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## Unmet need for treatment for substance use disorders across race and ethnicity

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### Abstract

**Background**—The objective was to analyze disparities in unmet need for substance use treatment and to observe variation across different definitions of need for treatment.

**Methods**—Data were analyzed from the 2002-2005 National Survey of Drug Use and Health and the National Epidemiologic Survey on Alcohol and Related Conditions. Logistic regressions estimated the likelihood of specialty substance use treatment across the two data sets. Parallel variables for specialty, informal and any substance abuse treatment were created. Perceived need and normative need for substance use treatment were defined, with normative need stratified across lifetime disorder, past twelve month disorder, and heavy alcohol/any illicit drug use. Treatment rates were analyzed, comparing Blacks, Asians and Latinos to non-Latino whites across need definitions, and adjusting for age, sex, household income, marital status, education and insurance.

**Results**—Asians with past year substance use disorder had a higher likelihood of unmet need for specialty treatment than whites. Blacks with past year disorder and with heavy drinking/illicit drug use had significantly lower likelihood of unmet need. Latinos with past year disorder had a higher likelihood of unmet need for specialty substance abuse treatment. Asians with heavy drinking/illicit drug use had lower likelihood of unmet need.

**Conclusions**—The findings suggest that pathways to substance abuse treatment differ across groups. Given high rates of unmet need, a broad approach to defining need for treatment is

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#### Contributors

Drs. Mulvaney-Day and Alegria conceived the study and overall analytic design. Dr. Mulvaney-Day developed the data analysis plan, oversaw the data analyses and interpretation, and wrote the manuscript. Ms. DeAngelo conducted the literature review, drafted the introduction, and contributed to the interpretation of the data analysis. Dr. Chen conducted the analyses, drafted the results section, and provided input on the statistical methods utilized. Dr. Cook provided input on the design and interpretation of the disparities analyses, and participated in the writing of the paper. All authors contributed to and have approved the final manuscript.

#### Conflict of Interest

All authors declare that they have no conflicts of interest.

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warranted. Future research to disentangle social and systemic factors from factors based on diagnostic criteria is necessary in the identification of need for treatment.

## Keywords

disparities; substance use treatment; substance use disorder; need for treatment

## 1. Introduction

Planning for service provision for drug and alcohol treatment requires precise estimates of unmet need for such treatment (Rehm and Greenfield, 2008; Shepard et al., 2005) broken down by subgroups such as race and ethnicity (Alvarez et al., 2007; Reynoso-Vallejo et al., 2008). Generating such estimates is difficult. Few studies have large enough sample sizes to compare need for treatment for substance use *only* across racial and ethnic subgroups; hence, many studies combine mental health and substance diagnoses and treatment estimates across groups. Inconsistencies in how need for behavioral health treatment is defined are also evident (Aoun et al., 2004; Sareen et al., 2005), making it difficult to reconcile different findings across groups.

A comprehensive understanding of disparities in need for substance use treatment is necessary. To achieve this goal, researchers must agree on what constitutes need. Some evidence suggests that differential endorsements of symptoms in diagnostic assessments may occur across race/ethnicity and cultures (Alegría and McGuire, 2003; Breslau et al., 2008; Weiss et al., 2003). Hence, restricting need estimates for substance use treatment to those who fulfill the most restrictive diagnostic criteria may undercount need estimates for some subpopulations and bias estimates. Alternately, substance use treatment has a health system function and a criminal justice function, with evidence of disproportionate court-mandated substance use treatment services for Latinos and African Americans compared to non-Latino whites (Rounds-Bryant et al., 2003) which could reflect a social control element embedded in treatment for substance use disorders (Burman, 2004). If some groups are more vulnerable to such social influences, relaxing the diagnostic criteria could lead to artificially inflated and biased rates of treatment use for some groups. It is critical to take into account differences across need definitions when considering disparities estimates.

### 1.1 Definitions of need for treatment

Two need definitions often used in psychiatric epidemiology are normative need and felt need (Aoun et al., 2004). *Normative need* is defined by diagnostic criteria determined by experts (e.g., the presence of a psychiatric diagnosis). *Felt need* (or perceived need) is defined by the subjective opinion that one needs treatment. These definitions are often combined differently across studies, yielding inconsistent conclusions about unmet need for treatment across racial/ethnic groups.

Inconsistencies in need definitions may contribute to contradictory disparities estimates. In the longitudinal household telephone survey, Health Care for Communities, need for treatment services was defined by whether a person thought they needed help (felt need) or probable clinical need (normative need), measured by screening positive for mental health problems and/or alcohol abuse or recent use of illicit drugs. Analyses based on these data showed greater unmet need for treatment among racial/ethnic minorities relative to Whites (Stockdale et al., 2007; Wells et al., 2001). In contrast, other studies using the National Survey of Drug Use and Health (NSDUH), calculated past year unmet need for substance use treatment using only diagnostic criteria from the DSM-IV-R (normative need; Epstein et al., 2004; Wu et al., 2003). These studies found no significant differences in unmet need across race/ethnicity. A third study using the National Epidemiologic Survey on Alcohol and

Related Conditions (NESARC) defined need according to lifetime diagnoses, and found Blacks were *more* likely to utilize non-specialty services for drug disorders compared to Whites (Hatzenbuehler et al., 2008). The differences in methodologies make drawing conclusions about disparities in unmet need for substance disorders difficult to disentangle across studies.

Even *within* normative diagnostic definitions of need, significant variability in criteria used to define need is often evident. Using DSM criteria, definitions of substance use disorders can differ according to whether a respondent meets one or more of six symptoms (Wu et al., 2003) or meets three or more of seven criteria (Harris and Edlund, 2005). However, current APA practice guidelines recommend treating individuals with substance “misuse” without progression to dependence or abuse (American Psychiatric Association, 2006). The critical question is whether variability in substance use treatment disparities across race/ethnicity exists depending upon the cut-off point in the normative definition of need.

## 1.2 Objective of this study

The purpose of this analysis is to compare disparities in unmet need for substance use treatment restricted to substance use disorders only, using robust sample sizes to enable comparisons across groups. A related objective is to observe whether disparities estimates vary depending upon the definitions of need for treatment applied. We concentrate on substance use disorders without co-occurring mental health diagnoses because little information exists about treatment patterns for substance use services only across race/ethnicity. Such information is necessary to improve tracking across race/ethnicity and to design more targeted clinical and policy interventions that are culturally appropriate for these populations (Robles et al., 2006).

To provide a comprehensive picture of unmet need, we utilize data from two epidemiologic datasets – the 2002-2005 National Survey of Drug Use and Health (NSDUH) and the National Epidemiologic Survey on Alcohol and Related Conditions (NESARC). We match definitions for categories of need and treatment across the two surveys. By conducting parallel analyses with two different surveys, we accomplish two goals. First, we capitalize on the strengths of both datasets, as the NSDUH has a large enough sample size to allow comparisons across ethnic/racial groups in past year diagnoses, and the NESARC has more comprehensive treatment data. Secondly, we enable assessment of a broad range of need definitions, as the NSDUH collects data on perceived unmet need and past year substance diagnoses, while the NESARC includes lifetime substance diagnoses in addition to past year. We estimate disparities using the large samples available in the NSDUH, and check these findings against those in the NESARC as a sensitivity analysis.

## 2. Methods

The NSDUH is an annual survey administered to approximately 67,500 non-institutionalized civilians in the United States including Alaska and Hawaii. It measures substance and alcohol use, abuse and/or dependence, and treatment for these disorders. From 2002-2005 the measures for substance abuse and dependence and treatment, remained consistent, allowing us to combine these datasets. The NESARC is a US-Census Bureau conducted national survey focused on substance and/or alcohol use disorders and treatment. The NSDUH and the NESARC have several similarities which make them comparable. They used multi-stage sampling designs, applied post-stratification weights to adjust for sampling differences, and interviewed the same populations across race/ethnicity. Ethnic/racial groups included non-Latino whites, Blacks, Asians and Latinos for both datasets. We include Asians as very little information exists regarding substance disorders and unmet need for this population; this category combines Pacific Islanders for consistency across datasets as

NESARC combined them into a single category in the public use dataset. We select only those individuals 18 years of age or older for these analyses.

Several differences exist between surveys in data collection processes (Grucza et al., 2007). The NESARC data were collected face-to-face by the US Census Bureau. In contrast, the NSDUH data were collected by a private firm through computer-assisted self-administration; the respondents were not required to give names, allowing a high degree of privacy that could have encouraged collection of sensitive data. However, NESARC had a higher response rate (81% versus 75%) which may have ensured greater representation from hard to locate respondents (Grucza et al., 2007).

## 2.1 Measures of Need

For the NSDUH, we defined a variable to represent perceived unmet need for substance use treatment. Respondents who did not receive treatment yet endorsed needing it in the last 12 months were coded positive for perceived need. Respondents who received treatment but endorsed needing more were also coded positive.

Diagnostic criteria were identical across the two surveys. Administration and formatting of the items differed somewhat across the two studies (e.g., the NESARC asked about all illicit drugs in the same module using a list whereas the NSDUH asked about each drug in its own module). Also, to receive an abuse diagnosis, the NSDUH excluded individuals with a dependence diagnosis; the NESARC, however, allowed individuals to receive diagnoses of dependence only, abuse only or dependence and abuse. For these analyses, anyone with both dependence and abuse in the NESARC was coded as substance dependent.

Both the NSDUH and the NESARC define past year alcohol or drug abuse as having endorsed one or more of four DSM-IV abuse criteria, and past year alcohol or drug dependence as endorsing three or more of six DSM-IV criteria, with a seventh criteria of withdrawal included for alcohol, pain relievers, cocaine, heroin, sedatives, and stimulants. In the NESARC, the assessment used was the Alcohol Use Disorders and Associated Disabilities Interview Schedule- DSM-IV editions (AUDADIS-IV). Given that NSDUH only measures past year disorder, we analyzed lifetime substance disorders using only the NESARC.

Lastly, we created two variables for those who did not qualify for a diagnosis, but who reported heavy alcohol or illicit drug use. In the NSDUH, heavy alcohol use was defined as drinking five or more drinks on the same occasion on each of 5 or more days in the past 30 days. In the NESARC, a comparable variable was created in which the respondent endorsed *both* drinking in the last 30 days *and* drinking five or more drinks at least once a week in the last year. For drugs, any use of illicit drugs in the past year was the indicator, excluding marijuana due to the fact that it can be used for medicinal purposes (Kogan and Mechoulam, 2007). We used a past year time frame to ensure greater comparability across surveys since the NSDUH drug-use information was collected anonymously but the NESARC was collected face-to-face, and shorter time frames such as 30-days may be more subject to under-reporting.

## 2.2 Measures of Substance Abuse Treatment

We combined treatment modalities across surveys into specialty treatment, informal treatment and any treatment (see Table 1). In the NSDUH, *specialty treatment in the last 12 months* included: any inpatient hospital overnight services, residential rehabilitation services, outpatient rehabilitation services, outpatient mental health facility services, private doctor's office for drugs or alcohol services and halfway house services. In the NESARC *specialty treatment* included: inpatient ward, halfway house, outpatient clinic, any

rehabilitation program, or doctor, psychiatrist, psychologist, or social worker for drugs or alcohol. In both, *informal treatment* included self-help groups and religious or spiritual services. Other treatment for drug and/or alcohol use included EAP, family or social service agency, and other unspecified clinic services for drugs and alcohol. Our definition of *any treatment* includes specialty treatment, informal treatment and any other treatment.

We did not include methadone maintenance because its effectiveness has been disputed and is still considered controversial (Mattick et al., 2003; McKenzie et al., 2009). We also did not include detox, as this question was not parallel across the instruments. The NESARC asks whether the respondent had gone to a detox in the last 12 months, but does not ask whether detox services were the primary mode of treatment in another treatment modality (such as in-patient hospital stay). In contrast, the NSDUH did not ask about detox as a discrete modality, but instead whether respondents received detox services only as part of any treatment episode.

### 2.3 Statistical analyses

First, we compared demographic, need and treatment variables in the two datasets, along with the significance test of ethnicity differences for each variable. We then compared age and gender adjusted rates of unmet need for specialty treatment by race/ethnicity, varying the normative definition of need. We examined perceived need in the NSDUH, as well as any lifetime alcohol or drug use disorder in the NESARC. We then looked at past year dependence and abuse separately for alcohol and drugs in both datasets. Lastly, we relaxed our normative definition further to include heavy alcohol use and illicit drug use. We applied age and gender adjusted weights in estimation and used tests of proportions to compare means for rates of unmet need in each racial/ethnic group against the non-Latino Whites. We also ran parallel analyses looking at the rates of *any* substance abuse treatment by race/ethnicity given varying need definitions. Here we included court mandated program or treatment in jail in our treatment categories for the any treatment category in the NSDUH as a sensitivity analyses. We ran these analyses in a parallel fashion using both the NSDUH and the NESARC to evaluate whether patterns were similar.

Finally, we assessed whether the relationships observed in the bivariate analyses were stable, controlling for multiple confounders in the regression analyses. A series of logistic regressions were conducted and odds of unmet need for specialty substance use treatment were observed by race/ethnicity. Different regressions were estimated pooling the definitions of need from the bivariate analyses into four categories: perceived need, lifetime substance use diagnosis, past year substance use diagnosis, and any past-year heavy use of alcohol or illicit drug use. In Model 1, we controlled for age and sex only; in Model 2 we included socioeconomic variables associated with use of substance abuse and mental health services: household income, marital status, education and insurance. We observed variation in the strength and directionality of race/ethnicity correlates in the NSDUH and NESARC to assess whether the patterns were consistent. Standard errors for all analyses were estimated using Stata 10 software (StataCorp, 2008) which accounts for the survey sampling design, and significance tests were performed using design-adjusted Wald tests.

## 3. Results

Unadjusted rates of treatment, need and sociodemographic characteristics were consistent across studies (see Table 2) suggesting a high level of comparability. Bivariate analyses compared differences across race/ethnicity in use of specialty services stratified by varying definitions of need (see Table 3). In the NSDUH, Asians had significantly higher rates of unmet need for specialty care compared to Whites across many categories of need – perceived need ( $p<0.01$ ), past year alcohol abuse ( $p<0.001$ ), past year heavy alcohol use

( $p < 0.001$ ), and past year drug dependence ( $p < 0.01$ ). Patterns for these comparisons in the NESARC were significant in past year alcohol abuse ( $p < 0.001$ ) and past year drug abuse ( $p < 0.001$ ).

Looking at Blacks, however, we found reverse disparities when comparing unmet need rates to Whites. In the NSDUH, Blacks had lower rates of unmet need for specialty substance use treatment across varying need definitions, including past year alcohol abuse ( $p < 0.10$ ), past year heavy use of alcohol ( $p < 0.05$ ), and past year use of illicit drugs ( $p < 0.01$ ). The parallel patterns in the NESARC for these comparisons were similar, though not significant, with trends towards reverse disparities for Blacks compared to Whites. Most interestingly, looking at NESARC lifetime rates of alcohol disorder, Blacks were also significantly less likely than Whites to have unmet need for substance use treatment ( $p < 0.05$ ). There were no differences between Latinos and non-Latino Whites in the NSDUH bivariate analyses, with the exception of marginally significant higher rates of unmet need for alcohol abuse ( $p < 0.10$ ).

We ran identical analyses looking at the patterns of *any* substance use treatment across race/ethnicity according to the differing definitions of need. The same patterns as those reported above were found (results not shown). Here we also included any treatment in jail in the definition for any treatment in sensitivity analyses using the NSDUH to see if patterns of disparities shifted, but they remained the same (results not shown).

Findings from the logistic regression models were consistent with these bivariate findings (see Table 4). Asians with perceived need have marginally higher likelihood of unmet need ( $p < 0.10$ ), and those with past year substance disorder have higher likelihood of unmet need for specialty treatment than non-Latino Whites across both Model 1 ( $p < 0.05$ ) and Model 2 ( $p < 0.10$ ). Blacks with past year substance disorders have lower likelihood of unmet need in Model 1 ( $p < 0.05$ ) than non-Latino Whites, and Blacks with heavy drinking/illicit drug use have significantly lower likelihood of unmet need in both Model 1 ( $p < .001$ ) and Model 2 ( $p < .01$ ). These patterns are consistent when the dependent variable was any treatment (results not shown). Consistent with our bivariate findings, Latinos with past year substance disorder have a higher likelihood of unmet need for specialty treatment in Model 2 ( $p < .01$ ). Patterns in the NESARC are similar with the exception of Asians with past year substance disorder.

In the NESARC, Asians with heavy drinking/recent use of illicit drugs also have significantly lower odds of unmet need for specialty treatment ( $p < 0.05$  in Model 1;  $p < 0.01$  in Model 2), a pattern which is mirrored in the NSDUH regressions though not reaching the significance level. Meeting diagnostic criteria does not seem necessary for Blacks in the NSDUH nor Asians in the NESARC to have higher rates of specialty treatment use than Whites.

#### 4. Discussion

Significant disparities in rates of substance use treatment were identified for Asians who were consistently more likely to have unmet need. Low rates of substance use treatment by Asians are consistent with other studies documenting underutilization of behavioral health services in general by Asians (Abe-Kim et al., 2007; Le Meyer et al., 2009; Ta et al., 2008). Increasing culturally and language appropriate substance use services may be one way to counter underutilization by Asians (Yu et al., 2009). Evidence of disparities for Latinos with substance disorder only emerged in the multivariate models, but suggests that similar cultural factors may be important to consider, particularly accessibility to specialty services administered by providers fluent in Spanish (Alegria et al., 2007).

In contrast, Blacks were consistently less likely to have unmet need for specialty substance use treatment than non-Latino whites across all need definitions, a utilization pattern that has consistently emerged in other analyses examining Black/White differences in substance use treatment utilization (Hatzenbuehler et al., 2008; Keyes and Hasin, 2008). This suggests different pathways for Blacks into substance use treatment; social coercion (Keyes and Hasin, 2008; Swanson et al., 2009) and/or other environmental factors such as court involvement (Cook and Alegría, 2011) external to need for services may be a factor in higher rates of substance use treatment services for Blacks. Alternately, one study found that Blacks treated in VA hospitals who reported drinking were more likely to receive advice about their drinking than non-Latino whites (Dobscha et al., 2009), suggesting a role of medical providers in facilitating treatment differently across racial and ethnic groups. Future research is needed to disentangle social and systemic factors from factors based on diagnostic criteria in the identification of individuals who need substance use services. However, given the extremely low rates of services among all groups, regardless of the need definition applied, it is important to use a liberal measure in determining need for services. This is particularly salient for ethnic and racial minorities who have been found to have greater mistrust of health care providers (Croghan et al., 2003; LaVeist et al., 2000; McLeod et al., 2004).

Consideration of rates of unmet need across varied definitions of need for treatment did not change overall patterns of disparities for Blacks. Although higher likelihood of treatment for Blacks with substance use disorders did not persist when we controlled for sociodemographic factors, Blacks with heavy drinking and illicit drug use had lower unmet need than Whites across both regression models. The fact that sociodemographic factors did not moderate this relationship, further suggests that consideration of other unmeasured external or environmental factors is critical in understanding substance abuse treatment patterns for Blacks who may misuse substances but do not qualify for a substance abuse or dependence diagnosis.

For Asians, consideration of treatment patterns for those with heavy drinking/illicit drug use without a diagnosis of substance use disorder resulted in a different pattern in the regression models than Asians with a diagnosis; similar to Blacks, Asians had *lower* likelihood of unmet need in this group. Future research is necessary to better understand whether these patterns are due to similar external factors as for Blacks discussed above, or to unique patterns of response to diagnostic questions in epidemiologic surveys. Studies that analyze disparities using restrictive diagnostic criteria for need for substance abuse treatment (Harris and Edlund, 2005) may fail to accurately capture treatment need for Asians. Research currently underway to assess categorical versus dimensional approaches to diagnostic assessment in substance use disorders (Saunders and Schuckit, 2006) could inform this discussion.

There are several important limitations to this study. First, the sample size for Asians is small and the confidence intervals are large in both studies. Findings related to patterns for Asians should be viewed with caution. Secondly, the size of the NESARC is not necessarily powered to identify differences across race/ethnicity in past year diagnoses. We have taken care to present most of the past-year NESARC findings as illustrations to support findings from the NSDUH and provide confidence in general patterns that have emerged from these NSDUH analyses. In addition, there are minor differences in operationalization of the NSDUH and the NESARC that could impact comparisons between the two studies such as anonymous methods for collecting drug use information in the NSDUH (Grucza et al., 2007).

Across all racial and ethnic groups, this analysis found high rates of unmet need for substance use treatment, with most estimates over 90% across all normative need definitions regardless of racial/ethnic category. It is critical to understand and address lack of access to substance use treatment due to barriers such as stigma (Livingston et al., 2012) and insufficient insurance coverage (Bouchery et al., 2012). Given these overall high rates of unmet need, and evidence of higher rates of specialty substance use treatment for Blacks without a diagnosis of disorder (and somewhat for Asians) compared to Whites, a broad approach to defining need for substance treatment seems to be warranted when developing estimates of need in racial/ethnic minority populations. Addressing high levels of unmet need for Asians should be a priority for policymakers and treatment providers who work with these populations. Further research is necessary to disentangle the reasons for reverse disparities in specialty substance use treatment for Blacks.

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## References

- Abe-Kim J, Takeuchi DT, Hong S, Zane N, Sue S, Spencer MS, Appel H, Nicdao E, Alegria M. Use of mental health-related services among immigrant and US-born Asian Americans: results from the National Latino and Asian American Study. *Am J Public Health*. 2007; 97:91–98. [PubMed: 17138905]
- Alegria M, McGuire T. Rethinking a universalist framework in the psychiatric symptom-disorder relationship. *J Health Soc Behav*. 2003; 44:257–274. [PubMed: 14582307]
- Alegria M, Mulvaney-Day N, Woo M, Torres M, Gao S, Oddo V. Correlates of past-year mental health service use among Latinos: results from the National Latino and Asian American Study. *Am J Public Health*. 2007; 97:76–83. [PubMed: 17138911]
- Alvarez J, Jason LA, Olson BD, Ferrari JR, Davis MI. Substance abuse prevalence and treatment among Latinos and Latinas. *J Ethn Subst Abuse*. 2007; 6:115–141. [PubMed: 18192207]
- American Psychiatric Association. Practice Guideline for the Treatment of Patients with Substance Use Disorders. Second Edition. APA; Washington, DC: 2006.
- Aoun S, Pennebaker D, Wood C. Assessing population need for mental health care: a review of approaches and predictors. *Ment Health Serv Res*. 2004; 6:33–46. [PubMed: 15002679]
- Bouchery ED, Harwood HJ, Dilonardo J, Vandivort-Warren R. Type of health insurance and the substance abuse treatment gap. *J Subst Abuse Treat*. 2012; 42:289–300. [PubMed: 22119184]
- Breslau J, Javaras KN, Blacker D, Murphy JM, Normand SLT. Differential item functioning between ethnic groups in the epidemiological assessment of depression. *J Nerv Ment Dis*. 2008; 196:297–306. [PubMed: 18414124]
- Burman S. Revisiting the agent of social control role: implications for substance abuse treatment. *J Soc Work Pract*. 2004; 18:197–209.
- Cook B, Alegria M. Racial-ethnic disparities in substance abuse treatment: the role of criminal history and socioeconomic status. *Psychiatr Serv*. 2011; 62:1273–1281. [PubMed: 22211205]
- Croghan T, Tomlin M, Pescosolido BA, Martin JK, Lubell KM, Swindle R. Americans' knowledge and attitudes towards and their willingness to use psychiatric medication. *J Nerv Ment Dis*. 2003; 191:166–174. [PubMed: 12637843]



- Dobscha SK, Dickinson KC, Lasarev MR, Lee ES. Associations between race and ethnicity and receipt of advice about alcohol use in the department of veterans affairs. *Psychiatr Serv.* 2009; 60:663–670. [PubMed: 19411355]
- Epstein, J.; Barker, P.; Vorburger, M.; Murtha, C. *Serious Mental Illness and its Co-Occurrence with Substance Use Disorders*, 2002. Substance Abuse and Mental Health Services Administration, Office of Applied Studies; Rockville, MD: 2004. DHHS Publication No SMA 04- 3905, Analytic Series A-24
- Gruzca RA, Abbacchi AM, Przybeck TR, Gfroerer JC. Discrepancies in estimates of prevalence and correlates of substance use and disorders between two national surveys. *Addiction.* 2007; 102:623–629. [PubMed: 17309538]
- Harris KM, Edlund MJ. Use of mental health care and substance abuse treatment among adults with co-occurring disorders. *Psychiatr Serv.* 2005; 56:954–959. [PubMed: 16088012]
- Hatzenbuehler ML, Keyes KM, Narrow WE, Grant BF, Hasin DS. Racial/ethnic disparities in service utilization for individuals with co-occurring mental health and substance use disorders in the general population. *J Clin Psychiatry.* 2008; 69:1112–1121. [PubMed: 18517286]
- Keyes KM, Hasin DS. Socio-economic status and problem alcohol use: the positive relationship between income and the DSM-IV alcohol abuse diagnosis. *Addiction.* 2008; 103:1120–1130. [PubMed: 18494841]
- Kogan NM, Mechoulam R. Cannabinoids in health and disease. *Dialogues Clin Neuroscience.* 2007; 9:413–430.
- LaVeist, TA.; Dials, C.; Jarrett, NC. Who experiences discrimination in the health care system, how, and why?. In: Hogue, C.; Hargraves, M.; Scott-Collins, K., editors. *Minority Health in America*. Johns Hopkins University Press; Baltimore, MD: 2000. p. 194-208.
- Le Meyer O, Zane N, Cho YI, Takeuchi DT. Use of specialty mental health services by Asian Americans with psychiatric disorders. *J Consult Clin Psychol.* 2009; 77:1000–1005. [PubMed: 19803580]
- Livingston JD, Milne T, Jang ML, Amari E. The effectiveness of interventions for reducing stigma related to substance use disorders: a systematic review. *Addiction.* 2012; 107:39–50. [PubMed: 21815959]
- Mattick RP, Breen C, Kimber J, Davoli M. Methadone maintenance therapy versus no opioid replacement therapy for opioid dependence. *Cochrane Database Syst Rev.* 2003; 2 CD002209.
- McKenzie M, Nunn A, Zaller ND, Bazazi AR, Rich JD. Overcoming obstacles to implementing methadone maintenance therapy for prisoners: implications for policy and practice. *J Opioid Manag.* 2009; 5:219–227. [PubMed: 19736902]
- McLeod JD, Pescosolido BA, Takeuchi DT, White TF. Public attitudes toward the use of psychiatric medications for children. *J Health Soc Behav.* 2004; 45:53–67. [PubMed: 15179907]
- Rehm J, Greenfield TK. Public alcohol policy: current directions and new opportunities. *Public Health Regulatory Policies.* 2008; 83:640–643.
- Reynoso-Vallejo H, Chassler D, Witas J, Lundgren LM. Patterns of drug treatment entry by Latino male injection drug users from different national/geographical backgrounds. *Eval Program Plann.* 2008; 31:92–101. [PubMed: 18222143]
- Robles RR, Matos TD, Deren S, Colón HM, Sahai H, Marrero CA, Reyes JC, Andía J, Shepard EW. Drug treatment disparities among Hispanic drug-using women in Puerto Rico and New York City. *Health Policy.* 2006; 75:159–169. [PubMed: 16338479]
- Rounds-Bryant JL, Motivans MA, Pelissier B. Comparison of background characteristics and behaviors of African-American, Hispanic, and White substance abusers treated in Federal prison: results from the TRIAD Study. *J Psychoactive Drugs.* 2003; 35:333–341. [PubMed: 14621131]
- Sareen J, Stein B, Campbell W, Hassard T, Menec V. The relation between perceived need for mental health treatment, DSM diagnosis, and quality of life: a Canadian population-based survey. *Can J Psychiatry.* 2005; 50:87–94. [PubMed: 15807224]
- Saunders JB, Schuckit MA. The development of a research agenda for substance use disorders diagnosis in the Diagnostic and Statistical Manual of Mental Disorders, (DSM-V). *Addiction.* 2006; 101:1–5. [PubMed: 16930155]

- Shepard DS, Strickler GK, McAuliffe WE, Beaston-Blaakman A, Rahman M, Anderson TE. Unmet need for substance abuse treatment of adults in Massachusetts. *Adm Policy Ment Health*. 2005; 32:403–426. [PubMed: 15844857]
- StataCorp. *Stata Statistical Software Release 10*. Stata Corporation; College Station, TX: 2008.
- Stockdale SE, Tang L, Zhang L, Belin TR, Wells KB. The effects of health sector market factors and vulnerable group membership on access to alcohol, drug, and mental health care. *Health Serv Res*. 2007; 42:1020–1041. [PubMed: 17489902]
- Swanson J, Swartz M, Van Dorn RA, Monahan J, McGuire TG, Steadman HJ, Robbins PC. Racial disparities in involuntary outpatient commitment: are they real? *Health Aff (Millwood)*. 2009; 28:816–826. [PubMed: 19414892]
- Ta VM, Juon H, Gielen AC, Steinwachs D, Duggan A. Disparities in use of mental health and substance abuse services by Asian and native Hawaiian/other Pacific Islander women. *J Behav Health Serv Res*. 2008; 35:20–36. [PubMed: 17647106]
- Weiss MG, Saraceno B, Saxena S, Van Ommeren M. Mental health in the aftermath of disasters: consensus and controversy. *J Nerv Ment Dis*. 2003; 191:611–615. [PubMed: 14504571]
- Wells K, Klap R, Koike A, Sherbourne C. Ethnic disparities in unmet need for alcoholism, drug abuse and mental health care. *Am J Psychiatry*. 2001; 158:2027–2032. [PubMed: 11729020]
- Wu L-T, Ringwalt CL, Williams CE. Use of substance abuse treatment services by persons with mental health and substance use problems. *Psychiatr Serv*. 2003; 54:363–269. [PubMed: 12610245]
- Yu J, Clark LP, Chandra L, Dias A, Lai TFM. Reducing cultural barriers to substance abuse treatment among Asian Americans: a case study in New York City. *J Subst Abuse Treat*. 2009; 37:398–406. [PubMed: 19553065]

**Table 1**

Definitions of treatment modalities

	<b>Specialty Treatment</b>	<b>Informal Treatment</b>	<b>Any Other Treatment</b>
NESARC	<ul style="list-style-type: none"> <li>• Inpatient ward</li> <li>• Halfway house</li> <li>• Outpatient clinic</li> <li>• Rehab program</li> <li>• Doctor, psychiatrist, or social worker for drugs or alcohol</li> </ul>	<ul style="list-style-type: none"> <li>• 12-step</li> <li>• Clergyman, priest, or rabbi</li> </ul>	<ul style="list-style-type: none"> <li>• Family services or social service agency</li> <li>• Crisis Center</li> <li>• EAP</li> <li>• Any other agency or professional</li> </ul>
NSDUH	<ul style="list-style-type: none"> <li>• In-patient hospital overnight</li> <li>• Residential rehab</li> <li>• Outpatient rehab</li> <li>• Outpatient mental health facility</li> <li>• Private doctor's office for drugs or alcohol</li> <li>• Halfway house</li> </ul>	<ul style="list-style-type: none"> <li>• Self-help group</li> <li>• Church</li> <li>• Religious, spiritual influence</li> </ul>	<ul style="list-style-type: none"> <li>• Community program unspecified</li> <li>• Employee Assistance Plans (EAP)</li> <li>• Youth facility</li> <li>• Group counseling</li> <li>• Clinic type unspecified</li> </ul>

**Table 2**  
 NSDUH & NESARC Sample Description, Chi-Squared Comparison Across Groups

Age	NSDUH, n=143016					NESARC, n=42392				
	Whites	Blacks	Asians	Latinos	Latinos	Whites	Blacks	Asians	Latinos	Latinos
18 - 34 years old	27.22	35.81	39.97	46.51 ***	27.63	36.42	40.53	47.86 ***		
35 - 49 years old	29.89	32.47	32.51	30.85	30.89	32.76	31.60	30.57		
50 - 64 years old	24.07	20.14	18.32	14.91	22.66	19.08	18.14	13.90		
65 years old or more	18.82	11.58	9.21	7.72	18.82	11.74	9.74	7.66		
<b>Sex</b>										
Male	48.20	44.49	47.12	51.18 ***	48.07	43.75	48.26	50.88 ***		
Female	51.80	55.51	52.88	48.82	51.93	56.25	51.74	49.12		
<b>Income</b>										
<10k	5.49	14.19	6.87	10.06 ***	8.01	16.73	9.60	12.71 ***		
10k - 20k	10.14	19.24	8.00	20.40	12.03	17.89	11.52	21.67		
20k - 30k	11.22	15.37	9.49	17.06	12.34	15.25	11.24	17.84		
30k - 40k	12.01	13.69	9.47	14.81	12.58	13.43	12.76	13.68		
40k - 50k	12.14	10.99	12.11	12.29	10.47	10.46	8.55	9.18		
50k - 75k	19.81	13.32	19.23	12.93	19.86	14.97	20.58	14.26		
75k+	29.20	13.19	34.83	12.46	24.71	11.28	25.76	10.66		
<b>Marital</b>										
Married	60.03	36.10	60.85	54.04 ***	64.16	42.18	66.68	62.55 ***		
Widowed	6.72	6.97	4.06	3.54	7.10	6.97	5.19	3.14		
Divorced or Separated	12.90	18.14	6.28	12.53	10.75	15.54	4.18	9.70		
Never been married	20.35	38.79	28.81	29.89	17.99	35.31	23.95	24.60		
<b>Education</b>										
Less than HS	12.69	21.64	7.86	41.04 ***	11.30	19.44	13.01	38.72 ***		
HS	32.69	36.31	17.46	28.12	30.15	32.22	17.55	25.46		
Some College	25.98	26.45	22.43	18.99	31.15	32.41	23.86	23.90		
College Graduate	28.64	15.61	52.25	11.85	27.40	15.92	45.58	11.91		
<b>Insurance</b>										

Age	NSDUH, n=143016					NESARC, n=42392				
	Whites	Blacks	Asians	Latinos	Latinos	Whites	Blacks	Asians	Latinos	Latinos
No	10.44	16.78	13.17	33.11 ***	14.83	22.93	23.24	38.24 ***		
Yes	89.56	83.22	86.83	66.89	85.17	77.07	76.76	61.76		
<b>Perceived need</b>										
No	99.41	99.10	99.87	99.09 ***						
Yes	0.59	0.90	0.13	0.91						
<b>Lifetime Substance</b>										
No					63.94	77.08	87.19	77.22 ***		
Yes					36.06	22.92	12.81	22.78		
<b>Past Year Substance</b>										
No	90.71	90.73	94.57	89.91 ***	90.21	91.86	94.72	91.39 ***		
Yes	9.29	9.27	5.43	10.09	9.79	8.14	5.28	8.61		
<b>Heavy Drink/Any Use Drugs without Past Year Substance disorder</b>										
No	91.85	94.30	95.57	92.27 ***	94.81	94.99	94.95	93.71		
Yes	8.15	5.70	4.43	7.73	5.19	5.01	5.05	6.29		
<b>Use of Specialty Treatment</b>										
No	99.03	98.28	99.76	98.92 ***	99.06	98.93	99.29	99.14		

\*\*\* <.001

**Table 3**  
 Proportion with Unmet Need for Specialty Treatment Across Need Categories (Age & Gender Adjusted)

Unmet Need	NSDUH				NESARC			
	Whites	Blacks	Asians	Latinos	Whites	Blacks	Asians	Latinos
<b>PERCEIVED NEED</b>								
Mean	88.84	88.92 NS	97.79 **	88.27 NS				
SE	1.64	3.44	2.27	3.63				
N	827	188	22	221				
<b>ALCOHOL</b>								
<b>Lifetime</b>								
Mean					97.59	95.81 *	96.66 NS	96.98 NS
SE					0.19	0.77	1.71	0.80
N					8088	1594	170	1698
<b>Dependence</b>								
Mean	89.60	87.78 NS	94.24 NS	91.68 NS	90.87	89.76 NS	82.64 NS	91.69 NS
SE	0.68	2.02	3.99	2.55	0.99	2.72	8.41	2.37
N	5417	777	193	1121	878	242	33	287
<b>Abuse</b>								
Mean	97.21	93.64 †	99.84 ***	98.15 NS	98.23	97.47 NS	100.00 ***	98.60 NS
SE	0.27	1.91	0.12	0.59	0.41	1.00	0.00	0.99
N	7883	828	266	1283	1227	239	33	309
<b>Heavy Use</b>								
Mean	96.89	93.73 *	99.41 ***	97.40 NS	97.66	96.07 NS	91.89 NS	98.28 NS
SE	0.21	1.47	0.36	0.64	0.47	1.35	5.64	0.68
N	12786	980	347	1578	1424	338	42	489
<b>DRUGS</b>								
<b>Lifetime</b>								
Mean					94.18	91.02 †	93.00 NS	92.40 NS

	NSDUH					NESARC					
	Whites	Blacks	Asians	Latinos	Whites	Blacks	Asians	Latinos	Whites	Blacks	Latinos
<b>Umnet Need</b>											
<b>SE</b>					0.52	1.67		1.62		4.14	
<b>N</b>					2553	558		552		51	
<b>Dependence</b>											
<b>Mean</b>	84.43	81.59 NS	94.61 **	85.96 NS	68.34	78.55 NS	77.62 NS	67.02 NS			
<b>SE</b>	0.98	3.25	2.95	2.50	4.21	7.40	18.95	10.95			
<b>N</b>	3480	723	103	615	129	51	7	46			
<b>Abuse</b>											
<b>Mean</b>	93.09	90.98 NS	89.30 NS	97.08 †	89.19	90.15 NS	100.00 ***	90.61 NS			
<b>SE</b>	1.08	3.17	9.03	1.96	1.85	4.00	0.00	3.53			
<b>N</b>	1537	279	61	356	359	99	12	94			
<b>Use</b>											
<b>Mean</b>	94.27	88.26 **	95.40 NS	95.56 NS	91.49	87.76 NS	93.92 NS	87.08 NS			
<b>SE</b>	0.37	1.80	2.46	0.89	0.99	3.15	3.37	3.29			
<b>N</b>	14392	1493	420	2427	893	175	41	260			

\*\*\* < .001  
 \*\* < .01  
 \* < .05  
 † < 0.10

**Table 4**

Logistic Regressions for Likelihood of Unmet Need for Specialty Treatment Across Need Categories

	Perceived Need			
	NSDUH		NESARC	
	Model 1 N=1254	Model 2 N=1241		
<b>RACE</b>				
Whites	1.00	1.00		
Blacks	0.98 (0.47 - 2.03)	1.01 (0.47 - 2.16)		
Asians	6.37 (0.78 - 52.11) <sup>†</sup>	7.02 (0.84 - 58.64) <sup>†</sup>		
Latinos	0.98 (0.47 - 2.08)	1.00 (0.46 - 2.17)		
	Lifetime Substance			
	NSDUH		NESARC N=12343	
			Model 1	Model 2
<b>RACE</b>				
Whites			1.00	1.00
Blacks			0.57 (0.40 - 0.82)**	0.92 (0.62 - 1.34)
Asians			0.74 (0.28 - 1.92)	0.68 (0.26 - 1.77)
Latinos			0.77 (0.46 - 1.27)	0.96 (0.60 - 1.52)
	Past Year Substance			
	NSDUH N=21318		NESARC N=3591	
	Model 1	Model 2	Model 1	Model 2
<b>RACE</b>				
Whites	1.00	1.00	1.00	1.00
Blacks	0.70 (0.51 - 0.97)*	1.02 (0.74 - 1.40)	0.78 (0.49 - 1.25)	1.05 (0.65 - 1.69)
Asians	3.09 (1.05 - 9.09)*	2.59 (0.88 - 7.61) <sup>†</sup>	0.70 (0.22 - 2.21)	0.64 (0.20 - 2.00)
Latinos	1.30 (0.92 - 1.83)	1.66 (1.17 - 2.35)**	1.03 (0.56 - 1.88)	1.15 (0.61 - 2.16)
	Heavy Drink/Any Use Drugs without Past Year Substance Disorder			
	NSDUH N=15088		NESARC N=1734	
	Model 1	Model 2	Model 1	Model 2
<b>RACE</b>				
Whites	1.00	1.00	1.00	1.00
Blacks	0.24 (0.13 - 0.47)***	0.35 (0.16 - 0.75)**	0.26 (0.09 - 0.80)*	0.45 (0.15 - 1.32)
Asians	0.57 (0.10 - 3.31)	0.47 (0.07 - 3.11)	0.21 (0.05 - 0.89)*	0.11 (0.02 - 0.55)**
Latinos	0.98 (0.49 - 1.95)	1.35 (0.68 - 2.67)	0.40 (0.11 - 1.42)	0.60 (0.13 - 2.75)

\*\*\*  
< .001



\*\*  
< .01

\*  
< .05

+  
< 0.10