



Asian American and Native Hawaiian/Pacific Islander Substance Use and Disparities: Review of Current Evidence and Recommendations for the Field

Andrew M. Subica¹ · Katlyn An² · Scott K. Okamoto²

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Abstract

Purpose of Review This study aimed to describe the current state of the science on Asian American (AA) and Native Hawaiian/Pacific Islander (NH/PI) substance use, covering extant research and treatment knowledge and gaps.

Recent Findings Despite literature gaps, epidemiological studies revealed sizable population-level differences between AAs, who have among the lowest rates of US substance use, and NH/PIs, who have among the highest. Targeted studies identified key challenges affecting NH/PI communities and some AA subgroups, particularly for alcohol, cigarette, and e-cigarette use. Of major concern, both AAs and NH/PIs demonstrate significant treatment disparities.

Summary There is a scarcity of substance use research and interventions specifically targeted for AAs and NH/PIs. Promisingly, a growing body of research is focused on developing/testing culturally targeted interventions for these populations, but more is needed. Recommendations for improving substance use data and intervention research with AAs and NH/PIs—including disaggregating both racial groups and their subgroups—are discussed.

Keywords Asian American · Native Hawaiian/Pacific Islander · Substance use · Substance use disparities · Data disaggregation · Culturally targeted interventions

Introduction

Asian Americans (AA) and Native Hawaiians/Pacific Islanders (NH/PI) compose the two fastest growing US racial groups [1•] yet remain among the most understudied in substance use research [1•, 2] as evidenced by the relative scarcity of AA and NH/PI substance use studies/data and evidence-based substance use programs/services. These empirical and practice gaps pose a major health equity challenge as substance use and substance use disorders (SUD) carry numerous adverse consequences including liver disease, cancer, injury, motor vehicle accidents, fatal overdose, and homelessness [3–5] that may deeply affect AA and NH/PI communities.

Contributing to the lack of AA and NH/PI substance use knowledge is their persistent antiquated aggregation into a monolithic “AAPI” group in health research, data, and policies [6–8]. However, AAs and NH/PIs represent distinct racial groups with unique cultural, historical, socioeconomic, and migratory backgrounds that create striking social and health differences [5]. This has particularly impacted NH/PIs by obscuring their substance use disparities [9, 10] as AAs possess among the lowest rates of substance use of any racial group [3, 11], while NH/PIs display among the highest [1•, 11, 12•, 13]. Accordingly, a review of current evidence/data is needed to clarify the state of substance use in AA and NH/PI populations.

Asian Americans

AAs are highly diverse, comprising over 50 nationalities originating from East Asia, Central Asia, Southeast Asia/Philippines, and South Asia [13]. Since 2000, the AA population has increased by 88% with the overall AA population estimated to quadruple by 2060 [14]. Over half of AAs

✉ Andrew M. Subica
subica@gmail.com

¹ University of California, Riverside, School of Medicine, 900 University Ave, Riverside, USA

² University of Hawai'i Cancer Center, Honolulu, USA

are foreign-born with AAs projected to surpass Hispanic/Latina/os as the largest group of US immigrants by 2050 [14]. Belying the pervasive “model minority” stereotype that AAs universally enjoy unparalleled social, academic, and economic success in the USA [7, 14], many AA subgroups experience social and economic challenges [7] that heighten their SUD risk. For example, the percentage of AAs living below the poverty line matches the US average, while Southeast Asian (e.g., Vietnamese, Hmong) poverty rates exceed the US average [15]. Also, while AAs are commonly viewed as having high educational attainment, 35–40% of Southeast Asians drop out of high school [15]. Thus, AA subgroups vary in educational and socioeconomic, as well as health/mental health outcomes [7], necessitating disaggregated research to accurately capture substance use disparities affecting AA subgroups [6, 8].

AAs have received limited substance use research/attention in part due to the prevailing misperception that AAs possess low substance use risk [3]. This has led AAs to be minimized in substance use diagnoses, treatment, and research [16]. Although AAs overall have lower substance use prevalence than other racial groups [17], AA-specific research has uncovered great diversity in risk with certain subgroups (e.g., Southeast Asians, Koreans) reporting substance use rates equaling those of other at-risk groups. Also, new research suggests AA substance use increased during the COVID-19 pandemic with the incidence rate ratios of AA past-month substance use increasing by 1.3, 3.0, and 17.2 times for alcohol, cocaine, and tranquilizer use vs. Whites, respectively [18]. It was posited this increase may be linked to increasing anti-Asian violence (e.g., verbal harassment, physical assault, shunning) [19] caused by COVID-19 pandemic-related scapegoating/discrimination [18]. Resultingly, 80% of AAs reported not feeling completely accepted in the National 2023 Social Tracking of Asian Americans in the US Index and more than 50% felt unsafe in at least one public space [20]. This increased exposure to discrimination and violence suggests AAs may be at growing risk for substance use and SUDs as they search for ways to cope with the trauma associated with post-COVID-19 racism/discrimination.

Native Hawaiians/Pacific Islanders

NH/PIs are the second fastest growing US racial group and comprise three main subgroups—Polynesians, Micronesians, Melanesians—with Polynesians (e.g., Native Hawaiians, Samoans) and Micronesians (e.g., Marshallese, Chamorro) composing most US-dwelling NH/PIs. Similar to American Indians/Alaskan Natives, NH/PIs have suffered extensive Western colonization and cultural traumatization that contributed to the many social, economic, health, and substance use disparities afflicting current NH/PIs [9, 10, 21–23]. For example, before the Western colonization of

Hawai'i, the Kānaka Maoli (Native Hawaiians) possessed a thriving civilization with strong social, cultural, religious, and governing systems. Following colonization, the Kānaka Maoli population shrank by over half [9, 24]. Today, Kānaka Maoli have the worst health outcomes (e.g., heart disease, COVID-19, mortality) of any group in Hawai'i [25]. Other devastating cultural traumas include the extensive US military nuclear testing in the Marshall Islands from 1946 to 1958 [26, 27] that rendered parts of the Marshall Islands 10 times more radioactive than Chernobyl [28].

Due to these traumas, NH/PIs suffer major social disparities with NH/PIs having among the highest US poverty rates with 18.7% of NH/PIs living below the poverty line versus 10.5% of the US population. Similarly, NH/PIs report higher rates of unemployment and drastically lower levels of educational attainment vs. the US population. Due to these major social and educational disparities and cultural traumas, it is unsurprising that NH/PIs appear to suffer from severe substance use disparities in limited research literature [1•, 12•, 29].

Purpose

To address the gap in AA and NH/PI substance use research/data [30•, 31, 32], this review prioritized evidence from the past 10 years. We describe these current findings on AA and NH/PI alcohol, tobacco, and illicit substance use; discuss treatment gaps; and tender recommendations to improve AA and NH/PI substance use research/interventions.

Although we present AA and NH/PI findings separately where possible, when studies aggregated AAs and NH/PIs, we labeled this combined group “AA-NH/PI.” But given the sizable population size differences between AAs vs. NH/PIs (7.2% vs. 0.5% of the US population; 25), we caution that “AA-NH/PI” data should be generally considered to represent substance use patterns/trends for AAs and not NH/PIs.

Alcohol Use

Alcohol is the most commonly used substance by AAs and NH/PIs. Among AA youth, although alcohol use prevalence is lower than other racial groups [12•], AA youth drinking rates have increased over time in certain subgroups [33]. Using National Survey on Drug Use and Health (NSDUH) data, Kane and colleagues [33] found Filipino and Korean youth had the highest rates of lifetime and current alcohol use of examined AA subgroups with Filipino youth having the highest alcohol use disorder (AUD) rates and Korean youth having the highest prevalence of binge drinking [33]. In comparison, South Asian youth possessed the lowest prevalence of alcohol use, binge drinking, and early alcohol use [33]. An analysis of 25 years of Youth Risk Behavior Survey (YRBS)

data further indicated that AA youth alcohol use was strongly associated with severe health outcomes including 1.5–1.7 times greater odds for serious suicidal thoughts, planning, or attempted suicide [12•], suggesting a potential overlap between alcohol use and psychological distress in AA youth.

Among adults, recent NSDUH data indicate that AA adults have the lowest estimated current (past-month) alcohol use (32.0%), binge drinking (10.7%), heavy alcohol use (1.9%), and underage drinking (6.4%) of all racial groups [34]. However, as South Korean adults have the world's highest rates of liquor consumption due to their strong drinking culture—consuming four times the amount of liquor vs. the average American annually [35]—Korean Americans demonstrate the highest rates of past-month alcohol use (51.8%) and binge drinking (24.6) of AA subgroups [36]. They are followed by Filipino Americans, who display the second highest rates of binge drinking (14.5%) [36] in part due to permissive cultural norms that encourage drinking as a social lubricant in Filipino society/gatherings [37]. These findings underscore the importance of disaggregating AA subgroups to appropriately tailor prevention efforts to high-risk AAs.

Two additional risk factors appear to promote AA problem drinking: nativity/acclimation and racial discrimination. In studies by Iwamoto and colleagues, AA and White young adults reported equivalent rates of heavy alcohol-related problems, while second-generation (US-born) AAs (1) had more mean alcohol-related problems than White young adults (6.13 vs. 5.07 problems) [38] and (2) were more likely than first-generation AAs (foreign-born) to engage in high-risk binge drinking and drinking to cope with psychological distress [39]. In a longitudinal study, exposure to racial discrimination also directly predicted AA young adults' engagement in “drinking to cope” and alcohol-related problems across time [40].

For NH/PIs, alcohol research is limited with older studies focusing on Native Hawaiian youth, who experienced the highest rates of alcohol use, heavy episodic drinking, and alcohol-related consequences of all Hawai'i youth [41–44]. A more recent study of YRBS data confirmed that nationally, NH/PI youth have among the highest prevalence of pre-teen alcohol use (30.3%) and heavy episodic drinking (27.5%) of all racial groups [12•].

In NH/PI adults, up to 22% of community-dwelling adults may have experienced AUD before the COVID-19 pandemic, four times the US rate [45]. During the pandemic, AUDs may have further increased with 27% of community-dwelling adults potentially experiencing AUDs [29]. Alcohol problems are even more pronounced among NH/PI young adults with 56% screening positive for hazardous drinking, 49% for AUD, and 40% for lifetime alcohol-related harms (e.g., finances, health) in one study [46]. Driving their risk, NH/PIs reported major risk factors of life stressors stimulating drinking to cope, heavy peer/social pressure, and permissive social norms

that encouraged NH/PIs to binge drink, and frequent access to alcohol at home/social gatherings [47]. Cultural protective factors included protecting the family's reputation, having family responsibilities that discouraged problem drinking, and religious faith/church involvement [47].

Tobacco

Tobacco use among AAs and NH/PIs is not well-studied and often overlooked in health research/interventions [48•]. For AA youth, YRBS data indicate that relative to White youth, AAs have lower rates of lifetime (41.5% vs. 58.1%), current (13.9% vs. 28.1%), and daily cigarette use (10.2% vs. 21.3%), and lifetime use of smokeless tobacco (3.7% vs. 10.7%) [12•]. In adults, AAs also report modest smoking rates [49] of 9–12% [50, 51], although rates vary by subgroup and gender [52–54]. For example, Korean, Filipino, and Southeast Asian men report higher smoking prevalence and lower quit rates than Chinese men, while AA women report lower smoking prevalence than men [53]. National Health Interview Survey (NHIS) and New York City data further estimated gender differences in smoking prevalence of 4.4–5.0% for women vs. 13.5–18.5% for men [50, 55].

One explanation for AAs' pronounced gender differences is that culturally, smoking among women may be considered socially unacceptable/non-normative in some Asian nations [54, 56]. Accordingly, acculturation may influence AA smoking risk with US-acclimated men less likely to smoke than less-acclimated men, whereas US-acclimated women are more likely to smoke than less-acclimated women [56, 57]. Consequently, as AA smoking varies across genders and subgroups, anti-smoking interventions may not generalize to all AAs, necessitating the development of interventions targeting at-risk AA smokers [55].

Among NH/PIs, evidence suggests they smoke at elevated rates. In national data, 23% and 8% of NH/PI youth reported past 30-day and daily smoking—the third highest smoking rates of any racial group [12•]. In adults, older NSDUH data showed NH/PI adults had high rates of smoking of 24–27% [58], while community surveys during COVID-19 revealed that 22% of adults smoked, significantly eclipsing the 12% US population rate [59]. For NH/PI young adults, another community study indicated that 52% of NH/PI young adults regularly smoke and 20% have nicotine dependence [60]. Unfortunately, NH/PIs appear less likely to quit smoking than other racial groups [61] and report lower motivation to quit, and lower knowledge and use of cessation methods/products [62]. Thus, effective interventions are similarly needed to drive smoking cessation in NH/PI communities [61].

Supporting the development of effective cessation interventions for AAs and NH/PIs are the identification of several

smoking risk/protective factors. Among AA-NH/PI youth/emerging adults, these include holding positive and negative attitudes and expectancies toward smoking, social/environmental factors (e.g., access to tobacco, social pressure, low social support) [risk] [63, 64] and performing physical activity [protective] [48•]. In AAs but not NH/PIs, greater social support was associated with lower smoking while greater sizes of social networks associated with lower smoking for NH/PIs but not AAs [62]. For NH/PI adults, core smoking risk factors in one study included (1) experiencing stress, hostility, and anger; (2) peer/family pressure to smoke; and (3) strong NH/PI cultural smoking norms—providing ideal targets for a culturally responsive cessation intervention [61, 65].

Electronic Nicotine Delivery Systems (ENDS) Use

Beyond cigarettes, some AAs and NH/PIs utilize other tobacco products such as smokeless tobacco and betel nut, which are commonly used in certain Asian and Pacific Island nations. However, the greatest concern stems from electronic nicotine delivery systems (ENDS) such as e-cigarettes, which represent the most prevalent tobacco product used by AA and NH/PI youth [66]. Although ENDS have often been labeled as a positive substitute for cigarette smoking in adults [67], research suggests youth who use ENDS are susceptible to transitioning to smoking and dual use, with ENDS use associating with over 4 times greater odds of trying cigarettes and 3 times greater odds of current smoking [68].

For AAs, California Health Interview Survey data indicate that lifetime use of ENDS is approximately 8.3% among AA youth in California, with AA girls showing higher rates of ENDS use than AA boys of 13.3% vs. 4.0% [69]. However, for AA young adults in California, current ENDS use is significantly greater in men vs. women [70]. Across AA subgroups, differences are also found as Laotian and multiracial Asian youth report the highest ENDS rates (around 16%) and South Asian and Chinese youth report the lowest (around 5%) [69], while Filipino and Vietnamese young adults report two times greater current ENDS use vs. Chinese young adults [70].

For AA adults, national ENDS prevalence ranges from 4 to 6% for lifetime use and 2 to 3% for current use [71] although studies of regional populations have revealed higher rates such as 22% for lifetime use among AA adults in Hawai'i [72] and 44% and 11% for lifetime and current use among young adults in California [73]. Paralleling smoking, gender differences exist with ENDS use appearing to be higher among AA adult men vs. women [73], although for AA youth, girls report greater lifetime ENDS use than boys [69]. Reported AA risk factors for ENDS use include experiencing racial discrimination, curiosity/openness to trying ENDS, and peer influence/exposure [70, 74–76].

For NH/PIs, scarce extant data suggest ENDS use poses a major public health threat. In Hawai'i school data, 33% of Native Hawaiian youth reported current ENDS use, surpassing rates for other Hawai'i racial groups [77]. For NH/PI adults, lifetime and current ENDS use from before COVID-19 were 14% and 5%, respectively, with more men than women reporting current ENDS use (7% vs. 3%) [78]. However, during COVID-19, a large community study with NH/PI adults found greater rates of lifetime and current ENDS use of 17% and 8%, respectively [29]. For NH/PI young adults, one community study also found extremely high rates of lifetime and current ENDS use of 53% and 39%, respectively, and a dual ENDS/cigarette use rate of 38%—exceeding young adult rates from other groups [60]. A growing body of research suggests factors influencing NH/PI ENDS use include greater acceptability of public ENDS use vs. smoking, concurrent marijuana use, and having positive expectancies around ENDS use [60, 79–81].

Importantly, a critical concern affecting AA and NH/PI communities may be their disproportionate exposure to targeted ENDS marketing and advertisements [82]. Targeting these groups in ENDS marketing mirrors past trends of heavy commercial tobacco marketing directed toward AA and NH/PI communities, who have traditionally been viewed by the tobacco industry as a market susceptible to targeted marketing [83•, 84, 85]. Accordingly, given the rise of ENDS use and research linking ENDS use with chronic diseases (e.g., asthma, pulmonary disease, heart disease) [72, 86, 87], additional studies are urgently needed to address the tobacco/ENDS epidemic in AAs and NH/PIs.

Illicit Substance Use

For AAs and NH/PIs, research on illicit substance use is extremely limited. According to 2019 NSDUH data, 4.8% of AA-NH/PIs over 12 years have an SUD with rates of AA-NH/PI illicit drug use at 8.1% for past-year marijuana use, 3.1% for psychotherapeutic drugs, and 1.7% for hallucinogens [88]. While there are many illicit substances, this section will focus on three substances of concern: cannabis, opioids, and methamphetamines.

For cannabis, AA and NH/PI youth display divergent cannabis use patterns with AA youth reporting significantly lower rates of lifetime and current cannabis use vs. White youth—with 11% of AA youth currently using cannabis vs. 25% of NH/PI youth [89]—while NH/PI youth reported higher lifetime and current cannabis use rates vs. White youth [12•]. These differences were confirmed in NSDUH data with past-year cannabis use and cannabis use disorder rates of 5% and 1% for AA youth vs. 12% and 3% for NH/PI youth, respectively [90]. Research suggests several cannabis use protective factors exist for AA youth including

religiosity and perceptions of lower cannabis access and higher parental/peer disapproval vs. White youth [91] although no such known research exists for NH/PIs.

For adults, evidence is mixed with federal data indicating a low 5% prevalence of current (past-month) cannabis use among AAs while NH/PIs report an elevated 17% prevalence, exceeding rates for White adults [13]. However, other federal data indicate that AAs and NH/PIs have lower likelihood of cannabis use and cannabis use disorders than White adults [92]. When NH/PI adults alone were examined in a community study during COVID-19, 10% reported current cannabis use, with 34% reporting lifetime cannabis use [29]. Thus, although cannabis is the most common illicit substance used by AAs and NH/PIs, AA rates appear lower than their White counterparts, while NH/PI rates may be equal or higher across different studies.

Regarding other illicit substances, opioid and methamphetamine use are of grave concern as they are the two leading causes of the US drug overdose epidemic [90] and the major drivers of overdose deaths in states with significant AA and NH/PI populations [93]. For instance, Hawai'i experienced record numbers of overdose deaths in 2021–2022, with many resulting from fentanyl—a synthetic opioid 50 times stronger than heroin [94]—or fentanyl-methamphetamine-other drug combinations [95, 96].

For AA and NH/PI youth, YRBS data indicate that relative to White youth, AA youth have similar lifetime rates of heroin use and lower methamphetamine use, while NH/PI youth have nearly 4 times the rate of lifetime heroin and 1.5 times the rate of lifetime methamphetamine use [12•]; placing NH/PIs at elevated risk for developing opioid use disorders (OUD) in adulthood.

In adults, 2019 NSDUH data revealed low rates of AA-NH/PI past-year use of 1.7% for opioids and > 1% for methamphetamines [88] with a community study of NH/PI adults also finding low rates of current opioid and methamphetamine use of 1% for both substances [29]. Yet, a follow-up study targeting Hawai'i unhoused individuals—driven by community reports of high NH/PI use in this population—found that over 75% of participants were NH/PI and that this population experienced severe rates of current (1) methamphetamine and illicit opioid use (69% and 24%) and (2) methamphetamine use disorders and OUDs (74% and 12%) [97], revealing key pockets of NH/PIs at great overdose risk who are typically overlooked in national and community studies/data.

Nationally, when examining another specialized population of SUD treatment-seeking individuals, prescription opioid use reportedly increased substantially (294%) among treatment-seeking AA-NH/PIs from 2000 to 2012 [98•]. Despite this increase, the treatment-seeking rate for AA-NH/PIs with OUDs was an alarming 1,672% lower vs. the US population (1.2% vs. 19.4%) [99], illuminating

major disparities in unmet treatment need—and concordant overdose risk—in AA-NH/PI communities. Thus, further research is needed to understand and address the understudied opioid and methamphetamine burden affecting AAs and NH/PIs.

Treatment and Research Recommendations

One of greatest obstacles to curtailing AA and NH/PI substance use is the finding that AAs and NH/PIs rarely seek or receive treatment services unless mandated—generating severe treatment disparities in these populations. In prior federal data, AA-NH/PIs seek SUD treatment at half the rate of other racial groups (5.3% vs. 10.4%) and account for only 1% of US treatment admissions [100] despite composing 8% of the US population. However, SUD treatment rates for AAs and NH/PIs appear to be increasing as AA-NH/PI treatment admissions increased 30% vs. non-AA-NH/PIs from 2000 to 2012 [98•], with the greatest increases demonstrated by AA-NH/PI youth (135%), older adults (127%), and low-income adults (230%) [98•].

Consequently, a recommended approach to reducing AA and NH/PI substance use is to design culturally targeted prevention and treatment-seeking interventions that target AAs and NH/PIs' core substance use risk/protective factors and major treatment barriers, respectively, as targeted interventions have been shown to be effective in improving intervention feasibility, utilization, and substance use outcomes for these groups [61, 101, 102, 103•]. For example, developing in-language smoking helplines for AAs are highly effective in engaging AA smokers to quit [104, 105] while other interventions have infused core cultural factors such as cultural/social networks [102], cultural/group learning [103•], and narrative (storytelling) communication strategies [106] for AAs and NH/PIs.

To develop effective substance use prevention interventions, researchers should consider using a risk-protection focused prevention science approach [107, 108•] to target the major risk and protective factors—including their cultural/contextual factors—that promote or inhibit substance use/misuse in AA and NH/PI populations [109], and then adapt existing prevention strategies to address these factors [107, 110–113]. For AA and NH/PI youth, this may involve targeting the vital cultural risk or protective factors that influence substance initiation/use. This approach is exemplified by the *Ho'ouana Pono* prevention curriculum [114], which has been empirically demonstrated to reduce substance use [103•] in NH/PI youth by targeting their key risk factors (e.g., cultural pressure to use) [115].

For AA and NH/PI adults vs. youth, prevention may focus more strongly on problem use, SUDs, and harms vs. substance use. For example, qualitative research indicates that an

effective AUD prevention intervention for NH/PI adults should target NH/PI-identified risk/protective factors of permissive cultural drinking norms, cultural pressure to drink/binge drink, drinking to cope with stress, and family duty [47]. Armed with this knowledge, researchers designed *SPEAR* (*Strategies for Pacific Empowerment and Alcohol Reduction*), a six-session manualized group intervention shaped by NH/PI young adults using a collective CBPR-based decision-making method called citizens' panels [116].

Similarly, to design effective SUD treatment-seeking (vs. prevention) interventions, evidence-based strategies could be tailored to address AA's and NH/PI's core help-seeking barriers. Research suggests major AA barriers include language/access issues, limited problem identification, and stigma-related challenges (e.g., fears of what others would think) [117, 118]. Additionally, Masson et al. [17] found that stigma/shame, family and peer pressure to avoid treatment, and concerns about privacy loss were key barriers for AAs with SUDs, whereas family and peer support for treatment, greater problem recognition of their SUD, and access to culturally/linguistically responsive treatment services promoted treatment-seeking. Therefore, an effective intervention to address SUD treatment disparities could identify the key barriers facing AA and NH/PI populations (e.g., cultural norms, stigma, low trust due to discrimination/racism), and then culturally adapt current evidence-based strategies shown to target these barriers. These may include addressing AA and NH/PI (1) ambivalence toward treatment by adapting motivational interviewing [119, 120] interventions, (2) stigma via anti-stigma [121–123] and educational [124] interventions, and (3) working with/through family members to encourage treatment-seeking in reluctant individuals [125–127]. For example, ongoing research from our team suggests NH/PIs with SUDs would respond positively to an assertive education and engagement community outreach program led by NH/PI community health workers/peers (128, 129).

Conclusion

Substance use research for AAs and NH/PIs lags behind other US racial groups, limiting scientific and public knowledge and awareness of their substance use risks and disparities. As a result of AAs' and NH/PIs' censoring/omission from substance use research/data (30, 31, 32), these groups continue to be perceived as low risk (31, 130)—leading to perpetual underinvestment in AA and NH/PI data, research, and services (131). In response, we recommend researchers take several steps to address this gap that include oversampling AA and NH/PI populations in substance use surveys/research, conducting targeted research with, and reporting data for, at-risk AA and NH/PI subgroups, exploring heterogeneity across subgroups when interpreting research data, and considering

potential sociocultural factors such as immigration, acculturation, low-income, and cultural trauma that may perpetuate AA and NH/PI substance use disparities. Lastly, to reduce disparities in substance use data and treatment for AAs and NH/PIs, community priorities/perspectives should be placed at the forefront of the substance use research agenda by using community-based participatory research approaches to advance the acceptability, implementation, uptake, and impact of resulting data and interventions for AA and NH/PI populations.

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Declarations

Competing Interests The authors declare no competing interests.

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