Published in final edited form as:
Alcohol Clin Exp Res. 2011 August ; 35(8): 1458–1466. doi:10.1111/j.1530-0277.2011.01482.x.

Ten Year Trends (1992 to 2002) in Sociodemographic Predictors and Indicators of Alcohol Abuse and Dependence among Whites, Blacks, and Hispanics in the U.S

Raul Caetano, MD, PhD[1], **Jonali Baruah, PhD**[2], and **Karen Chartier, PhD**

[1] University of Texas School of Public Health, Dallas Regional Campus, 5323 Harry Hines Blvd., V8.112, Dallas TX 75390-9128

[2] Department of Psychology, Southern Methodist University, Dallas, Texas

Abstract

Background—The objective of this paper is to examine 10-year trends (1992–2002) in the number and type of indicators of DSM-IV abuse and dependence among Whites, Blacks and Hispanics in the U.S.

Methods—Data are from the 1991–1992 National Longitudinal Alcohol Epidemiologic Survey (NLAES; *n* = 42,862) and the 2001–2002 National Epidemiologic Study on Alcohol and Related Conditions (NESARC; *n* = 43,093). Both surveys used multistage cluster sample procedures to select respondents 18 years of age and older from the U.S. household population.

Results—Increases in the prevalence of alcohol abuse between 1992 and 2002seem associated to a rise in the prevalence of the indicator for “hazardous use”, which usually means reports of driving after drinking. The decrease in dependence was not associated with changes in a particular indicator. In addition, both in 1992 and 2002, 12.3% to 15.4% of the men and 5.2% to 7.9% of the women were diagnostic “orphans”. These respondents reported 1 or 2 indicators of alcohol dependence as present.

Conclusion—The observed trends in number and types of indicators of DSM-IV alcohol abuse and dependence were probably triggered by a complex interplay between individuals’ volume and pattern of drinking and reactions from the drinkers’ social environment. The close association between hazardous use of alcohol and the prevalence of abuse deserves further discussion. A medical diagnostic category should not be so dependent on a criterion that may be influenced by social situations. It is necessary to understand more about diagnostic “orphans” to better design interventions to address their problems.

Keywords

Ethnicity; Race; Alcohol Abuse and Dependence; Whites; Blacks; Hispanics

INTRODUCTION

Alcohol use disorders, abuse and dependence, are an important public health problem in the U.S. Twelve month trend data from the National Epidemiologic Study on Alcohol and Related Conditions (NESARC) show that from 1992 to 2002 alcohol abuse rose from 3.03% to 4.65%, and dependence fell from 4.38% to 3.81% in the U.S. (Grant et al., 2004).

CORRESPONDING AUTHOR/REPRINTS: Raul Caetano, MD, PhD 5323 Harry Hines Blvd. Room V8.112, Dallas, Texas 75390-9128, Phone: (214) 648-1080, Fax: (214) 648-1081, Raul.Caetano@UTSouthwestern.edu.

Altogether, in 2002, about 8.5% of the U.S. adult population 18 years of age or older had an alcohol use disorder. A second national data set, the 2008 National Survey on Drug Use and Health (NSDUH) (Substance Abuse and Mental Health Services Administration [SAMHSA], 2009) also indicates that the prevalence of alcohol use disorders among adults 18 years of age and older is 8.5% (estimated by the authors). However, contrary to NESARC, trend data from the NSDUH for the population 12 years of age or older show almost no variation in the rate of abuse and dependence between 2002 and 2008 (range between 7.8% and 7.3%) (SAMHSA, 2009). A third national survey, the National Comorbidity Survey Replication (NCS-R) (Kessler et al., 2005), reported 12-month rates of 3.1% for abuse and 1.3% for dependence, both of which are lower than those reported in the NESARC and the NSDUH. It is unclear as to why these NCS-R rates are lower. Given that each survey used a specific diagnostic instrument to identify abuse and dependence, differences in the implementation of diagnostic procedures during fieldwork could have triggered the observed differences in rates.

Like many other health problems, alcohol abuse and dependence do not affect all individuals equally. Men are about 2.5 times more likely than women to have alcohol abuse or dependence. Compared to those 65 years of age and older, the odds of developing an alcohol use disorder (12-month data) are 13.2 (99% CI: 9.44–18.5) in the 18–29 age group, 8.1 (99% CI: 5.8–11.2) in the 30–44 age group, and 4.1 (99% CI: 2.9–5.7) in the 45 to 64 age group (Hasin et al., 2007). Others who are also more at risk for alcohol use disorders are those who never married, or who are widowed/separated/divorced, those with lower education, and those with an annual family income below $35,000 (Grant and Dawson, 1997; Hasin et al., 2007).

Ethnicity is another important sociodemographic factor associated with alcohol abuse and dependence. However, this association is complex and not always consistent across different studies. NESARC 12-month prevalence data show slightly higher rates of abuse for Whites (5.1%) than for Blacks (3.3%) and Hispanics (3.9%) (Grant et al., 2004). Data for dependence are more similar, with rates of 3.8% for Whites, 3.6% for Blacks and 3.9% for Hispanics. Odds ratios of 12-month abuse and dependence adjusted for sociodemographic characteristics show the effect of Black and Hispanic ethnicity to be protective against both abuse and dependence versus White ethnicity (Hasin et al., 2007). The NSDUH also shows similar 12-month rates for abuse plus dependence across Whites (7.5%), Blacks (6.6%) and Hispanics (8%) (SAMHSA, 2009). Recent studies have also reported considerable variation in the prevalence of abuse and dependence by birthplace (U.S. versus abroad) and national origin among Hispanics (Alegria et al., 2007; Caetano et al., 2009).

The objective of this paper is to expand previous analyses of DSM-IV abuse and dependence conducted with NLAES and NESARC data to examine 10-year trends (1992–2002) in the number and type of indicators of abuse and dependence among Whites, Blacks and Hispanics in the U.S.. Overall rates of abuse and dependence are estimated as a complement to the indicator analysis. Also, because Mulia et al. (2009) reported a higher rate of alcohol-related problems (social and dependence-related) among Blacks in analysis of drinkers only, overall rates of abuse and dependence are estimated for the whole population, including abstainers and drinkers, and also for drinkers only. Previous analyses of DSM-IV abuse and dependence have not examined alcohol abuse and dependence indicator level data. This information has only been analyzed in papers examining the dimensional structure of the abuse and dependence constructs (e.g., Carle, 2009; Keyes and Hasin, 2008; Langenbucher et al., 2004; Martin et al., 2006; Proudfoot et al., 2006; Saha et al., 2007). Examining trends in the number of indicators and type of indicators of abuse and dependence reported is important. First, the number of indicators reported by respondents provides information about the overall severity of abuse and dependence across ethnic

groups. Second, prevalence data on specific indicators provide information about the types of symptoms and behaviors that lead to a diagnosis of abuse or dependence in different ethnic groups.

MATERIALS AND METHODS

Sample

Data came from the 1992 National Longitudinal Alcohol Epidemiology Study (NLAES) and the 2001–2002 National Epidemiologic Study on Alcohol and Related Conditions (NESARC), both sponsored and designed by the National Institute on Alcohol Abuse and Alcoholism (NIAAA) with fieldwork conducted by the U.S. Bureau of the Census. The NLAES interviewed 42,862 and the NESARC interviewed 43,093 U.S. adults 18 years of age or older randomly selected from the U.S. household population. The NESARC included Hawaii and Alaska in the sampling frame, whereas the NLAES did not. The NLAES oversampled Blacks and young adults between the ages of 18 and 29, while the NESARC oversampled both Blacks and Hispanics. Additionally, both surveys interviewed military personnel living off base and individuals in group quarters such as boarding/rooming houses, non-transient hotels/motels, shelters, facilities for housing workers, college quarters and group homes. The household and the sample person response rates were 92% and 97% for the NLAES and 89% and 93% for the NESARC, respectively.

The 2 data sets were weighted to adjust for probabilities of selection; respondent differential probability of selection at the household level, oversampling among young adults, and non-response at the household or at person levels. Finally, a post-stratification weight was created to adjust data from each survey to the distribution of the U.S. household population according to region, age, sex, race and ethnicity (Grant et al., 2003). Sampling weights and the identification of the complex sample structure was also made uniform for analyses purposes, following recommendations by NESARC staff at the National Institute on Alcohol Abuse and Alcoholism.

Both surveys collected data through personal interviews conducted in respondents' homes by trained interviewers. NLAES used a paper and pencil survey instrument whereas NESARC used a computerized survey instrument. The data analyzed in this paper are strictly comparable in both the surveys. Thus, NESARC data collected in Hawaii and Alaska are not considered in this paper.

Measurements

Alcohol abuse and dependence—The diagnostic instrument was the Alcohol Use Disorders and Associated Disabilities Interview (AUDADIS-IV). This is a standardized psychiatric interview that can be used by trained lay interviewers and which allows for a diagnosis of abuse and dependence according to DSM-IV criteria. The inter-rater reliability of the AUDADIS has been established. Kappa coefficients range from .70 to .84 (Canino et al., 1999; Chatterji et al., 1997; Grant et al., 2003; Grant et al., 1995; Hasin et al., 1997; Keyes and Hasin, 2008).

A positive diagnosis of alcohol abuse required that at least 1 or more of 4 indicators had been present at some time in the 12-month period preceding the interview and that concurrently the criteria for DSM-IV alcohol dependence had not been met. The 4 indicators of alcohol abuse are: drinking resulting in failure to fulfill major role obligations; recurrent drinking in hazardous situation; drinking-related legal problems; and continued drinking despite social and interpersonal problems. Non-recurrent alcohol-related legal problems were used for both survey years in the current analysis. A positive diagnosis of alcohol

dependence required that 3 or more of the following 7 indicators had been present in the 12-month period preceding the interview: tolerance; the withdrawal symptom or drinking to relieve the withdrawal symptoms; drinking larger amounts for longer period than intended; unsuccessful attempt to cut down on drinking; spending a great deal of time obtaining alcohol, drinking or recovering from the effects of drinking; giving up important social, occupational or recreational activities in favor of drinking; and continued drinking despite a physical or psychological problem caused or exacerbated by drinking. There is some variation between surveys in the measurement of the alcohol abuse and dependence indicators (cf. Grant et al., 2004).

Diagnostic Orphans—Individuals who report 1 or 2 indicators of alcohol dependence in the past 12 months are not considered alcohol dependent, given that the DSM-IV criteria requires the presence of 3 indicators in that time span. These individuals have been identified in the literature (e.g., Hasin and Paykin, 1998, 1999) as “diagnostic orphans”.

Alcohol variables—Drinkers are those respondents who had at least 12 drinks of any kind of alcohol in the past year. Respondents who did not have 12 drinks in the past year or never had any kind of alcohol in their lifetime were grouped as non-drinkers. A drink was defined as containing 0.60 ounces of ethanol in both the NLAES and NESARC. *Mean number of drinks per month.* For each specific beverage (wine, beer and liquor), volume was computed by multiplying the number of drinks consumed per occasion by the frequency with which the specified number of drinks was consumed. Totals for each beverage were summed and divided by 12 to estimate the average number of drinks consumed per month.

Other sociodemographic variables—Age: Respondents were grouped into 5 categories based on self reported age: 1) 18–29; 2) 30–39; 3) 40–49; 4) 50–59; and 5) 60 years or older. Race/ethnicity: This was based on self-identification. Respondents were divided into the following 3 categories: 1) White, not Hispanic or Latino; 2) Black, not Hispanic or Latino; and 3) Hispanic or Latino. Place of birth: This variable had 2 categories: 1) born in the U.S.; or 2) born outside the U.S. (including territories). Education: Respondents selected 1 of the following 4 categories to indicate the highest educational level attained: 1) less than high school; 2) completed high school or general educational development (GED) credential; 3) some college/technical education; and 4) college degree. Marital status was divided into 3 categories: 1) married/living with someone; 2) widowed, divorced or separated; and 3) never married. Household income: Respondents were asked to indicate their total household income, grouped: 1) less than $15000; 2) $15000–$29999; 3) $30000–$49999; 4) $50000–$74999; and 5) ≥ $75000. Survey year: The analysis herein uses a data set in which the 2 surveys were merged. Therefore, a separate variable (1=NLAES; 2=NESARC) was created to identify respondents in each of the 2 surveys.

Analysis Procedure

Because of the multicluster nature of the sample design of the NESARC and the NLAES, the Software for Survey Data Analysis (SUDAAN) (Research Triangle Institute, 2008) was used to estimate the standard errors of all the prevalence data estimates. SUDAAN estimates standard errors by using Taylor series linearization to adjust for complex survey sample designs. Past 12-month prevalence rates were calculated for alcohol abuse and dependence diagnoses, as well as for individual indicators. The χ^2 statistic tested differences in the proportions between survey years. Logistic regressions predicted past year alcohol abuse and dependence using sociodemographic and drinking variables.

RESULTS

Prevalence and Indicators of Alcohol Abuse

The overall prevalence of alcohol abuse in Table 1 is lower than expected from the indicator-level data in the Table because some respondents reporting a particular abuse indicator are also alcohol dependent and as such are not counted in estimation of the diagnosis of abuse. In NLAES, a total of 63% of the respondents with a dependence diagnosis were also alcohol abusers. In NESARC, the proportion was 65%. Turning to the results in the Table, from 1992 to 2002, the prevalence of alcohol abuse increased significantly among both men and women in all 3 ethnic groups, with the exception of Hispanic women. The rates were higher for men than women both in 1992 and 2002 (Table 1). Data for drinkers only (not shown) reproduce this finding. Rates for White male drinkers (1992: 9.4%; 2002: 11.4%) remain higher than rates for Blacks (1992: 5.7%; 2002: 10.8%) and Hispanics (1992: 8.3%; 2002: 10.3%). Among women, rates for White drinkers (1992: 4.6%; 2002: 6.1%) are also higher than rates for Black (1992: 3.4%; 2002: 4.6%) and Hispanic (1992: 4.0%; 2002: 5.2%) drinkers.

Among men, the most prevalent indicator of alcohol abuse is hazardous use, independent of year of survey (Table 1). Trends in alcohol abuse indicators show a significant increase in the proportion of hazardous use among White and Black men. Among White men, there also was a significant decrease in the proportion of legal problems reported. The prevalence of "failure to fulfill role obligations" decreased in all 3 groups for men. Indicator prevalence is lower among women than among men. Among women, hazardous use prevalence increased from 1992 to 2002 in all 3 ethnic groups. The prevalence of the indicator failure to fulfill major role obligations decreased among White women only.

A comparison of the overall prevalence rate of abuse with the prevalence rate for each abuse criteria shows that most of the diagnosis of alcohol abuse is probably due to the hazardous drink criterion in all 3 ethnic groups, independent of gender. This is because a positive diagnosis of abuse requires the presence of only 1 criterion.

Number of Abuse Indicators Reported

Most men reporting indicators reported 1 indicator of abuse only both in 1992 and 2002, independent of ethnic group (Table 2). The proportion of men reporting 1 abuse indicator also increased in all 3 groups, but the increase was more pronounced among White (a third) and Black men (almost doubled) than among Hispanic men (a percent point). The same is true for women, but because the proportion of women reporting any indicator as present is lower than the proportion of men, the increase in prevalence was smaller and not larger than 1 percentage point.

Prevalence and Indicators of Alcohol Dependence

From 1992 to 2002, the prevalence of alcohol dependence decreased significantly among White and Hispanic men but was stable among Black men (Table 3). As a result, while Hispanic men had higher rates of dependence than Whites and Blacks in 1992, the rates were similar across the 3 ethnic groups in 2002. Rates for 'drinkers only' followed the same pattern of decline between 1992 and 2002, with a larger drop among Hispanics than among Whites and Blacks (data not shown). However, rates among drinkers were slightly higher among Black men (1992: 12.7%; 2002: 9.7%) and Hispanic men (1992: 17.7%; 2002: 9.8%) than among White men (1992: 10.6%; 2002: 8.5%).

The most prevalent alcohol dependence indicators in all 3 ethnic groups were tolerance, unsuccessful attempts to cut down, drinking larger amounts and drinking for longer than

intended, and withdrawal symptoms (Table 3). Variation in the prevalence of several indicators between 1992 and 2002 was ethnic-specific and did not follow a clear pattern. The prevalence of the indicator large amount of drink/drinking longer period decreased among White and Hispanic men; while the prevalence of withdrawal symptoms decreased among men in all 3 ethnic groups. The prevalence of the indicator give up activities decreased only among White men. The prevalence of the indicator continued drinking despite knowledge of having a persistent or recurrent physical or psychological problem caused by drinking increased only among White men.

Among women, the prevalence of dependence remained stable, never rising above 2.7% across all 3 ethnic groups between 1992 and 2002. Rates for drinkers among women declined in all 3 ethnic groups (data not shown). As a result of the pattern of decline, the 2002 rates among Black women (1992: 10.5%; 2002: 8.0%) and Hispanic women (1992: 9.0%; 2002; 6.1%) were slightly higher than among White women (1992: 7%; 2002: 5%).

The indicators with highest prevalence were the same as for men: tolerance, unsuccessful attempts to cut down, drinking larger amounts and longer than intended, and withdrawal symptoms (Table 3). Variation in prevalence rates for different indicators between 1992 and 2002 was ethnic-specific and of small magnitude, never being much larger than about 1%. The prevalence of tolerance and withdrawal decreased among White women. Time spent in drinking increased in all 3 ethnic groups, and continued drinking despite knowledge of having problems increased among White and Hispanic women.

Number of Dependence Indicators Reported

Among men, the number of dependence indicators is similar across ethnic groups and does not show much variation in rates between 1992 and 2002 (Table 4). Most men reporting dependence indicators reported between 1 and 3 indicators. Because the diagnosis of dependence requires at least 3 indicators to be present in the past 12 months, there is a considerable proportion of men, between 12.3% and 15.4% in 1992 and 2002, who are diagnostic “orphans”. These are the men who report 1 or 2 indicators of alcohol dependence as present. Among women, the data on number of indicators reported show a pattern similar to that seen for men. Between 5.2% and 7.9% of the women report 1 or 2 indicators, and as such are also diagnostic “orphans.” A low proportion of women (between 1.6% and 1.0%) in both surveys and across ethnic groups report 3 indicators, with even a lower proportion reporting 4 to 7 indicators.

Sociodemographic Correlates of Alcohol Abuse and Dependence

Logistic regression analysis was performed to identify the sociodemographic predictors of alcohol abuse among the 3 ethnic groups (Table 5). Blacks in 1992 were less likely than Whites in the same year to report alcohol abuse. In contrast, both Hispanics and Whites in 2002 were more likely to report alcohol abuse than Whites in 1992. Factors of risk for alcohol abuse were: being a male, age, being widowed, divorced or separated, having never married, and volume of alcohol consumed. In regards to age, results show a clear linear and positive relationship between older age and decreasing risk of alcohol abuse. Protective factors included being foreign born, having less than a high school education, and reporting less than $15,000 for household income.

Regarding alcohol dependence, Blacks in 1992 and 2002 were less likely to be alcohol dependent than Whites in 1992. Risk factors for alcohol dependence were: being male, age, having some college education or a technical degree, being widowed, divorced or separated, being never married, and volume of alcohol consumed. As with abuse, being foreign born was protective for alcohol dependence.

DISCUSSION

Indicator-level results were ethnic-specific both among men and women. Hazardous use was the most prevalent indicator among men and women in 1992 and was the only indicator that showed a significant increase in prevalence among all groups, with exception of Hispanic men. This is important because results in Table 2 show that most men and women report 1 indicator of abuse, and that given the prevalence of the indicators, most respondents are probably reporting hazardous use. In other words, as indicated by Hasin and Paykin (1999) and Keyes and Hasin (2008), this suggests that most diagnoses of alcohol abuse in the U.S. are based on reports of hazardous use of alcohol, which usually means driving after having too much to drink. In spite of being frequently reported by respondents the link between hazardous use and the diagnosis of alcohol abuse is inappropriate. As discussed by Babor and Caetano (2008), the link makes a specific psychiatric diagnosis dependent on access to cars and, thus, also dependent on socioeconomic status. In fact, Babor and Caetano's (2008) analyses of 3 different surveys with populations with different access to cars (lowest in Brazil, middle among U.S. Hispanics, highest in U.S. as a whole) showed alcohol abuse rates based on the presence of hazardous drinking distributed in the expected direction: Brazil, 27%; U.S. Hispanics, 36%; U.S. as a whole based on NESARC, 69%.

Trend analyses for indicators of dependence show that 2 indicators whose prevalence decreased the most between 1992 and 2002 among Hispanic men were drinking larger amounts and for longer than intended and withdrawal symptoms. These 2 indicators are considered as cardinal symptoms of biological addiction to alcohol, and as such should not be influenced by the social environment reacting to drinkers' drinking. In fact, their prevalence should be linked because 1 of the possible reasons for drinking longer and larger amounts of alcohol could be withdrawal avoidance. A decrease in the prevalence of these indicators could be associated with a decrease in heavier drinking. However, trends data on drinking between 1992 and 2002 do not show a decline in mean number of drinks consumed, in the frequency of drinking 5 or more drinks in a day or in the frequency of intoxication among Hispanics. An increase in treatment among Hispanics could also lead to a drop in the prevalence of dependence, but this increase has not been documented (Schmidt et al., 2007). Therefore, it is difficult to fully explain the drop in alcohol dependence.

There also are a considerable proportion of men and women in all 3 ethnic groups who are diagnostic "orphans", reporting 1 or 2 indicators of alcohol dependence. The proportions of such "orphans" among men and women are about 2 times higher than the proportion of people diagnosed as alcohol dependent. In spite of this relatively high proportion, these individuals have been, for the most part, ignored in diagnostic classifications. Hasin and Paykin (1998) showed that "orphans" are different in sociodemographic variables, binge drinking, current drug use, family history of alcoholism and alcohol treatment from those with no diagnosis or those who are alcohol dependent. During follow-up, "orphans" were not more likely to become positive for a diagnosis of alcohol dependence than those without a diagnosis. Hasin and Paykin (1999) reported similar findings for analyses using the NLAES sample. "Orphans" were distinct from those with a full diagnosis of dependence and from those without a diagnosis in that sample. Sarr and colleagues (2000), Eng and colleagues (2003) and Hartford and colleagues (2010) reported similar findings. Hartford et al. (2010) also reported that "orphans" were more likely to develop an alcohol use disorder than those without any symptoms.

Results from the logistic regression indicate that trends in abuse and dependence are ethnic-specific, once the effect of sociodemographic factors and volume of drinking are controlled for in the analysis. Both Whites and Hispanics in 2002 were more likely to report abuse than Whites in 1992, but this does not apply to Blacks. Odds ratios indicating the likelihood of an

abuse diagnosis between Blacks in 2002 and Whites in 1992 were not significant, which can also be inferred from the rates in Table 1. It is difficult to identify specific causes for these differences in trends across ethnic groups. Ethnic groups are at different places in the socioeconomic ladder, many still live in segregated neighborhoods, and have different attitudes and norms governing alcohol use (Caetano and Clark, 1998a). So, it should not be a surprise that they develop different trends, especially for alcohol abuse, a diagnosis that is more related to social and personal factors than dependence. Considering the decline in drinking in the U.S. reported from the beginning of the 1980s to the late 1990s, a time for different trends in drinking and problems across ethnic groups (Caetano and Clark, 1998a), Grant et al. (2004) suggest that more negative views about drinking associated with these changes in drinking may lead to increases in the prevalence of abuse. Recent trend analysis using NLAES and NESARC data identified a trend for a higher likelihood of reporting drinking 5 or more drinks in a day at least once a month and getting intoxicated among respondents in NESARC than in NLAES, independent of ethnicity (Caetano et al., 2010). This could be associated with the increase in the prevalence of alcohol abuse.

Other factors of risk for abuse are male gender, younger age, being widowed, separated or divorced and never married and, not surprisingly, a higher volume of drinking. These are relatively well established factors of risk for abuse. Males have higher rates of alcohol use disorders than women, and those in the younger age group are known to take more risks and have drinking patterns that include a higher frequency of binge drinking, which leads to more problems (Dawson et al., 1995). Those who are not married may also have a lifestyle that is conducive to drinking in a style that leads to problems (drinking in hazardous situations) associated with a diagnosis of abuse.

Factors of risk for dependence are male gender, younger age, some college or technical education, being widowed, separated or divorced and having never married. These are similar to the risk factors for abuse, which is not totally surprising. Their association with dependence is based on the same reasons for which they are linked to alcohol abuse, drinking patterns with a higher frequency of binge drinking and a higher frequency of risk taking behaviors. These findings are also consistent with previous studies (Grant, 1997; Hasin et al., 2007).

Black ethnicity is protective against dependence both in NLAES and NESARC compared to White ethnicity in NLAES. Grant (1997) reported that Black ethnicity was protective of lifetime alcohol dependence in analysis of the NLAES. Hasin et al. (2007) also reported Black ethnicity as protective against both 12-month and lifetime dependence in other analysis of NESARC data. The National Survey on Drug Use and Health of 2008 has 12-month prevalence rates for alcohol use disorders for the population 12 years of age and older that are similar for Blacks (6.6%) and Whites (7.2%) (SAMHSA, 2009). Blacks could have similar prevalence rates and yet have a more severe presentation of alcohol dependence than Whites, but this is not true in the analysis here. If the number of dependence criteria reported is taken as an indicator of the severity of dependence, the distribution of the number of criteria reported is similar between Whites and Blacks. Previous analyses have reported higher rates of alcohol-related problems among Blacks than Whites (Caetano and Clark, 1998b; Herd, 1994; Jones-Webb et al., 1997). Recently, Mulia et al. (2009) reported an analysis based on drinkers and with non-DSM IV measures of social and dependence-related problems. Black drinkers had higher rates of social and dependence-related problems than White drinkers, especially at low and moderate levels of heavy drinking. Differences between Blacks and Whites were minimized but did not disappear when the effect of heavy drinking, demographics and racial/social stigma were controlled for in regression models.

Conclusions

The increase in the prevalence of abuse seems to be mostly due to an increase in the prevalence of the indicator hazardous use, which usually means reports of driving after drinking. Indicators of abuse, and to some extent indicators of dependence, arise from the volume and pattern of drinking as well as from reactions from the drinkers' social environment. It is likely that the trends identified in the analysis were triggered by a complex interplay between these factors. In addition, both in 1992 and 2002, a considerable proportion of individuals among Whites, Blacks and Hispanics were diagnostic "orphans", reporting 1 or 2 dependence indicators. It is necessary to understand more about this group and the course of these indicators in this group of drinkers to better design interventions to address their problems. If these "orphans" merit treatment but do not receive treatment because of restrictions in reimbursement policies, they should certainly be the subject of brief interventions to address their problems.

Strengths and Weaknesses

NLAES and the NESARC are large household population surveys with outstanding response rates. Results from these 2 surveys are generalizable to the U.S. population and the ethnic groups under focus. The data were collected in face-to-face interviews with a standardized psychiatric interview, the AUDADIS, which implements DSM-IV diagnosis for alcohol abuse and dependence with a high level of reliability and validity. Black respondents were oversampled in the NLAES and both Black and Hispanic respondents were oversampled in the NESARC. The surveys also have a few limitations. There were some slight variations in data collection that could have affected the comparison of results across surveys. Household surveys fail to interview the homeless and those institutionalized, which are population groups with a higher prevalence of abuse and dependence. Survey respondents have a tendency to underreport alcohol consumption and may also underreport consequences, such as those used as indicators of abuse and dependence.

Acknowledgments

SOURCES OF FUNDING: The National Epidemiologic Survey on Alcohol and Related Conditions (NESARC) and the National Longitudinal Alcohol Epidemiologic Survey (NLAES) were conducted and funded by the National Institute on Alcohol Abuse and Alcoholism (NIAAA). NESARC had supplemental support from the National Institute on Drug Abuse (NIDA). Work on this paper was supported by grant # R01AA016319-01A2 from the National Institute on Alcohol Abuse and Alcoholism to the University of Texas, School of Public Health.

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Alcohol Clin Exp Res. Author manuscript; available in PMC 2012 August 1.

Table 1

Prevalence of alcohol abuse and abuse indicators among Whites, Blacks and Hispanics in the U.S. population by gender and survey year (NLAES=1992; NESARC=2002; *N* = 81767)

Males	**White**		**Black**		**Hispanic**	
	1992 (*n*=13600)	**2002 (*n* =10845)**	**1992 (*n*=2100)**	**2002 (*n*=3041)**	**1992 (*n*=1194)**	**2002 (*n*=3722)**
Alcohol Abuse (%)	5.50	7.39[c]	2.67	5.71[c]	4.40	6.21[a]
Abuse Indicators (%)						
Interpersonal problems	2.26	2.40	2.45	2.59	2.87	3.92
Hazardous use	8.09	10.38 [c]	3.97	6.92[c]	6.82	7.53
Legal problems	1.28	0.87[b]	1.20	0.94	1.42	1.83
Major role obligations	3.18	0.97[c]	2.13	0.96[a]	2.99	1.45[a]

Females	**White**		**Black**		**Hispanic**	
	1992 (*n*=18338)	**2002 (*n* =13662)**	**1992 (*n*=3855)**	**2002 (*n*=5204)**	**1992 (*n*=1620)**	**2002 (*n*=4586)**
Alcohol Abuse (%)	1.76	2.87[c]	0.72	1.41[b]	0.95	1.65
Abuse Indicators (%)						
Interpersonal problems	0.61	0.79	0.67	0.79	0.33	0.63
Hazardous use	2.51	3.70[c]	0.96	2.01[b]	0.95	2.12[b]
Legal problems	0.22	0.29	0.16	0.27	0.21	0.07
Major role obligations	1.17	0.46[c]	0.74	0.47	0.39	0.29

Note: Proportions are weighted; Significance tests are the difference between survey years within ethnic/gender group;

[a] $p < 0.05$;

[b] $p < 0.01$;

[c] $p < 0.001$.

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Table 2

Number of abuse indicators among Whites, Blacks and Hispanics in the U.S. population by gender and survey year (NLAES=1992; NESARC=2002; *N* = 81767)

Males	White[c]		Black[a]		Hispanic	
	1992 (*n*=13600)	2002 (*n*=10845)	1992 (*n*=2100)	2002 (*n*=3041)	1992 (*n*=1194)	2002 (*n*=3722)
Abuse Indicators (%)						
0	90.10	88.59	93.86	91.40	90.98	90.22
1	6.35	9.04	3.80	6.52	5.00	6.22
2	2.40	1.63	1.45	1.51	3.06	2.51
3	0.90	0.61	0.49	0.41	0.85	0.71
4	0.23	0.13	0.39	0.15	0.11	0.34

Females	White[c]		Black		Hispanic[a]	
	1992 (*n*=18338)	2002 (*n*=13662)	1992 (*n*=3855)	2002 (*n*=5204)	1992 (*n*=1620)	2002 (*n*=4586)
Abuse Indicators (%)						
0	96.73	95.81	98.35	97.37	98.60	97.49
1	2.30	3.46	1.12	2.03	1.01	2.15
2	0.71	0.46	0.27	0.38	0.33	0.16
3	0.25	0.25	0.17	0.13	0.03	0.18
4	0.01	0.03	0.08	0.09	0.03	0.03

Note: Proportions are weighted; Significance tests are the difference between survey years within ethnic/gender group;

[a] $p < 0.05$;

[b] $p < 0.01$;

[c] $p < 0.001$.

Alcohol Clin Exp Res. Author manuscript; available in PMC 2012 August 1.

Table 3

Prevalence of alcohol dependence and dependence indicators among Whites, Blacks and Hispanics in the U.S. population by gender and survey year (NLAES=1992; NESARC=2002; *N* = 81767)

Males	**White**		**Black**		**Hispanic**	
	1992 (*n*=13600)	**2002 (*n* =10845)**	**1992 (*n*=2100)**	**2002 (*n*=3041)**	**1992 (*n*=1194)**	**2002 (*n*=3722)**
Alcohol Dependence (%)	6.18	5.40[a]	5.90	5.06	9.40	5.90[b]
Dependence Indicators (%)						
Tolerance	6.73	6.72	8.21	6.22[a]	9.62	9.02
Unsuccessful cut down	7.41	7.70	9.68	11.41	12.72	13.11
Larger/longer	13.10	10.50[c]	10.03	8.21	13.66	8.97[b]
Withdrawal	9.20	5.98[c]	7.76	4.58[b]	10.51	6.79[b]
Give up activities	1.19	0.79[a]	1.08	0.83	1.16	1.36
Time spent drinking	2.34	2.72	2.48	2.03	3.07	2.65
Continued despite problems	2.92	3.92[c]	3.28	3.37	4.35	4.36

Females	**White**		**Black**		**Hispanic**	
	1992 (*n*=18338)	**2002 (*n* =13662)**	**1992 (*n*=3855)**	**2002 (*n*=5204)**	**1992 (*n*=1620)**	**2002 (*n*=4586)**
Alcohol Dependence (%)	2.64	2.37	2.24	2.39	2.15	1.94
Dependence Indicators (%)						
Tolerance	4.09	2.92[c]	3.30	3.30	3.13	3.34
Unsuccessful cut down	3.57	4.01	3.59	4.58	2.80	3.89
Larger/longer	6.39	5.89	3.97	3.72	4.02	3.29
Withdrawal	4.44	3.70[a]	2.88	2.30	3.26	2.99
Give up activities	0.25	0.30	0.39	0.36	0.13	0.20
Time spent drinking	0.62	0.98[b]	0.62	1.22[a]	0.38	0.86[a]
Continued despite problems	1.06	1.82[c]	1.14	1.49	0.59	1.34[a]

Note: Proportions are weighted; Significance tests are the difference between survey years within ethnic/gender group;

[a] $p < 0.05$;

[b] $p < 0.01$;

[c] $p < 0.001$.

Table 4

Number of dependence indicators among Whites, Blacks and Hispanics in the U.S. population by gender and survey year (NLAES=1992; NESARC=2002; *N* = 81767)

Males	White[b]		Black		Hispanic[b]	
	1992 (*n*=13600)	2002 (*n*=10845)	1992 (*n*=2100)	2002 (*n*=3041)	1992 (*n*=1194)	2002 (*n*=3722)
Dependence Indicators (%)						
0	79.95	82.25	80.69	81.70	78.30	78.63
1	8.99	8.51	8.41	9.40	7.50	9.80
2	4.88	3.84	5.00	3.84	4.80	5.67
3	3.12	2.33	2.45	2.52	4.38	2.15
4	1.47	1.37	1.67	1.34	2.11	1.53
5	0.89	0.85	1.00	0.70	1.81	1.06
6	0.40	0.54	0.38	0.39	0.32	0.86
7	0.29	0.31	0.41	0.12	0.77	0.29

Females	White[b]		Black[a]		Hispanic	
	1992 (*n*=18338)	2002 (*n*=13662)	1992 (*n*=3855)	2002 (*n*=5204)	1992 (*n*=1620)	2002 (*n*=4586)
Dependence Indicators (%)						
0	89.60	89.76	92.56	92.45	92.64	91.79
1	4.92	5.51	3.26	3.33	3.50	4.19
2	2.84	2.36	1.95	1.83	1.71	2.09
3	1.47	1.01	1.08	1.15	1.55	1.05
4	0.70	0.73	0.69	0.26	0.35	0.38
5	0.28	0.37	0.15	0.56	0.17	0.24
6	0.14	0.18	0.23	0.26	0.05	0.19
7	0.06	0.06	0.09	0.17	0.03	0.08

Note: Proportions are weighted; Significance tests are the difference between survey years within ethnic/gender group;

[a] $p < 0.05$;

[b] $p < 0.01$;

[c] $p < 0.001$.

Table 5

Odds ratios and 95% confidence intervals for logistic regression analyses predicting past-year alcohol abuse and dependence in the U.S. population: 1992 to 2002 (*N* = 80209)

	Abuse		Dependence	
	OR	**95% CI**	**OR**	**95% CI**
Race and Survey Year (Ref: White/NLAES)				
Black/NLAES	0.40[c]	0.29–0.55	0.62[c]	0.50–0.78
Hispanic/NLAES	0.87	0.63–1.20	1.25	0.96–1.63
White/NESARC	1.46[c]	1.28–1.63	0.88	0.78–1.01
Black/NESARC	0.91	0.74–1.11	0.68[c]	0.55–0.84
Hispanic/NESARC	1.26[a]	1.03–1.54	0.84	0.63–1.11
Male (Ref: Female)	2.52[c]	2.28–2.78	1.40[c]	1.25–1.56
Foreign Born (Ref: U.S. born)	0.62[b]	0.48–0.81	0.78[a]	0.63–0.96
Age (Ref: ≥ 60)				
18–29	6.95[c]	5.66–8.55	15.95[c]	12.13–20.99
30–39	5.07[c]	4.19–6.15	9.58[c]	7.31–12.56
40–49	3.86[c]	3.17–4.70	5.85[c]	4.45–7.69
50–59	2.38[c]	1.89–2.99	2.61[c]	1.88–3.62
Education Level (Ref: College graduate +)				
< High school	0.70[b]	0.57–0.85	1.22	1.00–1.48
High school diploma/GED	0.94	0.82–1.08	1.05	0.89–1.23
Some college/Technical degree	1.10	0.96–1.25	1.21[a]	1.04–1.40
Income (Ref: ≥ $75,000)				
<$15,000	0.63[c]	0.52–0.78	1.12	0.92–1.36
$15,000–29,999	0.86	0.72–1.02	0.91	0.76–1.10
$30,000–49,999	0.85	0.72–1.01	0.87	0.72–1.05
$50,000–74,999	0.85	0.72–1.01	0.84	0.69–1.03
Marital Status (Ref: Married/Cohabitating)				
Widowed/Divorced/Separated	1.70[c]	1.50–1.93	1.80[c]	1.53–2.13
Never married	1.32[c]	1.16–1.50	1.92[c]	1.67–2.19
Drinking Volume (past 12 months)	1.01[c]	1.01–1.01	1.02[c]	1.02–1.02

Note: NLAES = 1992 National Longitudinal Alcohol Epidemiology Study; NESARC = 2002 National Epidemiologic Study on Alcohol and Related Conditions; GED = graduate equivalency degree;

[a] p< 0.05;

[b] p<0.01;

[c] p<0.001.