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Comparing Alcohol Abuse of Native Hawaiian and Pacific Islander College Students to that of Other Racial Groups

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ABSTRACT

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Alcohol abuse is a ubiquitous issue for college students across the United States (U.S.) including Native Hawaiians and Pacific Islanders (NHPI). As compared to their counterparts, NHPI students tend to underutilize university counseling services and have significantly lower retention rates than their White counterparts. Considering that NHPI may be reluctant to go to counseling, their levels of distress and alcohol abuse may have to reach a higher threshold before they seek treatment. This study examined NHPI college students' presenting levels of alcohol abuse both at intake and over time and compared these students to students from other ethnic/racial groups. Data were gathered from the Center for Collegiate Mental Health (CCMH), a practice-research network used by hundreds of college counseling centers across the U.S. Aggregated data from the years 2012-2015 included variables measured by the Standardized Data Set (SDS) and the Counseling Center Assessment of Psychological Symptoms (CCAPS). The data were analyzed using Latent Growth Modeling (LGM) to assess the differences at intake and over time in alcohol abuse and distress across ethnic groups. Results of this study indicated that NHPI college students at college counseling centers had higher levels of alcohol abuse and presenting distress at intake than students from other ethnic/racial groups. However, NHPI did not have significantly different changes in levels of alcohol abuse from session one to session 12 as compared to other students. Implications and directions for further research are also discussed.

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DESCRIPTION OF DISSERTATION STRUCTURE

The following dissertation, *Comparing Alcohol Abuse of Native Hawaiian and Pacific Islander College Students to that of Other Racial Groups*, is comprised of a hybrid format. The format includes a traditional dissertation along with a journal publication layout. Preliminary pages are reflective of university requirements for submission. The dissertation report is comprised as a journal article and conforms to the style and length requirements for submitting research reports to psychology and education research journals. The extended literature review is included as an appendix.

Introduction

According to the 2015 National Survey on Drug Use and Health, 86.4% of people older than the age of 18 in the United States reported that they have consumed alcohol at some point in their life (Results from, 2016). This survey further found that 70.1% of this same group reported drinking in the past year and that 56% drank during the last month. Furthermore, individuals 12 and older involved in binge drinking or consuming four to five or more alcoholic beverages on one occasion, was a concern. They found 66.7 million Americans aged 12 or older who reported binge alcohol use in the past month and 17.3 million who reported heavy alcohol use in the past month. Binge drinkers in that past month represented 24.9 and 6.5 percent of people aged 12 or older, respectively. In the United States, alcohol abuse is a significant health, economic, and social issue. For example, the Centers for Disease Control and Prevention (CDC) estimated that excessive drinking of alcohol is costing the U.S. more than 223.5 billion dollars annually in: lost work productivity (72% of the total cost); health care (11% of total); law enforcement and other criminal justice expenses related to alcohol consumption (9% of total); and motor vehicle crash costs from impaired driving (6% of total) (Excessive drinking, 2018). Three quarters of the costs came from binge drinking.

About 18% of U.S. adults report binge drinking (Excessive drinking, 2018). Of those who binge drink, it is likely that some may have Alcohol Use Disorder (AUD), which the National Institute on Alcohol Abuse and Alcoholism (NIAAA) defines as a "chronic relapsing brain disease characterized by compulsive alcohol use, loss of control over alcohol intake, and a negative emotional state when not using" (Alcohol use disorder, 2017, p. 1). The NIAAA estimates that approximately 6.2% of the U.S. population has this disorder. Given that those who binge drink account for $167.6 billion of the $223.5 billion in costs associated with alcohol

abuse in the U.S., understanding this subset of individuals seems to be particularly important in reducing alcohol-associated costs (Alcohol use disorder, 2017). Even more concerning than the monetary costs associated with alcohol abuse is that excessive alcohol consumption is estimated to kill about 88,000 people in the United States every year (Excessive drinking, 2018). Additionally, the National Institute of Drug Abuse (NIDA) states that alcohol abuse is related to a number of health issues (e.g., cancer, heart disease, and HIV/AIDS), social problems (e.g., drunk driving, violence, stress, poor academic performance, risky sexual behavior, and child abuse), mental illness, and homelessness (Drug abuse and addiction, 2005).

AUD's are often comorbid with more-common mental health disorders such as depression and anxiety (Delgadillo, Böhnke, Hughes, & Gilbody, 2016). Comorbidity of an AUD with another mental health disorder may increase the likelihood of injury and violence, and may have a more negative influence on academic or occupational outcomes than if there was only one disorder (Perron et al., 2011). Previous research also suggests that alcohol abuse can exacerbate and/or mirror depression and anxiety symptoms (Raimo & Schuckit, 1998), and is stable across the general population and clinical samples. In another study, Delgadillo et al. (2016) found that there may be other factors, such as the severity of dependence on alcohol, that significantly influence common mood disorder symptoms (i.e., increased depressive rumination and anxiety associated with cravings). Ultimately, research indicates that alcohol abuse is a complicated issue that interacts with many contextual factors such as age, environment, gender, and severity of alcohol abuse. Furthermore, over the past decade, psychological difficulties related to alcohol abuse has also been documented among younger crowds, particularly college students (Denering & Spear, 2012; Dick & Hancock, 2015; Perron et al., 2011).

Alcohol Abuse Among College Students

Alcohol abuse is a persistent health challenge for college students nationwide (Dick & Hancock, 2015). Pro-drug culture can be seen as the norm in many college campuses where alcohol abuse is viewed as an acceptable and harmless rite of passage (Denering & Spear, 2012; Perron et al., 2011) . Several studies show that college students are at higher risk for binge drinking than their same-age peers who are not in college (e.g., Barnes, Welte, Hoffman, & Tidwell, 2010; Reckdenwald, Ford, & Murray, 2016; Wechsler & Nelson, 2008). In addition, based on their 2014 national survey, the National Institute on Alcohol Abuse and Alcoholism (NIAAA) reported that almost 60 percent of 18-22 year old college students drank alcohol in the past month, and nearly two thirds of these students engaged in binge drinking during that same time frame (College drinking, 2017). The NIAAA also reported that 20% of college students meet criteria for AUD. Similarly, Caldeira et al. (2009) found that nearly half (47%) of all college students meet criteria for an alcohol (or marijuana) use disorder at least once in the first three years of college. Finally, the Substance Abuse and Mental Health Services Administration (SAMHSA) stated that 39% of students report that they are binge drinkers (Results from, 2012).

In conjunction with these alarming statistics, there is abundant evidence of the dangerous consequences linked with alcohol abuse amongst college students. Specifically, alcohol abuse is associated with an increase of sick days and poor health, decreased academic performance and graduation rates, legal consequences, unwanted sexual encounters, injury, vandalism, property damage, involvement with the police, assault, suicide, and death (Arria et al., 2013; Hingson, Zha, & Weitzman, 2009; Okoro et al., 2004; Wechsler & Nelson, 2008). For example, it is estimated that each year about 1,825 college students between the ages of 18 and 24 die from alcohol-related unintentional injuries including motor-vehicle crashes (College drinking, 2017).

Due to the prevalence of alcohol abuse and risks associated with such abuse among college students, college campuses typically provide treatment and resources for alcohol abuse through counseling centers. In addition to these alarming statistics, mental health issues can be significantly associated with excessive drinking among college students. For instance, O'Hare and Sherrer (2000) found that college students used alcohol to cope with stress even though it worsened symptoms of stress and anxiety. In other words, they reported that the abuse of alcohol increased their long-term levels of stress, depression, and anxiety in spite of the temporary relief they feel when using alcohol. Hence, college students may become involved in a negative cyclical pattern of coping with stress through alcohol abuse. In the same study with college students, gender mediated the effects of the alcohol abuse; meaning, women had significantly less likelihood of being heavy drinkers than men (O'Hare & Sherrer, 2000). While there is some research on alcohol abuse differences in college students based on gender, there seems to still be a lack of information specifically regarding college students of color and alcohol abuse (Pokhrel & Herzog, 2014). Finding helpful resources and additional support for college students of color experiencing difficulties with alcohol abuse have received some attention in recent years (Terry, 2013; Xiao et al., 2017). One of these resources can possibly be university counseling centers.

University Counseling Centers Addressing Alcohol Abuse Among Students of Color

College counseling centers are designed to help a wide-variety of students with a range of presenting concerns (Hayes et al., 2011; Xiao et al., 2017). Among the concerns that many college counseling centers address is alcohol abuse (Matthews, Schmid, Goncalves, & Bursley, 1998; Terry, 2013). For example, Matthews et al. (1998) mention that many colleges and universities now have alcohol addiction specialists on the staff or are closely affiliated with the counseling center. In addition, Terry (2013) found that screening and brief intervention for

college students struggling with alcohol abuse significantly reduced drinks per week. Furthermore, all participants showed reductions in peak blood alcohol concentrations, heavy drinking episodes, and alcohol related problems at one and two-month follow-up assessments. While these studies broadly indicate how counseling centers can best help students deal with alcohol abuse, there are several studies that specifically examine alcohol abuse amongst college students of color (Denering & Spear, 2012; Pokhrel & Herzog, 2014). Research in multiculturalism and alcohol will continue to increase based on the trends of the past decades (Kraft, 2011).

Kraft (2011) explained that the college mental health field has been growing in sophistication of health education in the past 40 years. He further described that education efforts have expanded in prevention, mental health, alcohol abuse issues, and multicultural competency. Illustrating this, Denering and Spear (2012) conducted a study with over 6,700 college students who were screened and diagnosed with AUD. They conducted a brief intervention with these students to reduce binge drinking and alcohol abuse. Denering and Spear (2012) confirmed that screening and brief intervention (SBI) strategies for students of color is an effective evidence-based treatment (EBT) for binge drinking and drug use (e.g., marijuana).

Creating and testing EBTs that are specific to alcohol-related issues with students of color in college settings is important. Doing so improves the supportive resources for these students because it gives them a practical option when they are ready to seek help. Although college counseling centers showed efficacy, or a decrease of binge drinking during treatment, many students of color choose not to seek help (Caldeira et al., 2009; Denering & Spear, 2012). There are several theories for why this may be for each ethnic group.

Watts and Wright (1984) and Crawford (2013) looked at African American clients who struggle with alcohol abuse, and how interconnected racial microaggressions were negatively associated with the client's perception of the therapeutic working alliance. These microaggressions were also negatively associated with the therapist's multicultural counseling competence, and ultimately made African American clients less likely to come back to therapy. In another study, Kearney, Draper, and Barón (2005) found that Hispanic/Latino clients struggling with alcohol abuse may also carry negative beliefs about therapy. These beliefs may be due to stigma and can be linked to a subsequent underutilization of therapy on college campuses. These clients are also more likely to seek help from family or religious community members rather than sharing private information with outsiders. Finally, Root (1998), Kearney et al. (2005), and Yeh, Hsu, Mittmann, Litt, and Geisner (2016) observed that alcohol abuse among Asian American clients can often increase when therapists are more process-oriented rather than focusing on problem-solving methods. However, one growing racial diverse group that has not been extensively studied in this area is Native Hawaiian and Pacific Islanders (NHPI).

NHPI College Student Alcohol Abuse and Counseling Services

The U.S. Census Bureau originally grouped NHPIs and Asian Americans together in 1960 when Hawaii first became a state, but has made efforts to separate them since the year 2000 (2010 census shows more, 2012). By combining NHPIs and Asian Americans together, the impression was given that their cultures, traditions, languages, religions, and people are similar, which is problematic and erroneous (Allen & Heppner, 2011; Allen, Kim, Smith, & Hafoka, 2016). Once data were collected in this way, there was little researchers could do to separate these groups when analyzing data. As such, there is a scarcity of research specifically on Native Hawaiian and Pacific Islander (NHPI) college students' alcohol abuse across the entire social

science field, particularly in areas of psychological health and multicultural psychology (Allen & Heppner, 2011; Allen & Smith, 2015; Allen, Cox, et al., 2016; Allen, Kim, et al. 2016). However, in the last decade, studies have been conducted in the Midwest and Hawaii that seek to remedy this issue.

There are two studies of particular note that are specific to NHPI college students. First, Pokhrel and Herzog (2014) studied how historical trauma among Native Hawaiian (NH) college students in a community college influenced their substance use, including alcohol abuse. In regard to trauma, they found that 81% of NH community college students think about the loss of their ancestral land, 87% about the loss of their native language, and 66% about the loss of self-respect due to poor treatment by government officials at least once a year. Additionally, 75% of the participants reported experiencing ethnic discrimination in some form on at least one occasion.

Pokhrel and Herzog (2014) found "the most common reported forms of everyday ethnic discrimination included being treated by others with less courteously, with less respect, as being less intelligent, and as not as good" (p. 425-426). The authors explained that these experiences, which are mediated by a heightened sense of discrimination, were significantly associated with an increase in substance use as well as alcohol consumption. Therefore, traumatic experiences and higher perceived discrimination due to their NH identity, played a significant role in the alcohol abuse behavior of the college students.

In the second study, Allen, Cox, et al. (2016) sought to investigate NHPI college student psychotherapy outcomes, and focused specifically on Polynesian Americans, which sample consisted of mostly, Samoan, Tongan, and Hawaiian college students. They found that these Polynesian American college students reported higher levels of alcohol abuse compared with

African American, Hispanic/Latino, and Asian American college students. This sample of Polynesian American college students was also more likely to report at least one parent with alcohol abuse concerns as compared to other ethnic groups.

The authors found that there were a variety of factors that could possibly be linked to Polynesian American college students' elevated levels of alcohol abuse. These were: family conflicts; criminal activity and/or gambling problem; physical abuse within the family; higher levels of ethnic/racial discrimination; problems adjusting to the university; reading or study skills problems; test, speech, or performance anxiety; time management issues; academic, schoolwork or grade issues; poor concentration; homesickness; distress; anxiety; and depression. These students also reported higher levels of rape, sexual assault, or unwanted sex as compared to White college students. Finally, higher levels of irritability, anger, or hostility were also present among Polynesian American college students.

Despite the considerable issues, including alcohol abuse, with which Polynesians presented during therapy, they appeared to significantly underutilize mental health services as compared to their White peers (Allen, Cox, et al., 2016). Although Polynesian American college students had the same likelihood of initially utilizing counseling services, they were more likely than White students to end therapy early (Allen, Cox, et al., 2016). Allen, Cox, et al. (2016) hypothesized that the low retention rate may be due to a sense of stigma associated with seeking help for emotional struggles outside of the family. Seeking help may bring shame and dissatisfaction within the family, along with a sense of personal weakness. Allen and Smith (2015) also suggested that relying on collectivistic coping strategies, such as family support and religiosity/spirituality, may be more culturally appropriate for Polynesian American students rather than seeking professional help.

Purpose of the Study

The purpose of this study was to expand the work of Allen, Cox, et al. (2016) and Pokhrel and Herzog (2014) in several ways. First, where the previous studies obtained data from only one university counseling center, the current study utilized a national sample drawn from hundreds of university counseling centers. Second, this study included Polynesians including NHs, as well as Pacific Islanders from the other two Pacific Oceanic regions, Micronesia and Melanesia (Allen, Cox, et al., 2016). Third, this study focused specifically on alcohol abuse, while the previous studies explored alcohol abuse as part of more general studies (e.g., general mental health). Finally, the current study explored change in alcohol abuse rates over time, whereas previous researchers only had initial intake data and limited data points for time in counseling.

Research Questions

The following questions were addressed in this study:

1. Are there differences between NHPI college students and other ethnic/racial college students in presenting levels of alcohol abuse in college counseling centers?

2. Are there differences in alcohol abuse rates between NHPI college students and other ethnic/racial students over the course of 12 sessions in college counseling centers?

3. Can anxiety and depression scores from the CCAPS-34 accurately predict alcohol abuse among NHPI college students?

Method

Participants

Participants were identified from an existing data set, compiled by the Center for Collegiate Mental Health (CCMH), a practice-research network. The data was collected between

2012-2015 and came from 156 university counseling centers across the United States as well as from other organizations willing to provide mental health information about college students (Center for collegiate, 2012). Participants included in the data set had filled out basic demographic information from the Standardized Data Set (SDS) and had provided mental health outcome data through the Counseling Center Assessment of Psychological Symptoms (CCAPS) (Center for collegiate, 2012). Demographic information for this data set is included in Table 1.

For the current study, students who selected NHPI as their ethnicity on the SDS were of particular interest. NHPI participants included in the data set (n=452) self-reported as 61% female, 37% male, and 1% transgender, with 1% missing data. The average age was 22.1 ($SD =$ 5.1) with 2% missing data. In terms of relationship status, 60% reported being single, 30% were in a committed relationship, 4% were married, and 2% were in another relationship status, with 4% missing data.

Measures

Standardized Data Set. The Standardized Data Set (SDS) was developed by CCMH and is used upon intake by participating counseling centers (Center for collegiate, 2012). There are no reliability or validity data estimates for the SDS as it was designed to obtain demographic information. The SDS includes a comprehensive set of basic demographic items such as age, gender, ethnicity, class standing, sexual identity, and religion. The SDS also includes independent versions of the measure for clients, therapists, and counseling center. For the purposes of this study, ethnicity was the primary independent variable. Additionally, variables of socioeconomic status (SES), age, and gender identity were utilized as covariates in the analysis. Estimating SES was completed using a 5-point Likert scale question from the SDS which asked,

"How would you describe your financial situation while growing up?" Response

categories to this question range from "1 - Always stressful" to "5 -Never stressful."

Table 1

CCMH Participant Demographics (N=256,242)

Ethnicity	Size *n* (percent of N)	Mean age (*sd*)	Number Female (*valid percent*)	Mean SES** (*sd*)
Total Sample	256,242 (100%)	22.2 (*5.4*)	139,830 (62.5%)	3.4 (*1.3*)
African American	20,007 (7.8%)	22.3 (*5.9*)	13,574 (69.1%)	2.9 (*1.3*)
Asian American	14,242 (5.6%)	22.5 (*4.7*)	8,556 (61.5%)	3.3 (*1.2*)
Hispanic/Latino	16,340 (6.4%)	22.3 (*5.2*)	10,516 (5.4%)	2.9 (*1.3*)
White	149,335 (58.3%)	21.9 (*5.2*)	90,367 (61.4%)	3.5 (*1.2*)
Native Hawaiian/Pacific Islander (NHPI)	452 (.2%)	22.0 (*5.1*)	276 (61.5%)	2.8 (*1.3*)
Other*	13,650 (5.4%)	22.3 (*5.5*)	8,278 (61.6%)	3.1 (*1.3*)
Missing	42,216 (16.5%)	5294 (2.1%)	32,448 (12.7%)	145,142 (56%)

*"Other" includes participants who were dropped from the model due to non-convergence. This includes participants who marked their racial or ethnic identity as "American Indian or Alaskan Native", "Multi-racial", or "Self-identify"

**SES was estimated by a single 5-point Likert scale question asking, "How would you describe your financial situation while growing up?" with 1 = "Always stressful," and 5 = "Never stressful"

Counseling Center Assessment of Psychological Symptoms-62. The CCAPS-62 is a multidimensional assessment of psychological symptoms specifically designed for college populations (Locke et al., 2012) . The CCAPS-62 is primarily administered upon intake rather than every session, due to length of time required to fill it out, and the breadth of the questionnaire. The CCAPS-62 includes eight subscales (alcohol abuse, depression, generalized anxiety, social anxiety, academic distress, eating concerns, hostility, and family distress) as well as a general distress index. The substance use subscale contains questions about using drugs or alcohol more than one should, black-out symptoms due to alcohol abuse, enjoyment associated with being drunk, and regrets due to events related to drinking. Some of the substance use

questions are "I drink alcohol frequently," "When I drink alcohol I can't remember what happened," "I drink more than I should," and "I have done something I have regretted because of drinking." Locke et al. (2012) found the results from the CCAPS-62 to be reliable, with consistency alphas ranging from .78 to .91 across subscales, and test-retest reliability ranging from .78 to .92 and .76to .91 between one week and two-week test—retest correlations respectively. Moreover, validity measures show the responses to the CCAPS-62 have significant Pearson product-moment correlations between every subscale and referent measures (Locke et al., 2012).

Counseling Center Assessment of Psychological Symptoms-34. The CCAPS-34 was derived and shortened from the CCAPS-64 for more frequent administration and practicality purposes (Locke et al., 2012). The CCAPS-34 can be administered to clients upon subsequent visits in contrast with the CCAPS-64, which is generally administered only upon intake. The CCAPS-34 excludes the substance use question - "I use drugs more than I should," but retains all other questions pertaining to alcohol abuse. The CCAPS-34 also excludes the entire subscale of family distress. The CCAPS-34 has a general distress index that takes all seven subscales and creates a general measure of distress. The anxiety (generalized) and depression CCAPS-34 subscales are comprised of nine questions and 13 questions respectively. The anxiety subscale has questions like, "my heart races for no good reason," "I feel tense," "my thoughts are racing," and "there are many things I am afraid of." The depression subscale includes questions such as, "I lose touch with reality," "I feel worthless," "I have unwanted thoughts I can't control," "I feel sad all the time," and "I have thoughts of ending my life." Neither the CCAPS-62 nor the CCAPS-34 assesses for withdrawal, tolerance, legal issues, or failure to fulfill responsibilities.

Using a national sample of 233,615 participants, Locke et al. (2012) concluded that the responses to the CCAPS-34 are reliable, with internal consistency alphas ranging from .78 to .92 across subscales (substance use=.83, depression=.89, and generalized anxiety=.83), and test-retest reliability ranging from .78 to .92 and .76 to.91 for one week and two-week test-retest correlations, respectively. Additionally, responses to the CCAPS-34 were found to be valid, with significant Pearson product-moment correlations between subscales with the same referent measures (Locke et al., 2012). For the purposes of this study, the CCAPS-34 rather than the CCAPS-64 was used because the current study was designed to assess change over multiple sessions, which is not captured by the CCAPS-64.

Procedures

CCMH requires clients willing to be a part of the research database to sign consent forms and complete demographic information and distress level surveys and measurements (i.e., SDS, CCAPS-34, and CCAPS-62). All data is de-identified to protect confidentiality throughout the process. Once the data was received from CCMH, it was stored on a password-protected device with up-to-date firewall security. The data was analyzed and viewed only by the principle author and committee members who had signed data user agreement forms with CCMH.

Data Analysis

Once we received the data from CCMH, we exported it to and cleaned it in SPSS (Version 23; IBM Corp., 2014). We then converted the data file to a .inp file to be analyzed in Mplus (Version 6; Muthen & Muthen, 1998). We ran preliminary analyses before the primary model analysis in order to check for measurement invariance. We completed invariance testing by comparing chi-square tests of difference and fit statistics between configural, metric, and scalar invariance models.

Based on descriptive statistics, the total session number for clients had a range from one to 132. The median session number was two, with a mean of 4.14 and a standard deviation of 6.18. Only 6.4% of the sample attended therapy longer than 12 sessions; therefore, a majority of clients had no data past 12 sessions. To compensate for the disproportionate amount of missing data beyond 12 sessions, we did not include sessions beyond this point.

The cutoff was set at 12 sessions for two reasons. First, anything more than 12 sessions resulted in non-convergence due to the amount of missing data. Second, research suggests that 12-18 sessions allows for significant change in half of clients (Hansen, Lambert, & Forman, 2002; Harnett, O'Donovan, & Lambert, 2010). Additionally, there is evidence that clients are helped by fewer sessions than counselors feel they need (Tryon, 1999; Harnett et al., 2010). Finally, college counseling centers often have high client demand with limited staff (Weatherford, 2017) and are, therefore, unable to provide students with therapy that lasts more than 10 to 12 sessions. Consequently, for questions one and two, a 12-session cutoff was used, which provided enough variance for the model to converge.

We analyzed the first and second research questions consecutively, using a latent growth model (LGM) approach for alcohol abuse over the course of 12 therapy sessions. We fixed NHPI as the reference group for ethnicity, and included estimated SES, gender, and age as covariates in the model. It was necessary to exclude some subgroups from the model (i.e., Native American, multiracial, transgender, and other [self-identify]) due to model non-convergence, potentially caused by inadequate sample size in these groups.

We analyzed the third question by assessing NHPI anxiety and depression intake scores and looking at the main effect of anxiety and depression on NHPIs alcohol abuse scores in subsequent sessions. There was quite a bit of missing data for clients with greater than three

sessions due to using only the NHPI sample (n=452). After several trials of analysis, the number

of sessions included was limited to three due to non-convergence when including sessions

greater than three.

We analyzed effect sizes for the initial intake distress level (intercept), the rate of change

in distress scores due to treatment over time (slope), and the differences between NHPI as

compared to the other ethnic groups. To compute effect sizes, we calculated the effect of

treatment for each ethnic group by multiplying the slope estimates by the number of sessions

(i.e., 12 and 3). We then calculated the difference of this effect between the ethnic groups of

interest (i.e., Whites, NHPIs, African Americans, Hispanic/Latinos, and Asian Americans) and

divided by the pooled variance. We calculated pooled variance by averaging and then square-

rooting the estimated covariances for each dependent variable across all sessions. The reported

effect sizes can be conceptualized similarly to Cohen's *d*, representing a difference in the

standard deviations between treatment effects. The effect size range was interpreted using scales

for effect: small (.2), medium or moderate (0.5), and large (.8) (Cohen, 1992).

Results

Model Invariance

In order to ensure that the observed indicators measure the same theoretical constructs,

Wang and Wang (2012) suggest comparing chi-square tests of difference and fit statistics

between pattern (configural), factor loading (metric), and scalar invariance (scalar) models. This

method is called testing measurement invariance. The suggested fit statistic cutoffs for

invariance testing are: a value no higher than 0.06 for the root mean square error of

approximation (RMSEA; Hu & Bentler, 1999); a value no higher than 0.08 for the standardized

root mean residual (SRMR; Hu & Bentler, 1999; Kline, 2015); and no less than 0.9 for the

comparative fit index (CFI; Bentler, 1990) and Tucker-Lewis (TLI; Tucker & Lewis, 1973).

Additionally, Wang and Wang suggest that at least three of these four fit estimates meet the

recommended cutoff in order for the model to be acceptable. The process of invariance testing is

included below.

Configural invariance. First, configural invariance was checked for alcohol abuse. The

result was an RMSEA value of 0.016, which was well within the recommended limits. The

resulting CFI value was 0.888, and TLI had a value of 0.877. Though these values were slightly

below recommended cutoff value of 0.90, given the large size of the dataset and complexity of

the model, we justified these values as indicating a good enough model fit to move forward. The

resulting RMSEA value of 0.143 was well above the suggested cutoff of .08; however, as the

other three values were within acceptable limits, invariance testing was continued.

Metric invariance. The model was next assessed for metric invariance by changing the

factor loadings to be constrained across time. This yielded a model with an RMSEA value of

0.015, a CFI value of 0.888, a TLI value of 0.881, and an SRMR value of 0.146. Similar to the

configural invariance model, there appeared to be good RMSEA fit, close CFI and TLI fit, and

poor SRMR fit.

Scalar invariance. Finally, scalar invariance was assessed by constraining the intercepts

of each item to be the same across time. This yielded a model with an RMSEA value of 0.013, a

CFI value of 0.881, a TLI value of 0.877, and an SRMR value of .144. Again, the model fit for

scalar invariance was similar to that of the metric and configural models. As detailed above, all

invariance models met only the suggested cutoff for RMSEA values; however, the CFI and TFI

values for all models, thought below 0.9, were approaching by .02-.03. All fit statistics are

included in Table 2. Further examination of model fit limitations is included in the discussion section.

Table 2

Fit Statistics for Invariance Testing

Invariance Model	RMSEA	CFI	TLI	SRMR	Δ RMSEA	Δ CFI	Δ SRMR
Configural	0.016	0.888	0.877	0.143	-	-	-
Metric	0.015	0.888	0.881	0.146	0.001	<-0.001	0.003
Scalar	0.013	0.881	0.877	0.144	0.002	-0.007	-0.002

*CFI change between models > .010 indicate model noninvariance

Chi-square test of difference for invariance models. After running these models, a chi-square test of difference was completed between metric and configural invariance models, as well as scalar and metric invariance models, using the adjusted values suggested by Muthen and Muthen (1998) from the Mplus output. Each chi-square test rendered significantly low p-values (<0.000). This indicates that the most general model (configural) is the best between the three.

However, it is generally understood that having a large enough sample will introduce high rates of type I error when comparing models via chi-square analysis. Therefore, Chen's (2007) suggestion of comparing CFI, RMSEA, and SRMR fit difference between models was utilized in order to inform our model decision process.

Latent Growth Model

A latent growth model (LGM) is an analysis that allows for a way to handle longitudinal data with a latent variable approach. LGMs provides several advantages in its analysis including: (a) allowing for flexibility in the functional form, (b) allowing for complex error structures to be easily specific, (c) providing a natural way for the latent intercept and slope to predict variables, (d) allowing for parallel processes, and (e) allowing for the traditional fit statistics (Wang & Wang, 2012). Although there are many other forms of analysis that may mimic some of these

same procedures, LGM is a natural method for longitudinal data and is a dominant preference in the counseling psychological field (Martens & Haase, 2006).

Question one. After testing for model invariance, the latent growth model was run including sessions 1-12. The analysis yielded a model with an RMSEA value of 0.014 ($p = 1$), a CFI value of 0.884, a TLI value of 0.881, and an SRMR value of 0.081. The intercept estimate for African Americans was –0.154, indicating that, on average, the alcohol abuse score for African Americans is 0.154 units less than the alcohol abuse score for NHPIs. The effect size was small ($d = 0.183$), meaning the magnitude of difference between NHPIs and African Americans was small. The intercept estimate for Asian Americans was –0.169, indicating that on average, the alcohol abuse score for Asian Americans is 0.169 units less than NHPIs at intake. The effect size was small at $d = 0.201$. The intercept estimates for Hispanics/Latinos was –0.046 and 0.057 for whites; however, these numbers were not significant. Estimated SES (–0.007, $p = 0.015$), age (–0.003, $p = <.000$), and gender (0.173, $p = <.000$) were all significant predictors for the intercept.

Question two. The slope estimate for NHPIs was –0.025, meaning that on average, NHPI alcohol abuse scores decreased 0.025 points per session. As mentioned in the methods section, the effect size was calculated using the pooled standard deviation and using the distance of the first and last time of alcohol abuse. The beta slope estimate for African Americans was 0.015 ($p = 0.296$), implying that NHPI alcohol abuse scores decreased at a rate of 0.015 points per session more than African Americans. However, this was not significant, suggesting that NHPI rate of change in alcohol abuse across sessions does not vary significantly compared to African Americans. Furthermore, the beta slope estimates for Asian Americans ($\beta = 0.016$, $p = 0.28$, $d = 0.228$), Hispanic/Latino ($\beta = 0.003$, $p = 0.821$, $d = 0.043$), and Whites ($\beta = 0.002$, $p = 0.904$, $d =$

0.028) when compared with NHPIs were all not significant as well. However, age ($\beta = -0.001$, $p = <.000$) and gender ($\beta = -0.009$, $p = <.000$) were both significant predictors for the slope of NHPI, though SES ($\beta = 0.001$, $p = 0.2$) was not.

      Question three. Intercept and slope estimates for anxiety and depression predicting alcohol abuse were assessed in a three-session latent growth model for NHPIs. The intercept estimate for anxiety was -0.134 and 0.116 for depression. The beta estimates for slope were -0.089 for anxiety and -0.017 for depression. However, both intercept and slope estimates were statistically insignificant ($p > .05$) meaning anxiety (-0.134, $p = 0.106$) and depression (0.116, $p = 0.102$) do not predict alcohol abuse in this model. See Table 3 for more detailed estimate information, and Figure 1 for a graphical representation of the slopes and intercepts.
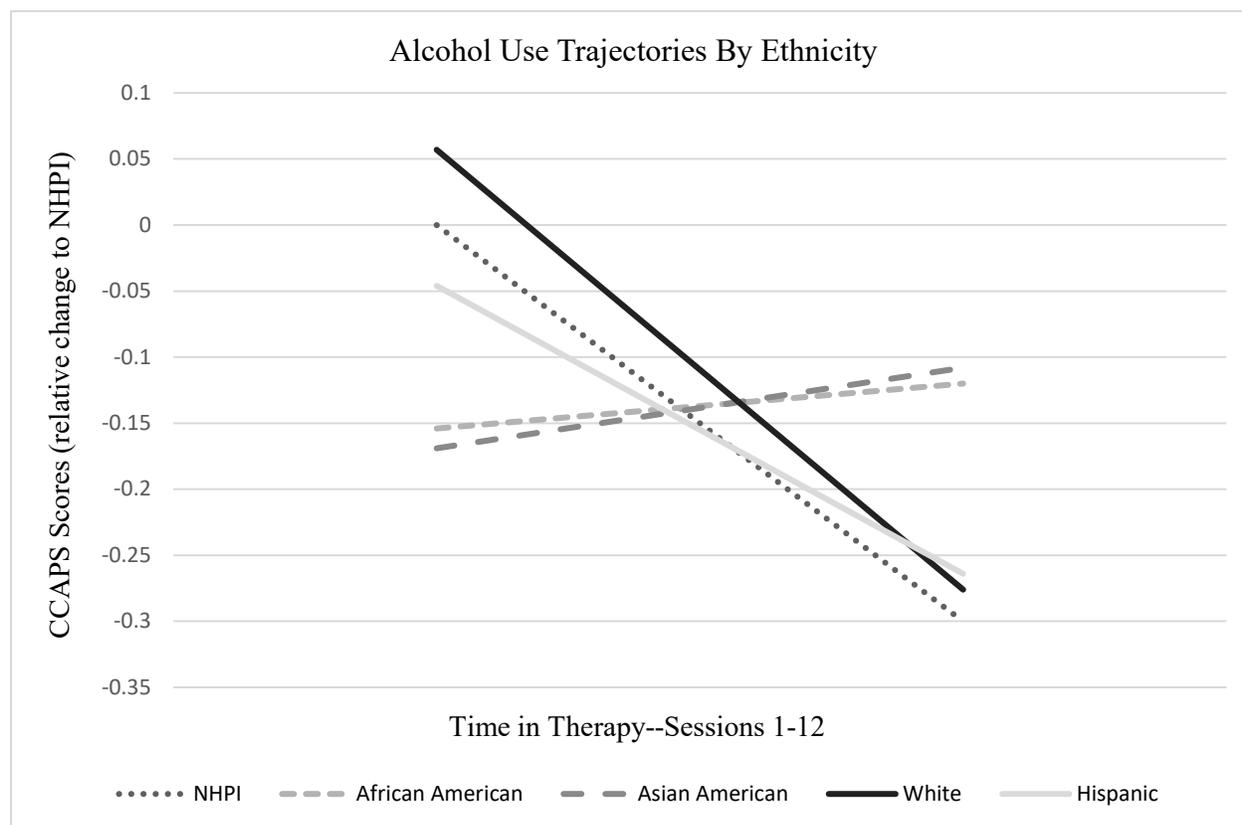
Figure 1. Alcohol abuse trajectories by ethnicity. The x-axis shows sessions 1-12 by ethnicity.

The y-axis shows alcohol abuse scores. Besides Whites, NHPIs had the highest presenting

alcohol abuse at intake and greatest decrease in alcohol abuse by session 12.

Table 3

Latent Growth Model Values

Intercept (Alcohol Abuse)	Estimate	Std Beta	P-value	Effect size
NHPI (Reference Group)	0	-	-	-
African American	-0.154	0.052	0.003	0.183
Asian American	-0.169	0.052	0.001	0.201
Hispanic/Latino	-0.046	0.052	0.379	0.055
White	0.057	0.052	0.266	0.068
Age	-0.003	<0.000	<0.000	-
SES	-0.007	0.003	0.015	-
Gender (male)	0.173	0.005	<0.000	-

Slope (Change in Use)	Estimate	Std Beta	P-value	Effect size
NHPI (Reference)	-0.025	0.015	-	-
African American	0.015	0.015	0.296	0.214
Asian American	0.016	0.015	0.280	0.228
Hispanic/Latino	0.003	0.015	0.821	0.043
White	0.002	0.015	0.904	0.028
Age	-0.001	<0.000	<0.000	-
SES	0.001	0.001	0.200	-
Gender (male)	-0.009	0.001	<0.000	-

Intercept	Estimate	Std Beta	P-value	Effect size
Depression	0.116	0.102	0.256	-
Anxiety	-0.134	0.106	0.210	-

Slope	Estimate	Std Beta	P-value	Effect size
Depression	-0.017	0.104	0.394	-
Anxiety	-0.089	0.101	0.866	-

Discussion

This study compared Native Hawaiian and Pacific Islander college students' alcohol

abuse to that of African American, Asian American, Hispanic/Latino, and White college students

who attended therapy at college counseling centers across the U.S. Data were collected between 2012 and 2015 from 156 unique college counseling centers. We conducted latent growth modeling in order to investigate differences in alcohol abuse levels (intercept) and change in alcohol abuse across 12 sessions of therapy (slope). In addition, due to the high comorbidity between alcohol abuse and anxiety and depression, we examined anxiety and depression as possible predictors of alcohol abuse.

The first research question examined potential differences between ethnic groups in alcohol abuse reported at intake, or the first session of therapy. The results indicated significant differences between NHPIs and African Americans as well as between NHPIs and Asian Americans, with alcohol abuse being significantly higher for NHPIs than African Americans and Asian Americans. Although it should be noted that the effect size was small. This finding supported Allen, Cox, et al. (2016) that NHPI college students report higher rates of alcohol abuse than other racial groups. Furthermore, these results support findings that Asian American college students have lower alcohol abuse when compared to their ethnic peers (Chen, 2007; Results from, 2012). . Lum, Corliss, Mays, Cochran, and Lui (2009) suggested this could be because Asian Americans have a cultural social stigma against alcohol abuse which may act as a protective factor. Given that NHPIs and Asian Americans have been historically grouped together in psychological research (Allen & Heppner, 2011; Allen, Cox, et al., 2016), it is particularly important to understand that Asian American and NHPI college students have statistically different levels of alcohol abuse. If grouped together, it may be falsely assumed that their concerns regarding alcohol abuse are the same. Hispanic/Latino(a)s and Whites, when compared with NHPIs, did not have significant differences in reported alcohol abuse in the first session.

The second question investigated potential differences of alcohol abuse distress between racial groups and across time in therapy. The results of the analysis indicated no significant differences between NHPIs and all other groups. However, it is worthy to note that all groups (including NHPIs), except African American and Asian Americans, saw a decrease in alcohol abuse over the course of therapy (i.e., sessions 1-12). Therefore, NHPIs' alcohol abuse decreased as much as Whites and Hispanic/Latino(a)s as they continued in therapy. This is an important finding given that NHPIs have a lower attendance and retention rate for therapy than other ethnic groups (Allen, Cox, et al., 2016). NHPI's could be improving their alcohol abuse distress as quickly as any other racial ethnic group if they came in for therapy. The university counseling resources and help are available; however, additional understanding is needed to address the increased alcohol abuse and attrition rates among NHPIs.

The third question explored whether or not depression and anxiety predict substance use. O'Hare and Sherrer (2000) found that alcohol abuse is a common maladaptive coping strategy for anxiety and depression. Additionally, Allen, Cox, et al. (2016) found test anxiety to be higher for Polynesian American college students than for White college students. This study investigated whether the CCAPS-34 anxiety or depression scores predicts higher or lower alcohol abuse over time. The results indicated that anxiety and depression were not significant predictors of alcohol abuse in NHPIs. However, due to convergence issues, this relationship was only explored across the first three sessions. Therefore, the non-significance may only be a result of lack of power and not enough data. Further research is needed in order to make more accurate conclusions.

Overall, the results of this study seem to indicate that NHPIs use of alcohol declines at the same rate as that of other ethnic/racial groups over the course of therapy. This is important to

note, especially since NHPIs often come into therapy with more alcohol abuse than other ethnic groups. Accordingly, NHPI college students may be struggling with alcohol more severely than other ethnic groups, and yet, they may have the potential to improve as much as students in other ethnic groups. These findings are also important in considering the potential physical, mental, and emotional health factors among NHPI college student populations who struggle with alcohol abuse issues. Alcohol abuse may be increasing risks for NHPI's physical, mental, and emotional health during a critical stage of college life.

Implications

As this study has shown, more research specific to NHPI populations is needed. There are very few research articles on the NHPI population. To our knowledge, this article is one of the first concerning NHPI alcohol abuse. Additionally, our study shows the benefit of further parceling out ethnic groups in research. Our results showed that Asian Americans and NHPIs were vastly different in terms of alcohol abuse distress and parceling the two allowed for precise measurements. Rather than being grouped with other ethnic groups (generally Asian Americans), NHPIs should be studied as their own ethnic group. The more this occurs, the more confident researchers can be in their findings specific to NHPIs.

Allen, Cox, et al. (2016) have shared their list of suggestions for college counseling centers when serving NHPI students. For example, they suggest learning more about the Polynesian Americans' cultural context and being culturally sensitive to these students, gaining knowledge of their specific cultural coping strategies and applying them in session, and understanding Polynesian Americans' strong cultural identity. Additionally, focusing on alcohol abuse, counselors may benefit from learning about culturally appropriate interventions pertaining to substances of the NHPI population (e.g., kava). Learning more about NHPI's values, culture,

worldview, and cultural identity may help improve the therapeutic alliance through trust and connection and may ultimately lower alcohol abuse and distress. These techniques are valuable because the results of this study show that NHPIs have the likelihood for significantly elevated alcohol abuse at session one *and* are just as likely to have improvement, or a decrease in alcohol abuse as well as other ethnic groups.

There are several ways professionals in the field may help in this area. First, therapists who specifically treat NHPI populations can aid this process by opening their practices for research purposes. Second, professionals can use our research to recognize the importance of carefully capturing each NHPI client's experience through their cultural context, rather than fostering possible stereotypical, generalized biases. Third, researchers and educators can focus on creating experiences for all students that invite serious self-reflection on NHPI ethnic and cultural awareness concerning alcohol abuse. This can be done through a variety of means, such as inviting guest speakers, providing case studies and journals, or other technological options for enhancing the educational experience. Finally, therapists and other practitioners can carefully work to understand understudied NHPI clients struggling with alcohol abuse to strengthen therapeutic alliance through culturally sensitive clinical practice. Understanding NHPI culture pre-treatment will help facilitate trust and connection with NHPI clients struggling with alcohol abuse. Replacing conjecture and assumptions regarding NHPIs with valid and accurate empirical data and expert perspective can be accomplished through an increased effort of all specializations, including researchers, educators, and clinicians in the field.

Limitations

An initial goal of this study was to avoid grouping dissimilar ethnicities in order to respect and recognize the unique differences in culture, language, rituals, and philosophies. Ro

and Yee (2010) explain that research among Asian Americans and NHPI populations need to be parsed out, but thus far, there is "little to no research that accounts for the ethnic diversity within these two populations" (p. 776). While the dataset utilized for this study allowed for separation between Asian American and NHPI populations, parsing the NHPI group into those from Micronesia, Melanesia, and Polynesia would not have been possible due to a lack of further identifying information and small sample size. Despite this, we believe that future research that can parse out such groups will be of great value.

The marginal fit statistic values might also be considered a limitation. The measurement invariance models and latent growth model all failed to reach the recommended cutoffs for three of the four primary fit estimates. While several of the estimates were close to the recommended cutoff scores (e.g. CFI/TLI values of .88), they ultimately did not reach the threshold considered by many to be a minimum standard of good fit. This may have been due to the complexity of the models, (e.g. multiple sessions measured across several racial groups), but it also could be that the items analyzed did not measure the intended hypothetical construct. Though some may still consider measurement invariance to be a weakness of the study, based on the suggestions of previous researchers (see Barrett, 2007, and Hayduk et al., 2007) the author deemed these values to be adequately close to recommended levels.

Our inability to explore the role of anxiety and depression in predicting substance use across more than three sessions was another limitation. When attempted with more than three sessions, the model did not converge, again suggesting possibilities of not enough data, improper measurement constructs, or model complexity (e.g. too many variables across too many sessions with too much missing data for the analysis to be able to compute). Because of this, the null-significant results from our third analysis are brought into question and should be interpreted

with heavy caution. Results from the first two questions should additionally be interpreted with caution. However, in a field where the current research is nearly non-existent, they may also be considered noteworthy—if not still preliminary—and suggests a need for replications and greater NHPI representation in the future research.

Conclusion and Future Research

NHPI college students have not received much attention in the professional literature. Results of this study are informative in several ways. NHPI college students come into therapy with higher levels of alcohol abuse than other ethnic groups but improve in therapy similarly to other ethnic groups as indicated by decreases in their alcohol abuse and distress. Possible steps for university counseling center professionals could be to increase NHPI cultural sensitivity and additional support with alcohol abuse. However, it is important to acknowledge that solutions are not so clear cut or concrete in implementation as they are when discussed theoretically. Since previous research has shown stigma, cultural traditions to counsel exclusively with close community members, and other factors that prevent NHPI college students from coming to therapy, more research should be further examined and addressed in this area for NHPIs struggling with alcohol abuse. College counseling centers and researchers should continue to encourage NHPI college students struggling with alcohol abuse to attend counseling. Our results show therapy is just as effective as it is for other ethnic groups in helping lower alcohol abuse distress with NHPI college students. Future research with the NHPI college student population concerning alcohol abuse must continue in order to improve services for and knowledge about this population and their specific needs.

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APPENDIX

Review of Literature

According to the 2015 National Survey on Drug Use and Health, 86.4% of people older than the age of 18 in the United States reported that they have consumed alcohol at some point in their life (Results from, 2016). This survey further found that 70.1% of this same group reported drinking in the past year and that 56% drank during the last month. Furthermore, individuals 12 and older involved in binge drinking or consuming four to five or more alcoholic beverages on one occasion, was a concern. They found 66.7 million Americans aged 12 or older who reported binge alcohol use in the past month and 17.3 million who reported heavy alcohol use in the past month. Binge drinkers in that past month represented 24.9 and 6.5 percent of people aged 12 or older, respectively. In the United States, alcohol abuse is a significant health, economic, and social issue. For example, the Centers for Disease Control and Prevention (CDC) estimated that excessive drinking of alcohol is costing the U.S. more than 223.5 billion dollars annually in: lost work productivity (72% of the total cost); health care (11% of total); law enforcement and other criminal justice expenses related to alcohol consumption (9% of total); and motor vehicle crash costs from impaired driving (6% of total) (Excessive drinking, 2018). Three quarters of the costs came from binge drinking.

About 18% of U.S. adults report binge drinking (Excessive Drinking, 2018). Of those who binge drink, it is likely that some may have Alcohol Use Disorder (AUD), which the National Institute on Alcohol Abuse and Alcoholism (NIAAA) defines as a "chronic relapsing brain disease characterized by compulsive alcohol use, loss of control over alcohol intake, and a negative emotional state when not using" (Alcohol use disorder, 2017, p. 1). The NIAAA estimated that approximately 6.2% of the U.S. population has this disorder. Given that those who

binge drink account for $167.6 billion of the $223.5 billion in costs associated with alcohol abuse in the U.S., understanding this subset of individuals seems to be particularly important in reducing alcohol-associated costs (Alcohol use disorder, 2017).. Even more concerning than the monetary costs associated with alcohol abuse is that excessive alcohol consumption is estimated to kill about 88,000 people in the United States every year (Excessive Drinking, 2018). Additionally, the National Institute of Drug Abuse (NIDA) states that alcohol abuse is related to a number of health issues (e.g., cancer, heart disease, and HIV/AIDS), social problems (e.g., drunk driving, violence, stress, poor academic performance, risky sexual behavior, and child abuse), mental illness, and homelessness (Drug abuse and addiction, 2005).

AUD's are often comorbid with more-common mental health disorders such as depression and anxiety (Delgadillo, Böhnke, Hughes, & Gilbody, 2016). Comorbidity of an AUD with another mental health disorder may increase the likelihood of injury and violence, and may have a more negative influence on academic or occupational outcomes than if there was only one disorder (Perron et al., 2011). Previous research also suggests that alcohol use can exacerbate and/or mirror depression and anxiety symptoms (Raimo & Schuckit, 1998), and is stable across the general population and clinical samples. In another study, Delgadillo et al. (2016) found that there may be other factors, such as the severity of dependence on alcohol, that significantly influence common mood disorder symptoms (i.e., increased depressive rumination and anxiety associated with cravings). Ultimately, research indicates that alcohol abuse is a complicated issue that interacts with many contextual factors such as age, environment, gender, and severity of alcohol abuse. Furthermore, over the past decade, psychological difficulties related to alcohol abuse has also been documented among younger crowds, particularly college students (Denering & Spear, 2012; Dick & Hancock, 2015; Perron et al., 2011).

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Alcohol Use Among College Students

Alcohol abuse is a persistent health challenge for college students nationwide (Dick & Hancock, 2015). Pro-drug culture can be seen as the norm in many college campuses where alcohol abuse is viewed as an acceptable and harmless rite of passage (Denering & Spear, 2012; Perron et al., 2011). Several studies show that college students are at higher risk for binge drinking than their same-age peers who are not in college (e.g., Barnes, Welte, Hoffman, & Tidwell, 2010; Reckdenwald, Ford, & Murray, 2016; Wechsler & Nelson, 2008). In addition, based on their 2014 national survey, the National Institute on Alcohol Abuse and Alcoholism (NIAAA) reported that almost 60 percent of 18-22 year old college students drank alcohol in the

past month, and nearly two thirds of these students engaged in binge drinking during that same time frame (College Drinking, 2017). The NIAAA also reported that 20% of college students meet criteria for AUD. Similarly, Caldeira et al. (2009) found that nearly half (47%) of all college students meet criteria for an alcohol (or marijuana) use disorder at least once in the first three years of college. Finally, the Substance Abuse and Mental Health Services Administration (SAMHSA) stated that 39% of students report that they are binge drinkers (Results from, 2012).

In conjunction with these alarming statistics, there is abundant evidence of the dangerous consequences linked with alcohol abuse amongst college students. Specifically, alcohol abuse is associated with an increase of sick days and poor health, decreased academic performance and graduation rates, legal consequences, unwanted sexual encounters, injury, vandalism, property damage, involvement with the police, assault, suicide, and death (Arria et al., 2013; Hingson, Zha, & Weitzman, 2009; Okoro et al., 2004; Wechsler & Nelson, 2008). For example, it is estimated that each year about 1,825 college students between the ages of 18 and 24 die from alcohol-related unintentional injuries including motor-vehicle crashes (College Drinking, 2017). Due to the prevalence of alcohol abuse and risks associated with such abuse among college students, college campuses typically provide treatment and resources for alcohol abuse through counseling centers. In addition to these alarming statistics, mental health issues can be significantly associated with excessive drinking among college students. For instance, O'Hare and Sherrer (2000) found that college students used alcohol to cope with stress even though it worsened symptoms of stress and anxiety. In other words, they reported that the abuse of alcohol increased their long-term levels of stress, depression, and anxiety in spite of the temporary relief they feel when using alcohol. Hence, college students may become involved in a negative cyclical pattern of coping with stress through alcohol abuse. In the same study with college

students, gender mediated the effects of the alcohol abuse; meaning, women had significantly less likelihood of being heavy drinkers than men (O'Hare & Sherrer, 2000). While there is some research on alcohol abuse differences in college students based on gender, there seems to still be a lack of information specifically regarding college students of color and alcohol abuse (Pokhrel & Herzog, 2014). Finding helpful resources and additional support for college students of color experiencing difficulties with alcohol abuse have received some attention in recent years (Terry, 2013; Xiao et al., 2017). One of these resources can possibly be university counseling centers.

Reasons for alcohol abuse. Researchers have hypothesized reasons for alcohol use in college students. Kieffer, Cronin, and Gawet (2006) gave several enticing environmental and social reasons for drinking alcohol: meeting new friends, partying, increasing social lubrication, reducing anxiety, and having romantic happenstances. They also share another factor of reducing psychological and emotional distress due uniquely to the results of the stressful academic college environment and developmental adjustments of college life (Kieffer et al., 2006; Novak, Burgess, Clark, Zvolensky, & Brown, 2003). Specifically with ethnic alcohol abuse, Mailey (2012) gives an example of reducing distress through alcohol and marijuana. She found Black self-hatred, or the tendency for individuals to hate themselves because of their race, to be a significant predictor of alcohol abuse for African American college students and the strongest predictor of lifetime marijuana use. She hypothesized this could be due to those struggling with Black self-hatred may be more likely to turn to alcohol abuse as a coping method. She states that another possibility is that those who abuse alcohol feel guilty and then blame their race for their alcohol abuse. Mailey (2012) also found that African American women are more likely to use alcohol when they scored higher on Anti-White attitudes, suggesting that women who have negative opinions toward Whites are more likely to drink alcohol than their peers.

Ethnic minority alcohol abuse. Relatively few researchers have examined the effect of alcohol abuse on ethnic minority college students' (McCabe et al., 2007). However, research in the past decade have published on alcohol abuse issues with African American (Mailey, 2012; Stolberg, 2009), Hispanics/Latinos American (McCabe et al., 2007; Ratanasiripong, Burkey, & Ratanasiripong, 2009), Asian American (Ratanasiripong et al., 2009; So & Wong, 2006), Native American (Greenfield, 2016), and Native Hawaiian college students (Pokhrel & Herzog, 2014). The SAMHSA reports Asian Americans college students had the lowest consumption levels for alcohol in regular, binge, and heavy use (Results from, 2012). Hispanic/Latinos reported having higher rates of alcohol abuse and issues arising from the alcohol abuse when compared to African Americans and Asian American students (McCabe et al., 2007). Ratanasiripong et al. (2009) found Hispanic/Latinos to report significantly higher stress levels than White students which may influence patterns of alcohol abuse. To our knowledge, there is only two studies to date exploring the relationship of ethnic difference in college alcohol abuse specific to Native Hawaiian and Pacific Islanders (NHPI) (Allen, Cox, et al., 2016; Pokhrel & Herzog, 2014). Due to the growing issue of substance abuse in colleges, universities have counseling centers to help aid in the recovery, psychoeducation, and support of the alcohol abuse issue.

University Counseling Centers Addressing Alcohol Use Among Students of Color

College counseling centers are designed to help a wide-variety of students with a range of presenting concerns (Hayes et al., 2011; Xiao et al., 2017) . Among the concerns that many college counseling centers address is alcohol abuse (Matthews, Schmid, Goncalves, & Bursley, 1998; Terry, 2013). For example, Matthews et al. (1998) mention that many colleges and universities now have alcohol addiction specialists on the staff or are closely affiliated with the counseling center. In addition, Terry (2013) found that screening and brief intervention for

college students struggling with alcohol abuse significantly reduced drinks per week. Furthermore, all participants showed reductions in peak blood alcohol concentrations, heavy drinking episodes, and alcohol related problems at one and two-month follow-up assessments. While these studies broadly indicate how counseling centers can best help students deal with alcohol abuse, there are several studies that specifically examine alcohol abuse amongst college students of color (Denering & Spear, 2012; Pokhrel & Herzog, 2014). Research in multiculturalism and alcohol will continue to increase based on the trends of the past decades (Kraft, 2011).

Kraft (2011) explained that the college mental health field has been growing in sophistication of health education in the past 40 years. He further described that education efforts have expanded in prevention, mental health, alcohol abuse issues, and multicultural competency. Illustrating this, Denering and Spear (2012) conducted a study with over 6,700 college students who were screened and diagnosed with AUD. They conducted a brief intervention with these students to reduce binge drinking and alcohol abuse. Denering and Spear (2012) confirmed that screening and brief intervention (SBI) strategies for students of color is an effective evidence-based treatment (EBT) for binge drinking and drug use (e.g., marijuana).

Creating and testing EBTs that are specific to alcohol-related issues with students of color in college settings is important. Doing so improves the supportive resources for these students because it gives them a practical option when they are ready to seek help. Although college counseling centers showed efficacy, or a decrease of binge drinking during treatment, many students of color choose not to seek help (Caldeira et al., 2009; Denering & Spear, 2012). There are several theories for why this may be for each ethnic group.

Watts and Wright (1984) and Crawford (2013) looked at African American clients who struggle with alcohol abuse, and how interconnected racial microaggressions were negatively associated with the client's perception of the therapeutic working alliance. These microaggressions were also negatively associated with the therapist's multicultural counseling competence, and ultimately made African American clients less likely to come back to therapy. In another study, Kearney, Draper, and Barón (2005) found that Hispanic/Latino clients struggling with alcohol abuse may also carry negative beliefs about therapy. These beliefs may be due to stigma and can be linked to a subsequent underutilization of therapy on college campuses. These clients are also more likely to seek help from family or religious community members rather than sharing private information with outsiders. Finally, Root (1998), Kearney et al. (2005), and Yeh, Hsu, Mittmann, Litt, and Geisner (2016) observed that alcohol abuse among Asian American clients can often increase when therapists are more process-oriented rather than focusing on problem-solving methods. However, one growing racial diverse group that has not been extensively studied in this area is Native Hawaiian and Pacific Islanders (NHPI).

Ethnic minorities. Researchers and therapists are concerned with the underutilization, low retention rates, and quality of therapy in university counseling centers with ethnic populations (Allen, Cox, et al., 2016; Kearney et al., 2005). A lack of awareness in multicultural issues that have been previously has been ignored may continue to lead to underutilization of counseling services by minorities. Some researchers propose this underutilization is due to acculturation difficulties, institutional barriers, fears of stigma, lack of counselors with the same ethnicity as them, lack of multicultural training among therapists, and cultural norms (e.g. preference for exclusive counseling within the family rather than mental health services) (Hayes et al., 2011; Kearney et al., 2005). For example, Root (1998) discussed the probability of Asian

American clients dropping out of therapy increases when therapists are more processed-oriented rather than focusing on problem-solving methods. The combination of these barriers may postpone the decision to attend therapy for so long that the client's level of presenting distress and presenting substance use problem is greater than the White population. One growing ethnic minority group that has not been extensively studied in this area is Native Hawaiian/Pacific Islander.

Therapy utilization. There are therapy utilization studies for many different ethnic groups (e.g., White, African American, Asian American, Hispanic) going to therapy for alcohol issues. For example, Watts and Wright (1984) and Crawford (2013) have looked at African American clients struggling with alcohol and how racial microaggressions were negatively associated with the client's perception of the therapeutic working alliance and therapist's multicultural counseling competence, and ultimately made them less likely to come back to therapy. Additionally, Kearney et al. (2005) explained that Hispanic/Latino clients struggling with alcohol may carry negative beliefs about therapy due to stigma and the importance of seeking help from family or religious community members rather than sharing private information with outsiders and may be less likely to utilize therapy. Finally, Root (1998), Kearney et al. (2005), and Yeh et al. (2016) discussed the probability of Asian American clients struggling with alcohol use dropping out of therapy increases when therapists are more process-oriented rather than focusing on problem-solving methods. However, one growing ethnic minority group that has not been extensively studied in this area are Native Hawaiian and Pacific Islanders.

NHPI College Student Alcohol Use and Counseling Services

The U.S. Census Bureau originally grouped NHPIs and Asian Americans together in 1960 when Hawaii first became a state, but has made efforts to separate them since the year 2000 (2010 census shows more, 2012). By combining NHPIs and Asian Americans together, the impression was given that their cultures, traditions, languages, religions, and people are similar, which is problematic and erroneous (Allen & Heppner, 2011; Allen, Kim, Smith, & Hafoka, 2016). Once data were collected in this way, there was little researchers could do to separate these groups when analyzing data. As such, there is a scarcity of research specifically on Native Hawaiian and Pacific Islander (NHPI) college students' alcohol abuse across the entire social science field, particularly in areas of psychological health and multicultural psychology (Allen & Heppner, 2011; Allen & Smith, 2015; Allen, Cox, et al., 2016; Allen, Kim, et al. 2016). However, in the last decade, studies have been conducted in the Midwest and Hawaii that seek to remedy this issue.

There are two studies of particular note that are specific to NHPI college students. First, Pokhrel and Herzog (2014) studied how historical trauma among Native Hawaiian (NH) college students in a community college influenced their substance use, including alcohol abuse. In regard to trauma, they found that 81% of NH community college students think about the loss of their ancestral land, 87% about the loss of their native language, and 66% about the loss of self-respect due to poor treatment by government officials at least once a year. Additionally, 75% of the participants reported experiencing ethnic discrimination in some form on at least one occasion.

Pokhrel and Herzog (2014) found "the most common reported forms of everyday ethnic discrimination included being treated by others with less courteously, with less respect, as being

less intelligent, and as not as good" (p. 425-426). The authors explained that these experiences, which are mediated by a heightened sense of discrimination, were significantly associated with an increase in substance use as well as alcohol consumption. Therefore, traumatic experiences and higher perceived discrimination due to their NH identity, played a significant role in the alcohol abuse behavior of the college students.

In the second study, Allen, Cox, et al. (2016) sought to investigate NHPI college student psychotherapy outcomes, and focused specifically on Polynesian Americans, which sample consisted of mostly, Samoan, Tongan, and Hawaiian college students. They found that these Polynesian American college students reported higher levels of alcohol abuse compared with African American, Hispanic/Latino, and Asian American college students. This sample of Polynesian American college students was also more likely to report at least one parent with alcohol abuse concerns as compared to other ethnic groups.

The authors found that there were a variety of factors that could possibly be linked to Polynesian American college students' elevated levels of alcohol abuse. These were: family conflicts; criminal activity and/or gambling problem; physical abuse within the family; higher levels of ethnic/racial discrimination; problems adjusting to the university; reading or study skills problems; test, speech, or performance anxiety; time management issues; academic, schoolwork or grade issues; poor concentration; homesickness; distress; anxiety; and depression. These students also reported higher levels of rape, sexual assault, or unwanted sex as compared to White college students. Finally, higher levels of irritability, anger, or hostility were also present among Polynesian American college students.

Despite the considerable issues, including alcohol abuse, with which Polynesians presented during therapy, they appeared to significantly underutilize mental health services as

compared to their White peers (Allen, Cox, et al., 2016). Although Polynesian American college students had the same likelihood of initially utilizing counseling services, they were more likely than White students to end therapy early (Allen, Cox, et al., 2016). Allen, Cox, et al. (2016) hypothesized that the low retention rate may be due to a sense of stigma associated with seeking help for emotional struggles outside of the family. Seeking help may bring shame and dissatisfaction within the family, along with a sense of personal weakness. Allen and Smith (2015) also suggested that relying on collectivistic coping strategies, such as family support and religiosity/spirituality, may be more culturally appropriate for Polynesian American students rather than seeking professional help.

NHPI cultural characteristics. Many NHPIs have a cultural and religious ritual of males consuming kava, a perennial shrub native to the ethnogeographic regions of Melanesia, Micronesia, and Polynesia (Sarris, LaPorte, & Schweitzer, 2011). Shaver and Sosis (2014) state typical tribal ceremony rituals with kava may look like the tribal chief sitting at the head, overseeing the kava preparation, having a prayer, speech, and/or chant, and then distributing it to the group to be drunk by order of rank of those present. Sometimes, as is the case with funerals, these rituals may last up to four days. The purpose of these ceremonies is either for healing or a medium of communication with ancestors or deities. Shaver and Sosis (2014) further explain that this cultural practice has positive implications, including increased social capital and social status (e.g., education, income, rank, skills), bonding and competition. Therefore, it may be normal for NHPIs to consume kava based on these physical, social, and cultural benefits.

However, there may be some physical consequences from kava consumption that have not been discussed historically. Sarris et al. (2011) warns of the potential consequences of kava consumption due to a lack of research, stating "long-term studies are required to assess this plant

medicine's safety and efficacy over time" (p. 33). Because kava does mimic other depressants (e.g., calmness, relaxation, and muscle relaxation), there is a link with short-term consequences (e.g., depression/suicidal tendencies, scaly skin rashes, urticarial, meningism, sebotropic eruption) and there may be a link to long-term consequences (e.g., hepatotoxicity, carcinogenic activity) similar to other depressants (Showman et al., 2015). Additionally, there has been some speculation of kava being a gateway drug (Anthony, 2012). This could potentially have a negative impact with adolescents, who have a high risk to experiment and develop drug use (Odgers et al., 2008). In fact, Odgers et al. (2008) found that adolescents that were exposed to kava early in their lives with no conduct-problem history were more likely to develop substance dependence, test positive for herpes, have an early pregnancy, and be convicted of criminal offenses than their non-early-exposed counterparts. Therefore, NHPIs could be a vulnerable population, especially college students.

NHPI college alcohol use. The result of colonization, war, and genocide of ethnic minority populations, such as the Native Hawaiians, may result in intergenerational trauma (PTSD transmitted to secondary and subsequent generations) and by external and environmental means, e.g., ancestral pain, language and/or cultural loss, discrimination, poverty, and social inequality (Sotero, 2006). This historical trauma may be manifest by negative ruminating thoughts and feelings that have been shown to be correlated with poorer mental health and pathology and engaging in maladaptive behaviors such as tobacco, alcohol, and other drug use (Ehlers, Gizer, Gilder, Ellingson, & Yehuda, 2013). Therefore, in addition to cultural factors for NHPI alcohol use; alcohol use as a means of coping with distress unique to NHPI heredity or environmental issues should be considered.

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