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## Depressive Symptoms and Mental Health Treatment in an Ethn racially Diverse College Student Sample

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### Abstract

**Objectives**—To study (a) the prevalence of depressive symptoms and (b) the utilization of mental health treatment in an ethn racially diverse sample consisting primarily of Asian Americans, European Americans, Native Hawaiians, and Pacific Islanders.

**Participants**—589 college students.

**Method**—A questionnaire packet that included the Center for Epidemiological Studies Depression scale (CES-D) was administered to students in introductory psychology courses.

**Results**—a) there were no differences among ethn racial groups in levels of depressive symptoms as measured by the CES-D, b) 71% of participants with high levels of depressive symptoms had not received any mental health treatment in the previous 12 months, and c) European Americans were 3.7 times more likely to have received mental health treatment in the previous 12 months than other students.

**Conclusion**—Outreach efforts designed to improve utilization of mental health treatment services by depressed college students, especially by members of ethn racial minority groups, should be increased.

### Keywords

depression; treatment utilization; disparities; ethnic and racial differences; Center for Epidemiological Studies Depression scale

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There is strong empirical evidence that there has been a marked increase in depression and other forms of psychopathology among American college students over the past 50 years,<sup>1</sup>

and college counseling centers report seeing increasing number of students and more students with severe problems.<sup>2</sup> In the most recent National College Health Assessment survey of 26,685 U.S. college students, when asked about events during the past 12 months, 10% indicated that they had been treated for depression.<sup>3</sup> Depression is an important cause of poor academic performance by college students.<sup>4</sup> Psychological problems such as depression also appear to be a factor in many decisions to drop out of college.<sup>5</sup>

## Ethnoracial Group Differences in Depressive Symptoms

Although there have been numerous empirical studies of the prevalence and correlates of depressive symptoms among college students and other populations, there remain important unresolved empirical and theoretical questions. For example, it is currently unclear whether or not there are mean differences in levels of depressive symptoms between American college students from different ethnoracial backgrounds or, more generally, between Americans from different ethnoracial backgrounds. Empirical data on the comparative prevalence of depressive symptoms in the three largest U.S. ethnoracial groups (African American, European American, and Hispanic) is conflicting, with some studies finding higher levels of depressive symptoms among African Americans or Hispanics as compared with European Americans,<sup>6,7</sup> some studies finding either no differences or that differences depend on how depression is defined,<sup>8,9</sup> and some studies finding lower levels of depressive symptoms in minority groups, especially if SES is controlled.<sup>10</sup>

It is also currently unclear whether or not Asian Americans are at higher, lower, or equivalent risk for experiencing depressive symptoms as compared to members of other ethnoracial groups. In general, studies that have compared the prevalence of depressive symptoms between European Americans and Asian Americans have either found similar levels of symptoms in both groups or lower levels of depressive symptoms among Asian Americans, especially if SES is controlled.<sup>11-15</sup> On the other hand, a few studies have found higher levels of depressive symptoms among Asian Americans.<sup>16-19</sup>

Empirical evidence about the comparative prevalence of depressive symptoms in Native Hawaiians and other Pacific Islanders is sparse, with one study of Native Hawaiian and non-Hawaiian adolescents finding no differences between the two groups in mean CES-D scores,<sup>20</sup> whereas other studies have found higher levels of depressive symptoms among Native Hawaiians or Pacific Islanders as compared with European Americans.<sup>19,21</sup> No studies that specifically examined depressive symptomatology among Native Hawaiian or Pacific Islander college students could be located.

## Mental Health Treatment: Underutilization and Ethnoracial Disparities

Both psychotherapy and antidepressant medications are effective treatments for about 60-80% of those affected by depression, but only about 25% of all of those affected worldwide receive treatment.<sup>22</sup> The majority of college students who suffer from depressive symptoms receive no treatment. In the National College Health Assessment survey, for example, 31% indicated that, over the previous 12 months, they had “felt so depressed that it was difficult to function” and 6% had “seriously considered suicide,” but only 10% had received counseling.<sup>3</sup> There are a number of possible explanations for the underutilization of mental health treatment by college students including (a) real or perceived lack of access to effective treatment, (b) unwillingness to access available treatment due to real or perceived sociocultural stigmas, (c) lack of understanding of the nature and treatability of depression and other psychological problems.<sup>23,24</sup>

There is clear empirical evidence that there are ethnoracial disparities in mental health treatment utilization in the United States: Asian Americans, African Americans, and

Hispanics in the U.S. are less likely to receive treatment for depression and other mental illnesses than are European Americans.<sup>11, 25, 26</sup> Ethnoracial group disparities in mental health treatment utilization may be due to factors such as SES, parental education, or discrimination that are correlated with, but not central to, ethnoracial group membership.<sup>27</sup> Alternatively, some disparities may be due to cultural beliefs and stigmas related to mental disorders and mental health treatment,<sup>28</sup> or to differences in the prevalence of mental illness among ethnoracial groups. There is also evidence that members of ethnoracial minority groups, especially Asian Americans, are less likely to seek treatment for mental health concerns<sup>29-31</sup> and more likely to drop out of treatment<sup>32</sup> than are European Americans. On the other hand, one study of mental health treatment utilization in a sample of 1,773 U.S. college students that included 234 Asian Americans found no mental health treatment disparities between Asian Americans and other ethnoracial groups.<sup>13</sup> There is little or no data on treatment utilization by Native Hawaiian and Pacific Islander college students.

The purposes of this study are to examine an ethnorracially diverse sample of college students in rural Hawaii, consisting primarily of Asian Americans, European Americans, Native Hawaiians, and non-Hawaiian Pacific Islanders, in order to (a) compare mean levels of depressive symptoms across ethnoracial groups and (b) describe patterns of utilization of mental health treatment services. Because of conflicting or sparse data from past studies, there were no specific a priori hypotheses regarding whether or not there would be mean differences among ethnoracial groups in levels of depressive symptoms or in the utilization of mental health treatment services.

## METHODS

Paper-and-pencil surveys were administered to 614 students in introductory psychology courses at a state-funded university in rural Hawaii, the University of Hawaii at Hilo (UHH), between August 2007 and May 2009. The survey consisted of 17 pages and took approximately 15-30 minutes to complete. It is difficult to precisely estimate the study participation rate because the survey was not directly offered to every student in every class (some students were absent on the days the survey was offered and students had other options to fulfill course requirements). However, based on the total number of students registered for the classes in which the survey was offered, the lower bound for the participation rate is 71%. No participant elected to not participate in the study once reviewing the informed consent or beginning the study. Thus, there were no decliners or drop-outs. Participants were assured that their responses would be confidential and anonymous, and students' names were not recorded on the survey forms.

## Measures

The survey included the CES-D and other questionnaires designed to collect demographic data, information about utilization of mental health treatment, and respondents' histories of trauma, interpersonal violence and victimization, alcohol and substance abuse, and life stressors. This article focuses on the data on depression and mental health treatment utilization.

**Demographics**—Demographic questions covered a wide range of variables, including gender, ethnoracial identity, family income, GPA, major, and marital status.

**The Center for Epidemiological Depression Scale (CES-D)**—The CES-D was designed for use in epidemiological studies of depression and has been shown to have adequate full-scale reliability, as measured by internal consistency, in college student and other populations.<sup>33</sup> In the current sample, CES-D scales showed good to excellent internal

consistency reliability as measured by Cronbach's alpha, with alpha coefficients of .88, .83, .77, .68, and .55 for the CES-D Total, Negative Affect, Low Positive Affect, Somatic, and Interpersonal scales, respectively. Traditional cutoffs for mild to moderate (CES-D  $\geq 16$ ) and moderate to severe (CES-D  $\geq 28$ ) depressive symptoms were also calculated.<sup>33</sup>

**Mental health treatment utilization**—Participants were asked if they had received counseling or psychiatric medications (two separate yes/no questions) for mental health concerns during a) the past 12 months and b) at any time in the past, for example, “Have you ever taken psychiatric medications to help you sleep or for an emotional problem, such as depression or anxiety?”

### Statistical Analysis

In addition to testing for mean differences in CES-D Total, subscale, and cutoff scores among the six primary ethnorracial groups represented in the study sample, differences on these scores were also tested for gender, marital status (two levels), and family income (four levels). Tests for differences among the primary ethnorracial groups in reports of any mental health treatment utilization were also carried out for (a) the past year and (b) lifetime history (two tests). In the current study, the conservative Bonferroni correction for multiple comparisons<sup>34</sup> would require that each individual test be conducted at the  $p = .0017$  level in order to control the familywise Type I error rate at approximately  $p = .05$ . Individual tests for statistical significance in the current study used the conservative significance threshold of  $p = .001$  to control the familywise Type I error rate at approximately  $p = .03$ .

ANOVA was used to test for differences in depressive symptoms by ethnorracial group,  $t$ -tests to test for differences in means between males and females and other binary variables, linear-by-linear chi-square to test for differences by family income, and chi-square tests for associations with the two score cutoff variables and for differences in mental health treatment utilization.

## RESULTS

Of the 614 surveys administered, 4% ( $n = 25$ ) were dropped because they had more than one missing item from the set of 20 items that make up the CES-D, leaving a total analysis sample of  $N = 589$ . The mean age of respondents was 19.7 ( $SD = 4.0$ , range = 18 to 53, 95% between 18 and 25). Sixty-seven percent (67%) of the sample were female. Freshmen constituted 63% of the sample; sophomores, 22%; juniors, 11%; and seniors, 4%. Forty-three percent (43%) of the participants reported having lived on the rural Big Island of Hawaii most or all of their lives. Of the Big Island subgroup, 24.3% were European American versus 52.0% in the non-Big-Island subgroup. Participants were asked to report their annual family income as the income of their family of origin if less than 5 years out of high school, or their own family income, if more than 5 years out of high school. Thirteen percent reported an annual family income of \$19,999 or less, 28% between \$20,000 and \$39,999, 38% between \$40,000 and \$74,999, and 21%, \$75,000 or more. Most respondents (90%) were single/living alone, 9% were married, and 1% were divorced or widowed.

Forty-four percent of participants were multiracial, indicating that their ethnorracial background included at least two of the following: African American/Black, American Indian or Alaska Native, European American/White, Hispanic/Latino(a), Native Hawaiian, Other Pacific Islander, Japanese, Chinese, Filipino, Korean, Thai, Other Asian, or Other. Mixed race participants were asked to indicate a primary racial identity. The primary racial/ethnic identities reported by both single- and mixed-race respondents were European American (29%), Native Hawaiian (18%), Japanese (16%), Filipino (11%), Other Asian

(12%), and Other Pacific Islander (7%). Seven other categories, including Other, were rarely endorsed (< 3% each, total 7%).

### Depressive Symptoms

Means and standard deviations for CES-D Total and subscale scores are shown in Table 1 for all participants, by gender, and by primary racial identification. Also shown are the percent of respondents that scored above two traditional cutoffs for the CES-D total score: 16 or higher, generally construed as indicating mild to moderate levels of depressive symptoms, and 28 or higher, indicating more severe symptoms.<sup>33</sup> As shown in Table 1, there were no statistically significant differences in depressive symptoms associated with ethnoracial group membership. Additionally, there were no statistically significant differences for different levels of family income or for differing marital status. There were significant differences in the CES-D Total score and some of the subscales for males vs. females: on average, females reported moderately higher ( $d = .28, p < .001$ ) levels of depressive symptoms as measured by the CES-D Total score.

### Mental Health Treatment

A history of mental health treatment was correlated with current depressive symptoms, as measured by the CES-D Total score ( $r$  with treatment during the past 12 months =  $.29, p < .001$ ; and  $r$  with any past treatment =  $.28, p < .001$ ). As shown in Table 2, 23.3% of the sample reported receiving either counseling/psychotherapy, psychiatric medications, or both at some point during their lives; and 8.1% reported treatment at some point during the previous 12 months. Overall, more females (26.3%) than males (16.8%) had a lifetime history of mental health treatment ( $\chi^2[1, N = 574] = 6.39, p < .05$ ). However, when the level of current depressive symptoms as measured by the CES-D was controlled, there was no statistically significant difference in the likelihood of past mental health treatment for males versus females,  $F$  change (1, 571) = 3.08,  $p = .08$ .

Table 2 presents data on mental health treatment history for all participants and for each of the six primary ethnoracial groups included in the study. There were no statistically significant differences in mental health treatment rates among the five primary minority ethnoracial groups, either for the past 12 months,  $\chi^2(4, N = 355) = 1.34, p = .86$ , or for any past treatment,  $\chi^2(4, N = 358) = 2.45, p = .66$ . There was a large difference between the rates of lifetime mental health treatment for European Americans as compared with the five other ethnoracial groups combined: European Americans were 2.3 times more likely than members of the other five groups combined to have received mental health treatment; 38.1% of European Americans had received treatment as compared with 16.8% of members of the other five groups,  $\chi^2(1, N = 526) = 28.89, p < .001$  for differences in lifetime treatment between European Americans and all other groups combined. Ethnoracial differences in treatment during the past 12 months were even more marked: European Americans were 3.7 times more likely than members of the other five groups combined to have received mental health treatment in the past 12 months; 15.6% of European Americans had received treatment as compared with 4.2% of members of the other five groups,  $\chi^2(1, N = 522) = 20.19, p < .001$ .

Only 29.3% of the subset of students with high levels of depressive symptoms (CES-D  $\geq 28, n = 61$ ) had received mental health treatment during the past 12 months: 17.2% had received counseling only, 3.4% had received medications only, and 8.6% had received both medications and counseling. There were no differences between the high distress (CES-D  $\geq 28$ ) group and the rest of the students in terms of ethnoracial composition,  $\chi^2(5, N = 540) = 4.87, p = .43$ . European Americans in the high depressive symptoms group were 2.6 times more likely than minority students to have received mental health services in the past 12

months: 50.0% of European Americans had received treatment as compared with 19.4% of members of the other six groups,  $\chi^2(1, N=54) = 5.4, p < .05$ .

There was no statistically significant difference in type of treatment received by primary ethnorracial group: There were 123 participants in the six major ethnorracial categories who had a history of mental health treatment, 64 European Americans and 59 who belonged to one of the five other groups; 53.1% of treated European Americans had never received treatment involving medications as compared with 66.1% of the members of the other five groups,  $\chi^2(1, N=123) = 2.14, p = .14$ .

## COMMENT

### Conclusions

Major findings of this study were (a) there were no significant differences in levels of depressive symptomatology among the major ethnorracial groups that were represented in the sample (European American, Asian American, Native Hawaiian, and Pacific Islander), (b) many students with moderate to severe levels of depressive symptomatology reported that they had not received any mental health treatment over the previous 12 months, and (c) there was a marked disparity in the utilization of mental health services between ethnorracial minority students and European American students: European Americans were much more likely to have received mental health treatment services in the past 12 months. The main implication of these findings is that college mental health services providers need to increase outreach efforts to encourage depressed students, especially minority group students, to utilize available treatment services.

About 10% of respondents for the entire sample combined reported high levels of depressive symptoms (defined as CES-D  $\geq 28$ ) and about 40% reported at least mild to moderate levels of depressive symptoms (defined as CES-D  $\geq 16$ ). There were no differences in the ethnorracial compositions of either the high symptom group versus others ( $\geq 28$  vs.  $< 28$ ) or the moderate to high symptom group versus others ( $\geq 16$  vs.  $< 16$ ). The data on levels of depressive symptoms and treatment utilization obtained in this sample mirror recent national data on U.S. college students, with very high levels of reported depressive symptoms and comparable rates of past-12-month mental health treatment (8% for the current sample vs. 10% nationally).<sup>3</sup> Consistent with findings from many past studies, there was a small ( $r = .13$ ) correlation between female gender and depressive symptoms.

The counseling center at the UHH provides free, unlimited counseling services to students, but only 29% of those with high levels of depressive symptoms reported having received counseling/psychotherapy (17%), psychiatric medications (3%), or both (9%) during the previous 12 months, indicating a marked underutilization of available mental health treatment services by depressed students. There were no differences in mental health treatment utilization among the five primary minority ethnorracial groups (Japanese, Filipino, Other Asian, Native Hawaiian, and Other Pacific Islander), but European Americans were 3.7 times more likely than minority group students to have received mental health services in the past 12 months. These marked difference in treatment utilization cannot be explained by differences in SES as indexed by family income because, although there were differences in family income by ethnorracial group [ $F(6, 541) = 3.07, p < .01$ ], in a post hoc analysis using Tukey's HSD method, the SES of European Americans did not differ significantly at the  $p = .05$  level from any of the other groups. There was a small difference in mean family income between those who had ever received mental health treatment and those who had not, with the average family income among those who had received mental health treatment in the past being slightly *lower* than the income of those with no history of treatment ( $t[559]$



= 2.29,  $p = .02$ ); there was no difference in family income for those who had received treatment in the past 12 months versus those who had not.

### Research Recommendations

There is now a considerable body of empirical research that examines the prevalence of depressive symptoms and mood disorder diagnoses across ethnoracial groups in the United States, however, findings vary considerably between studies. Some studies find higher rates of depressive symptoms among minority groups, other find no differences, and others find lower levels among minority groups. There has been one meta-analysis of depression among U.S. Latinos that included 31 studies. This study found no differences between Latinos and non-Latino European Americans in the lifetime prevalence of major depressive disorder, but did find a slightly higher rate of depressive symptoms among Latinos (standardized mean difference = .19).<sup>7</sup> The time is ripe for a comprehensive meta-analysis of ethnoracial differences in the prevalence of depressive symptoms and diagnoses across U.S. ethnoracial groups. Such a meta-analysis would help researchers to study more productive and focused questions about the relationships between race, ethnicity, and mental health.

### Limitations

This study has a number of limitations. As in any study, the generalizability of study results beyond the population sampled can be questioned. The ethnoracial makeup of our student body reflects unique features of Hawaii. Hawaii is a majority minority state: the single largest ethnoracial group in the state is Japanese American. Other minority groups that are more common in many mainland settings (e.g., African American and Hispanic) were present in very small numbers in the current sample. Because there was no question on the survey about citizenship or nationality, there is no way to separate out international students from American students in this study. Approximately 8% of UHH students are international students.

Conclusions about depressive symptomatology and treatment utilization in ethnoracial subgroups are somewhat limited by the sample size. For example, at least one study has found differences in depressive symptomatology between Asian American subgroups, with Filipinos sometimes reporting higher levels of depressive symptoms than other groups.<sup>14</sup> Although Filipinos in our sample did have higher mean scores than other Asian subgroups on the CES-D scales, these differences were not statistically significant. Because this is the first study, to our knowledge, to examine the prevalence of depressive symptoms and mental health treatment utilization in Native Hawaiian and Other Pacific Islander college students in the U.S., conclusions about these groups should be considered tentative, pending further research.

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**TABLE 1**  
 CES-D Scale Scores and Cutoffs by Gender, Ethnoracial Group, Family Income, and Marital Status (N = 589)

Variable	N	Total	CES-D Scale Scores <i>M(SD)</i>					% Above CES-D Total Scale Cutoffs	
			NA	LPA	S	I	% >= 16	% >= 28	
All participants	589	14.58 (9.37)	.22 (.22)	.28 (.23)	.29 (.18)	.16 (.20)	38.5	10.4	
Gender									
Female	395	15.41* (9.69)	.25* (.23)	.28 (.23)	.31* (.19)	.16 (.21)	41.3	12.9	
Male	193	12.89* (8.48)	.18* (.19)	.28 (.25)	.25* (.17)	.16 (.20)	33.2	5.2	
Ethnoracial group									
Japanese	93	13.01 (7.75)	.16 (.19)	.31 (.24)	.25 (.16)	.13 (.18)	28.0	7.5	
Filipino	65	16.51 (10.96)	.27 (.26)	.29 (.22)	.35 (.18)	.15 (.20)	41.5	16.9	
Other Asian	69	14.58 (9.55)	.22 (.22)	.33 (.26)	.27 (.17)	.17 (.22)	39.1	11.6	
Native Hawaiian	106	14.12 (9.06)	.21 (.22)	.27 (.23)	.30 (.19)	.13 (.20)	39.6	7.5	
Other Pacific Islander	38	16.84 (10.12)	.25 (.23)	.31 (.22)	.34 (.22)	.18 (.22)	50.0	10.5	
European American	169	15.09 (9.70)	.25 (.23)	.26 (.24)	.30 (.19)	.20 (.21)	43.8	11.2	
Other	42	12.26 (8.02)	.19 (.18)	.21 (.21)	.27 (.19)	.12 (.21)	26.2	7.1	

Note. Total = CES-D Total (0-60), NA = Negative Affect (0-1), LPA = Low Positive Affect (0-1), S = Somatic (0-1), I = Interpersonal (0-1).

\*  $p < .001$  for ANOVA or chi-square.

**TABLE 2**  
Lifetime and 12-Month Prevalence of Mental Health Treatment for all Participants and by Ethnoracial Group (N = 589)

Ethnoracial group	N	Treatment during the past 12 months (%)			Lifetime treatment (%)				
		Counseling only	Meds only	Counseling and meds	Any treatment	Counseling only	Meds only	Counseling and meds	Any treatment
All participants	589	4.2	1.1	2.8	8.1	13.8	1.4	8.0	23.3
Japanese	92	1.1	0.0	1.1	2.2	9.8	2.2	3.3	15.2
Filipino	65	3.1	1.6	0.0	4.7	16.9	1.5	4.6	23.1
Other Asian	65	4.7	0.0	0.0	4.7	6.2	1.5	6.2	13.8
Native Hawaiian	98	2.0	2.0	1.0	5.1	11.2	0.0	4.1	16.2
Other Pacific Islander	37	2.7	2.7	0.0	5.4	10.8	5.4	0.0	16.2
European American	167	6.6	0.6	8.4	15.6	20.2	0.6	17.3	38.1

Note. *Counseling* = any form of talk therapy; *Meds* = treatment with psychiatric medications. --