4 million NHPIs reside in the U.S.¹ and over 10 million in the Pacific Islands,² little is known about NHPIs' health status (e.g., heart disease, cancer) and even less about their mental health—especially among NHPI adults—except they appear to be at high risk for problems such as depression, substance use, and suicide.^{3–9}

Despite this risk, extant data suggest that NHPIs are underrepresented in mental health services.^{3,10–14} For example, national admissions data indicate NHPIs and Asian Americans collectively seek substance use treatment at half the rate of other racial groups (5.3% vs. 10.4% for non-NHPIs and non-Asian Americans) and account for only 1% of admissions¹⁵ despite composing 7% of the U.S. population.¹ In Los Angeles County, which has a large, growing NHPI population of over 65,000,¹ few NHPIs have been reported to enter public treatment (0.09% in 2011, 0.07% in 2015),¹³ and only 4 NHPIs enrolled in a NHPI-specific County integrated care program over a two-year period.¹⁴ Due to NHPI adults' suspected resistance to mental health services and research, we know little about NHPI communities' mental health burden or their need for services.

NHPIs are a diverse racial population consisting of over 15 subgroups originating from the Pacific Islands (e.g., Hawaii, Samoa, Guam). These subgroups share cultural elements that emphasize collectivism, closeness to the natural world, reverence for the past via legends, chants, and storytelling shared over generations, and hierarchical social order led by chiefs or elders. Mirroring indigenous American Indians and Alaskan Natives, NHPI populations have been radically altered by U.S. colonialism. For instance, the U.S. overthrow of the Hawaiian Monarchy caused profound Native Hawaiian cultural loss and continued social, economic, and political marginalization in Hawaii,¹⁶ while the U.S. military's extensive nuclear testing in the Marshall Islands—equaling 7,200 Hiroshima-sized bombs¹⁷— contaminated generations of Marshallese people, lands, and food sources in radioactive fallout.^{17,18} Accordingly, NHPIs suffer from legacies of adverse colonization and historical traumatization that may contribute to heightened mental health risk.

With support from the National Institute of Mental Health, we conducted one of the first studies to quantify the level of mental health status and need among community NHPI adults; aiming to identify the key contributors of NHPIs' perceived need for, and avoidance/ delay of, mental health services to better understand how to engage them in care. We surveyed urban-dwelling Samoans in Los Angeles County as they represent the largest NHPI community in the continental U.S. and rural Marshallese in Northwest Arkansas as they represent the fastest growing community. While all NHPI subgroups share cultural similarities, Samoans and Marshallese are also among the most divergent NHPI subgroups across numerous characteristics that could affect their mental health including immigration patterns/status, colonization experiences, and U.S. context (e.g., urban vs. rural, West vs. South region); rendering them ideal for comparison.

Conceptual Model of NHPI Mental Health Help-Seeking

Because underserved racial/ethnic minority populations are believed to seek help along different pathways than non-Hispanic whites due to their differing cultural factors/context,¹⁹ we drew from existing racial/ethnic minority help-seeking models by Cauce and colleagues¹⁹ and Eiraldi and colleagues²⁰ to create an NHPI-specific conceptual model of mental health help-seeking. Guiding our study, our conceptual model outlined several factors we predicted from existing models and help-seeking literature with non-NHPI populations, coupled with NHPI experts' feedback, may predict NHPIs' perceived need for, and avoidance/delay of services.

Our model posits that an NHPI individual's perceived need for services reflects his/her recognition that he/she has a mental health problem that requires treatment; a recognition labeled "problem recognition" in the help-seeking literature.^{19–21} In our model, NHPI problem recognition (characterized by our perceived need for services variable) may be influenced by a variety of factors including demographics (e.g., age, gender, formal school education),²¹ cultural factors (e.g., nativity and acculturation to the Pacific Islands or U.S.), ^{19,22,23} presence and severity of mental health symptomology, and familiarity with NHPIs with mental health problems.^{19,23,24} Similarly, our model posits these same demographic, cultural, mental health, and familiarity variables will also influence an individual's decision to seek or avoid/delay help; a component of help-seeking distinct from problem recognition. It is important to note that this NHPI help-seeking model focuses on individual and not service system factors (e.g., lack of culturally responsive services), which are likely to interact with our individual-level factors to affect NHPI help-seeking.

This exploratory study's purpose is to characterize community NHPIs' mental health status and need for services. Drawing from existing literature indicating depression and anxiety are the most prevalent mental health problems and alcohol use disorder is the most common substance use problem affecting the U.S. general population,^{25,26} combined with the sparse NHPI mental health literature indicating depression, anxiety, and alcohol use may be problematic in NHPI communities,^{3,5,9} we anticipate screened prevalence of depression, anxiety, and alcohol use will be high in our study sample. But because NHPIs are underrepresented in treatment,^{13–15} we expect: (a) perceived need for mental health services will be low; and (b) many participants will report avoiding or delaying needed services.

Procedures

Procedures were approved by the Institutional Review Board at [redacted]. Data were collected from October 2017-January 2018 from community-dwelling Samoan and Marshallese adults age 18 years or older in Los Angeles County and Northwest Arkansas, respectively. To establish our sampling frame, because our populations were hard-to-reach and therefore probability sampling was not feasible, we systematically applied a non-probabilistic, respondent-driven sampling approach successfully used in prior mental health services research with hard-to-reach minority populations^{27,28} to collect our data. Specifically, to obtain as representative a community sample as possible, we trained community members in research who then purposively recruited participants of varying ages and genders—guided by a preset recruitment table—from diverse settings (e.g., churches of

different denominations, women's groups, cultural organizations for younger NHPIs). Participants were recruited in-person or through referral and completed informed consent and surveys in their preferred language (English, Samoan, Marshallese) via self-report or interview, receiving \$15 gift cards for their time.

Measures

For translation, measures were reviewed by NHPI experts for cultural content validity, translated from English to Samoan and Marshallese by experienced translators, and back-translated to English by additional translators blinded to the original measures. Original and back-translated measures were compared for discrepancies, which were resolved through consensus discussion between investigators, experts, and translators.

Past-year perceived need for mental health services and avoidance/delay of services were determined using two well-established items with strong reliability²⁶ from the Agency for Healthcare Research and Quality's national Medical Expenditure Panel Survey:²⁹ (a) "*In the past 12 months, was there a time when you wanted to talk with or seek help about stress, depression, or problems with emotions*?" and (b) "*Did you delay or not get the care you thought you needed*?"

Demographic and cultural factors of age, gender, formal education, nativity (Pacific Islands vs. U.S.), and acculturation were measured. U.S. nativity was defined as being raised in the U.S. since age four based on feedback from NHPI cultural experts. NHPI and U.S. acculturation levels were measured using the PIACCULT scale,³⁰ a 22- item scale—adapted from the General Ethnicity Questionnaire³¹—shown to associate with many NHPI social and health outcomes.^{32,33} Internal consistency was good for the 11-item NHPI-specific scale (α =.81) and 11-item U.S.-specific scale (α =.83).

Depression symptomology was evaluated via PHQ-9,³⁴ a 9-item tool with strong reliability and validity with diverse cultural groups³⁵ that assesses the past two-week presence of cardinal depression symptoms. Anxiety symptomology was captured via the GAD-7,³⁶ a well-validated 7-item measure of general anxiety symptoms experienced in the past two weeks. The PHQ-9 and GAD-7 are cumulatively scored with a 10-point screening diagnostic threshold for major depressive disorder and generalized anxiety disorder, respectively.^{37–39} Alcohol use was screened with the AUDIT-C,⁴⁰ a widely-used 3-item measure for identifying alcohol-related problems in adults. Scoring is cumulative with diagnostic cutoffs for alcohol use disorder of 4+ for men and 3+ for women. Internal consistencies for the PHQ-9, GAD-7, and AUDIT-C were strong with a's of .86, .88, and .89, respectively.

Familiarity/contact with persons with mental illness was measured via the Level of Contact Report,^{41,42} which presents 12 situations of varying degrees of intimacy with people with severe mental illness (e.g., "*I have a relative with mental illness*"). Participants were rank scored (1–12) by the most intimate situation endorsed^{41,42} ranging from lowest ("*I have never observed a person that I was aware had a severe mental illness*"=1) to highest familiarity/contact ("*I have a severe mental illness*"=12).

Statistical Analyses

Analyses were performed in SPSS v.24.⁴³ Non-normal variables were logarithmically transformed. Descriptive statistics calculated sample frequencies, means, standard deviations, and 95% confidence intervals. Chi-square and independent *t* tests examined Samoan vs. Marshallese differences. Two logistic regression models were run. Dependent variables were past-year need for mental health services and avoidance/delay of needed services. Predictor variables for both models included: (a) age, gender, formal education, nativity, and acculturation, (b) severity of depression, anxiety, and alcohol use, and (c) level of familiarity/contact with persons with mental illness.

Results

Participant characteristics are presented in Table 1. Of 223 NHPI participants ($M_{age} = 40.9\pm16.0$ years), 57% were women and 55% were Samoan. Mean NHPI acculturation exceeded U.S. acculturation (p<0.05). Mean familiarity/contact with persons with mental illness was 5.8±3.7—consistent with working with someone with severe mental illness.

Mean depression and anxiety severity were high and 21% and 12% of participants exceeded the 10-point diagnostic thresholds for major depression and generalized anxiety disorder, respectively—8% of participants exceeded both diagnostic thresholds, suggesting comorbid major depression and generalized anxiety disorder. For alcohol use, 22% of participants (29% of men, 18% of women) met diagnostic thresholds for alcohol use disorder; comorbidity with major depression and generalized anxiety disorder were 4% and 2%, respectively. No gender differences emerged for mean severity of depression and anxiety but men had significantly higher mean alcohol use than women (M=2.27±2.93 vs. 1.18±2.18; t(217)=-0.27, p<0.01).

Over the past year, 35% and 26% of participants reported needing services and avoiding/ delaying services, respectively. Fifty-nine percent of participants screening positive for depression, 54% for generalized anxiety disorder, and 35% for alcohol use disorder reported needing services.

Comparing Marshallese and Samoan subgroups, Marshallese participants were younger with significantly (p<0.05) lower levels of: formal education (e.g., 26% had below high school formal education vs. 4% of Samoans); U.S. nativity (19% vs. 59%); and U.S. acculturation. No significant differences were found for mean depression, anxiety, or alcohol use but Marshallese participants had higher prevalence of needing past-year services (p<0.05) and avoiding/delaying services (p<0.05).

Logistic Regressions

To inform future NHPI service engagement approaches, logistic regressions explored which demographic, cultural, mental health, and other key variables accounted for participants' high past-year perceived need for, and avoidance/delay of, services.

Table 2 presents adjusted odds ratios (AOR) for past-year perceived need for services. For predicting past-year perceived need: (a) women had 4.4 times greater AOR than men

(p<0.01), (b) completing high school and entering college both had 0.2 times lower AORs vs. not completing high school (p<0.05), (c) one-point increase in depression had 1.2 times greater AOR (p<0.05), and (d) one-point increase in mental illness familiarity/contact had 1.2 times greater AOR (p<0.01).

Table 3 presents adjusted odds ratios (AOR) for past-year avoidance/delay of services. For predicting past-year avoidance/delay of services: (a) women had 2.9 times greater AOR than men (p<0.05), (b) completing high school and completing college had 0.1 lower AORs vs. not completing high school (p<0.05), and (c) one-point increase in mental illness familiarity/ contact had 1.3 times greater AOR (p<0.01).

Discussion

As hypothesized, although the presence of depression, anxiety, and alcohol use was high in our study, mental health help-seeking was relatively low. One of every four participants reported avoiding/delaying needed services in the past year; signaling a high degree of community unmet mental health need.

Unsurprisingly, more formal education associated with lower likelihood of avoiding/ delaying needed services, suggesting formal education may be a useful tool for increasing help-seeking among NHPIs. In contrast, female gender and greater familiarity/contact with persons with mental illness associated with greater likelihood for avoiding/delaying services. Accordingly, individuals demonstrating these characteristics may be at especially high risk for having unmet mental health need.

In particular, NHPI women had far greater likelihood of avoiding/delaying services than men despite perceiving a greater need for services. Because many cultures (including NHPIs) are more accepting of women than men expressing emotional distress and using emotion-focused coping,^{19,44} NHPI women may be recognizing the need to seek help for their mental health problems (i.e., problem recognition) more readily than NHPI men, but relying on the greater menu of informal coping options afforded NHPI women (e.g., mobilizing social support, women's groups) in lieu of formal care.

Similarly, while increased contact with persons with mental illness associated with greater perceived need for services, it also associated with greater avoidance/delay of services. We suspect this seemingly contradictory finding may help to explain the push-and-pull pattern noted among our participants, who reported high perceived need but low help-seeking, by suggesting that gaining greater mental health awareness through exposure to persons with mental illness may be a double-edged sword for NHPIs. That is, boosting mental health awareness may make NHPI individuals more aware that their mental health problems require formal help,^{19,22,23} while also making more salient the risk of encountering stigma and discrimination^{45,46} associated with seeking help; thereby suppressing help-seeking. Given that increasing mental health awareness and contact is an important element in many antistigma interventions, further research is needed to clarify the role of mental health stigma and awareness on NHPI help-seeking.

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With regard to NHPIs' mental health burden, while keeping in mind that we did not assess a probability sample, a large number of participants screened positive for major depression, generalized anxiety disorder, or alcohol use disorder. Compared to the U.S. adult general population, participants screened positive at three times the national major depression rate,⁴⁷ over two times the national generalized anxiety disorder rate,³⁷ and four times the national alcohol use disorder rate.^{48,49} Accordingly, our community NHPI populations appear more comparable to clinical primary care populations³⁶ than to the general population.

Yet, not all disorders elicited help-seeking equally as relatively fewer NHPIs who screened positive for alcohol use disorders perceived a need for services compared to NHPIs experiencing major depression or generalized anxiety disorder. While this may in part be due to our perceived need item not specifically referencing alcohol use treatment, some of this discrepancy likely stems from NHPI cultural norms that are generally accepting of risky drinking;^{50,51} possibly leading to lower perceived need by NHPIs for what is considered problem alcohol use in U.S. populations. Unfortunately, because alcohol use disorders have many "downstream" effects including heightened risk for fatal and non-fatal accidents, domestic violence, and suicide,^{52–54} the implications of participants' high screened alcohol use disorder rates but low perceived need for services could have broad social and health consequences for U.S. NHPIs.

Between our Samoan and Marshallese subgroups, no significant differences emerged in their levels of depression, anxiety, and alcohol use despite differences in many of the factors we anticipated might influence their mental health such as age, formal education, nativity, and acculturation. Findings of similar depression, anxiety, and alcohol use problems in these highly divergent NHPI subgroups living in very different parts of the U.S support exploring the mental health needs of other NHPI subgroups (e.g., Native Hawaiians, Chuukese) for commonalities that may inform the development of generalizable interventions for NHPIs.

From our findings, we offer two thoughts for addressing NHPIs' unmet need. First, the high screened rate of alcohol use disorders among NHPI participants coupled with most participants with alcohol use disorders not believing they needed services underscores the importance of tailoring alcohol prevention interventions to NHPIs so fewer services are needed. This may include interventions that combat NHPI myths about alcohol use (e.g., education on normal vs. binge drinking)^{55,56} or train NHPIs to resist alcohol offers from relatives and friends.^{57,58} Second, participants' observed resistance to seeking needed services suggests conventional engagement approaches may not work with community NHPIs. Because the presence of many systems-level barriers (e.g., absence of interpreters) including a lack of NHPI-tailored outreach and engagement likely creates an unwelcoming atmosphere for NHPIs who wish to seek services- thereby contributing to limited NHPI help-seeking-we recommend public-sector settings develop and implement culturally grounded engagement approaches for NHPIs.^{59–61} This may be accomplished by first establishing relationships with NHPI leaders/organizations to access community NHPIs, then training lay NHPIs as community health workers/peer navigators $^{62-64}$ to deliver mental health education and anti-stigma interventions in community settings.

Limitations

As one of the first community studies of NHPI mental health, several limitations exist. First, using respondent-driven sampling to research two hard-to-reach populations may have introduced bias, potentially reducing generalizability of our findings to the overall Samoan, Marshallese, and NHPI populations. Second, we did not screen for all mental health problems that may be affecting NHPIs including substance use disorders and suicide. Third, we did not test all possible model relationships, including the potential relationship between perceived need for services and avoidance/delay of services. Finally, although we carefully prepared our measures for these specific populations, measurement error may exist in symptom under or overreporting. Yet, despite these limitations, we believe our data is compelling since so little is known about NHPI mental health, and their rates of problems in our data appear so high that even with some estimate errors, NHPIs' prevalence of mental health problems are likely to remain elevated relative to the general population.

Conclusions

Our findings reveal considerable mental health burden and high unmet need among individuals from two large NHPI communities. While developing culturally tailored engagement approaches may decrease this unmet need, as our exploratory study is among the first to rigorously quantify this burden within NHPI communities, more research is needed to identify best practices for engaging these underserved communities in care. This includes investigating other community-dwelling NHPI populations and exploring the major service barriers (e.g., stigma) that engagement interventions must address to reduce NHPI communities' heavy unmet need.

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Highlights:

• Little is known about mental health in Pacific Islander communities.

- Pacific Islander participants reported high levels of depression, anxiety, and alcohol use.
- 36% of participants needed services yet 26% delayed the needed services.

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Variables	Total Sam	ple <i>N</i> = 223	Samoan	<i>n</i> = 123	Marshalles	se <i>n</i> = 100	X^2 or t between Samoans and Marshallese	df	N	p value
	%	u	%	u	%	u				
Gender (Female)	57	127	62	76	52	51				
Formal education										
< High school	14	30	4	5	26	25				
High school	44	95	40	49	48	46				
Some college	32	69	39	477	23	22				
College	П	24	17	21	3	3				
Nativity (U.S.)	41	82	59*	65	18^{*}	17	$X^{2} = 34.27$	1	202	p < .05
Needed Care in Past Year	35	78	29*	36	43 *	42	$X^{2} = 4.85$	-	221	p < .05
Avoided/Delayed Care	26	56	20^*	24	33 *	32	$X^2=4.88$	-	218	p < .05
	Mean	SD	Mean	SD	Mean	SD				
Age	40.87	16.01	44.66 [*]	16.68	36.30^{*}	13.93	<i>t</i> = 3.95	214		<i>p</i> <.01
Acculturation										
Pacific Islander	46.25	5.89	46.55	5.55	45.84	6.34				
United States	40.30	7.19	42.82*	5.63	37.02*	7.69	t = 6.40	214		p < .01
Depression (PHQ-9)	5.87	5.10	5.20	4.93	6.72	5.21				
General Anxiety (GAD-7)	4.72	4.38	4.16^{*}	3.92	5.44 *	4.84	t = -2.16	216		p < .01
Alcohol (AUDIT-C)	1.64	2.58	1.81	2.53	1.43	2.64				
Level of Contact	5.83	3.68	5.27	3.69	6.53	3.57				

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PHQ-9 = Patient Health Questionnaire - 9; GAD-7 = Generalized Anxiety Disorder - 7; AUDIT-C = Alcohol Use Disorders Identification Test-Concise

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Table 2:

Logistic regressions for perceived need for mental health services in past year

Variables	AOR	95% CI
	DV = Perceived Need for Mental Health Services	
Demographic		
Age	0.66	0.43-1.01
Gender (reference: Male)		
Female	4.35 **	1.73–10.93 **
Formal education (reference: < High school)		
High school	0.22*	0.06–0.78*
Some college	0.17 *	0.04–0.76*
College	0.32	0.06-1.59
Cultural		
Nativity (reference: U.S.)		
Pacific Islands	0.53	0.18-1.58
Acculturation		
Pacific Islander	1.03	0.95-1.11
United States	0.99	0.95-1.11
Symptoms		
Depression (PHQ-9)	1.18 **	1.05–1.32**
General Anxiety (GAD-7)	0.92	0.80-1.04
Alcohol (AUDIT-C)	1.07	0.90-1.28
Familiarity with Mental Illness		
Level of Contact with Mental Illness	1.23 **	1.09–1.39 **

^{*} p < .05;

** p<.01

AOR = Adjusted Odds Ratio; CI = Confidence Interval; DV = Dependent Variable; PHQ-9 = Patient Health Questionnaire - 9; GAD-7 = Generalized Anxiety Disorder - 7; AUDIT=C = Alcohol Use Disorders Identification Test - Concise

Table 3:

Logistic regression for avoiding/delaying needed mental health services in past year

Variables	AOR	95% CI
	DV = Avoided/Delayed Needed Services	
Demographic		
Age	0.86	0.54-1.39
Gender (reference: Male)		
Female	2.89*	1.03-8.06*
Formal education (reference: < High school)		
High school	0.14 **	0.04–0.55 **
Some college	0.22	0.43-1.07
College	0.14*	0.02–1.01*
Cultural		
Nativity (reference: U.S.)		
Pacific Islands	3.65	0.96–13.84
Acculturation		
Pacific Islander	1.05	0.96-1.15
United States	1.02	0.94–1.10
Symptoms		
Depression (PHQ-9)	1.11	0.99–1.25
General Anxiety (GAD-7)	1.02	0.89-1.17
Alcohol (AUDIT-C)	1.17	0.95-1.43
Familiarity with Mental Illness		
Level of Contact with Mental Illness	1.30***	1.12–1.50 **

p < .05;

** p<.01

AOR = Adjusted Odds Ratio; CI = Confidence Interval; DV = Dependent Variable; PHQ-9 = Patient Health Questionnaire - 9; GAD-7 = Generalized Anxiety Disorder - 7; AUDIT-C = Alcohol Use Disorders Identification Test - Concise

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