

BD 295: Alcohol Use and Abuse
Introductory Lectures
Professor Wesley Perkins
Spring 2016

Socio-Cultural Patterns of Use and **Consequences of Abuse**

- I. Patterns of Use**
- II. Measures of Problem Drinking**
- III. Societal Costs and “2nd Hand Effects”**

I. Patterns of Use

For example:

Age

Gender

Race

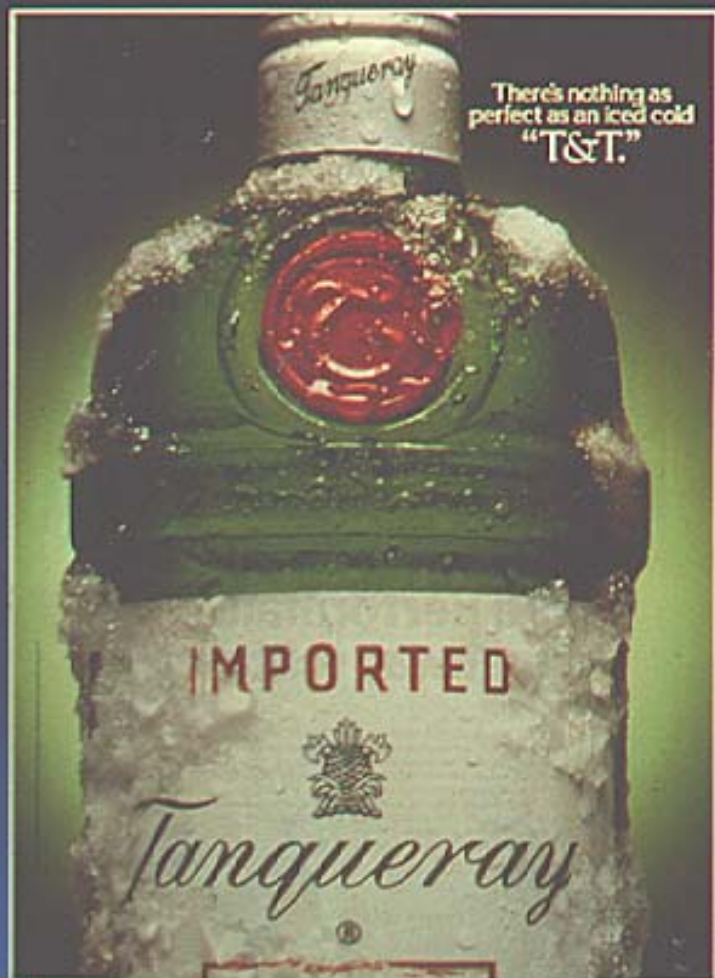
College/NonCollege

Type of Alcohol

Skewed concentration

U.S./International

Alcohol Sales in the United States

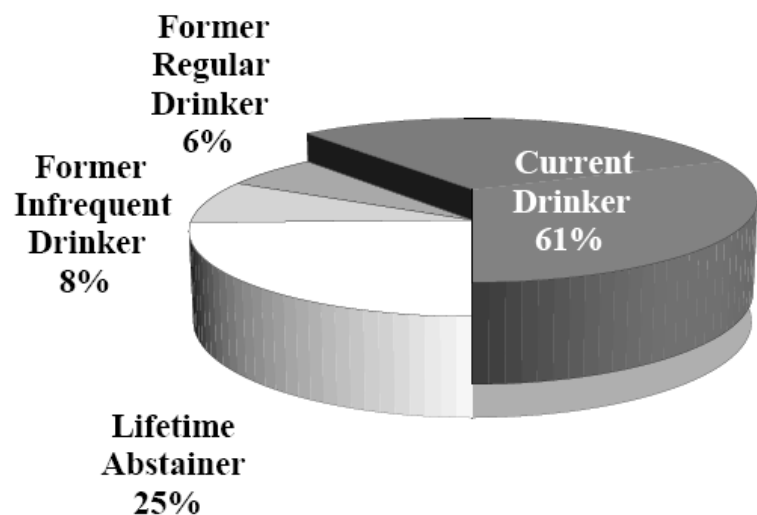


Purchases of alcoholic beverages represent over 50% of total dollars spent on beverages in the United States.

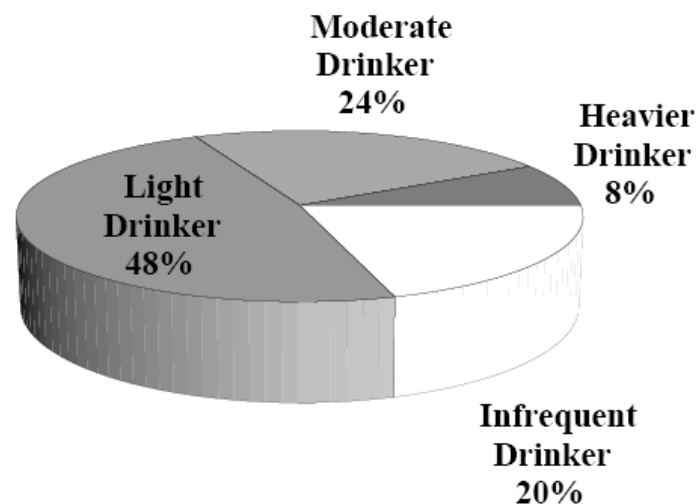
Source: Leiber and Mosher. *Alcohol Policy: A Public Health Perspective Slide Show Script*. Alcohol Policy Initiative Project, Trauma Foundation, San Francisco. Not Dated, p.19.



**While 61% of U.S. Adults
Are Current Drinkers . . .**



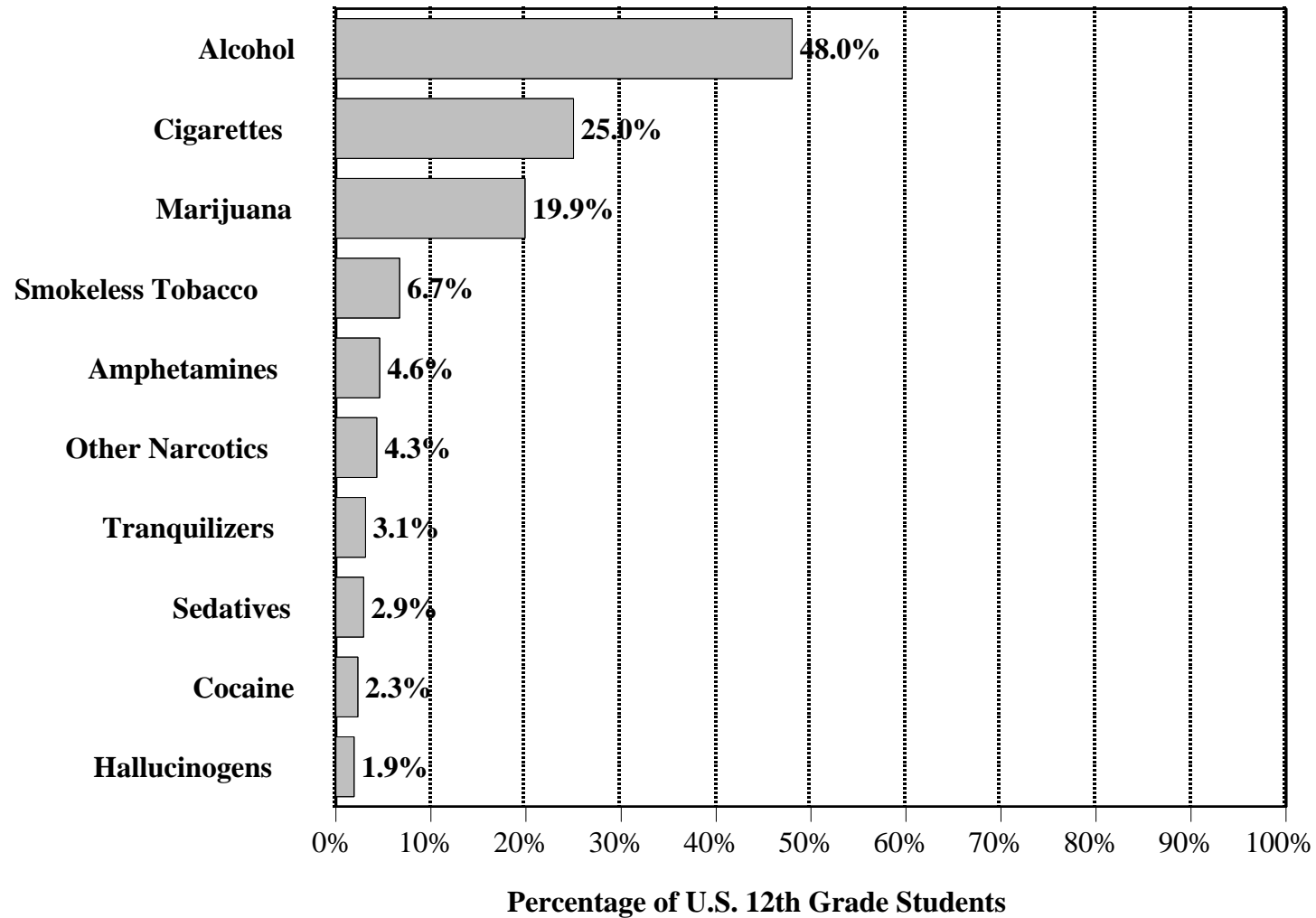
**. . . the Majority Are Infrequent
or Light Drinkers**



NOTES: Data are annual averages from the 2005 to 2007 National Health Interview Survey (NHIS), a survey of the U.S. civilian noninstitutionalized population collected using computer-assisted personal interviews of adults aged 18 years and older. *Lifetime Abstainer*: had fewer than 12 drinks in entire lifetime; *Former Infrequent Drinker*: had 12 drinks or more in lifetime, but never as many as 12 drinks in a single year, and had no drinks in the past year; *Former Regular Drinker*: had 12 drinks or more in one year, but no drinks in the past year; *Current Drinker*: had at least 12 drinks in lifetime and at least 1 drink in the past year; *Infrequent Drinker*: had at least 12 drinks in lifetime and 1-11 drinks in past year; *Light Drinker*: had 3 drinks or less per week, on average, in the past year; *Moderate Drinker*: had more than 3 and up to and including 14 drinks per week for men, and more than 3 and up to and including 7 drinks per week for women, on average, in the past year; *Heavier Drinker*: had more than 14 drinks per week for men and more than 7 drinks per week for women, on average, in the past year.

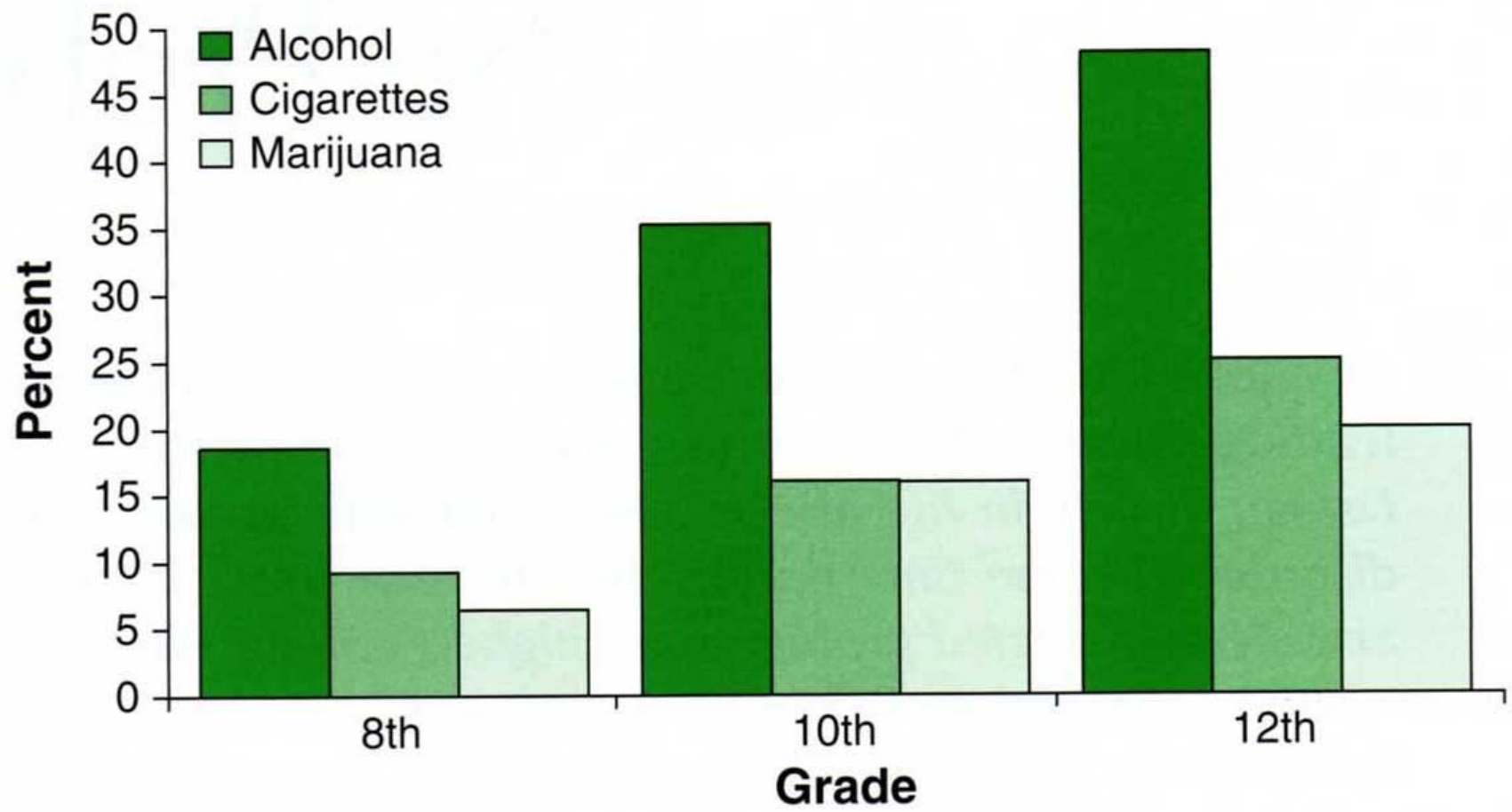
SOURCE: Adapted by CESAR from Centers for Disease Control and Prevention (CDC), National Center for Health Statistics, *Health Behaviors of Adults: United States, 2005-2007*, 2010. Available online at http://www.cdc.gov/nchs/data/series/sr_10/sr10_245.pdf.

Percentage of U.S. 12th Grade Students Reporting Past Month Use of Top Ten Drugs, 2004 (N=15,222 12th graders in 128 schools)



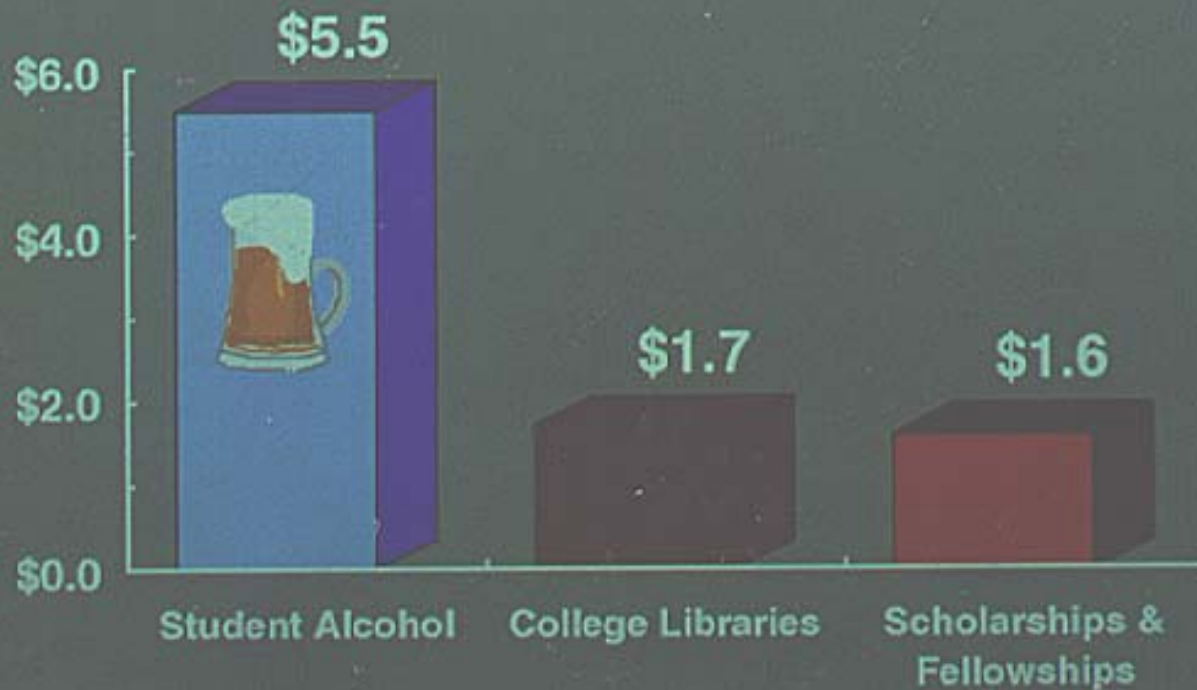
SOURCE: Adapted by CESAR from University of Michigan, "Overall teen drug use continues gradual decline; but use of inhalants rises," Monitoring the Future press release, December 21, 2004. Available online at <http://www.monitoringthefuture.org>.

A. Alcohol is the drug of choice among adolescents.



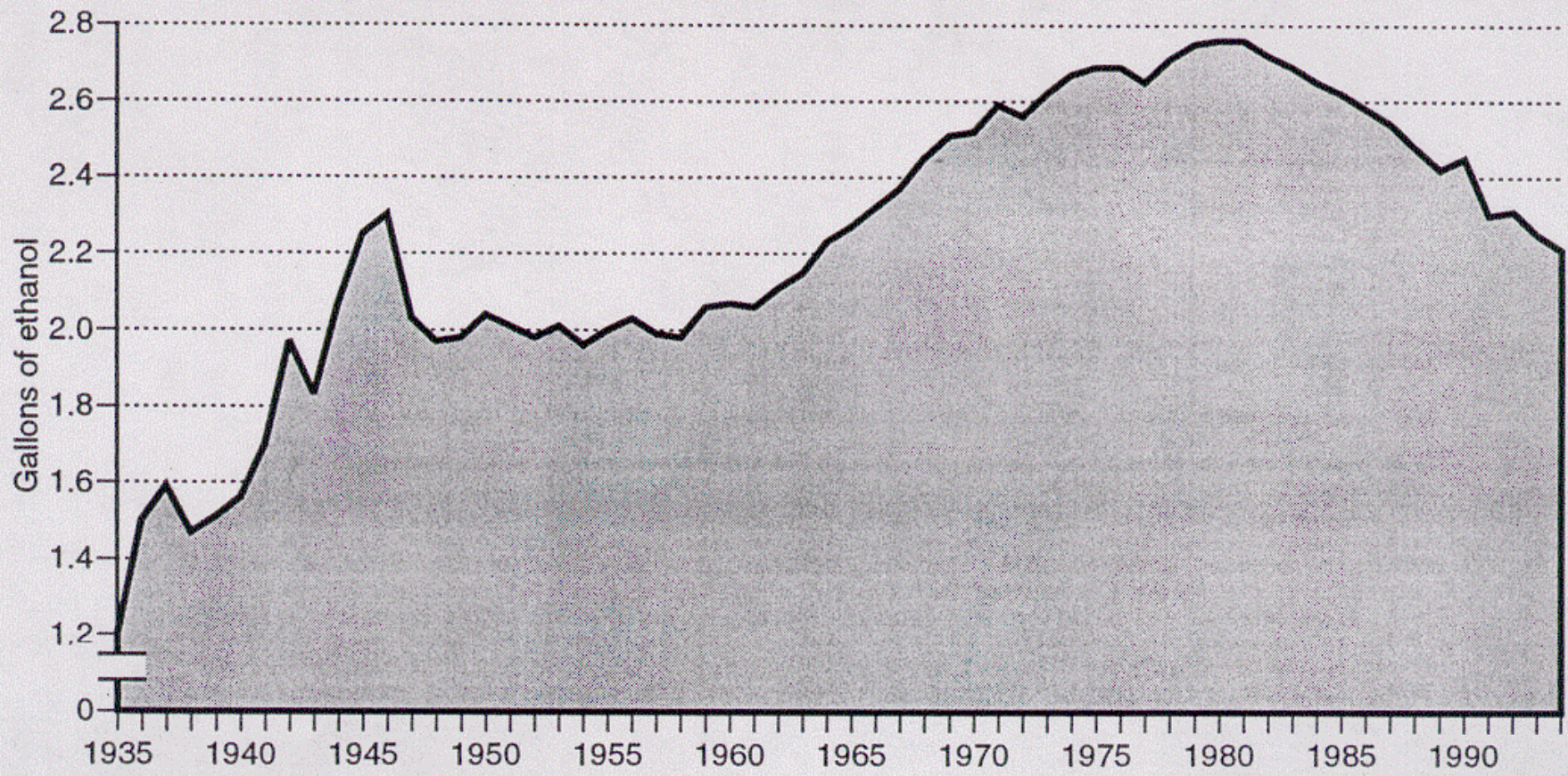
Student Alcohol Expenditures

(Annual Expenses in \$ Billions)



L. Eigen, *Alcohol Practices, Policies & Potentials of American Colleges*, 1991

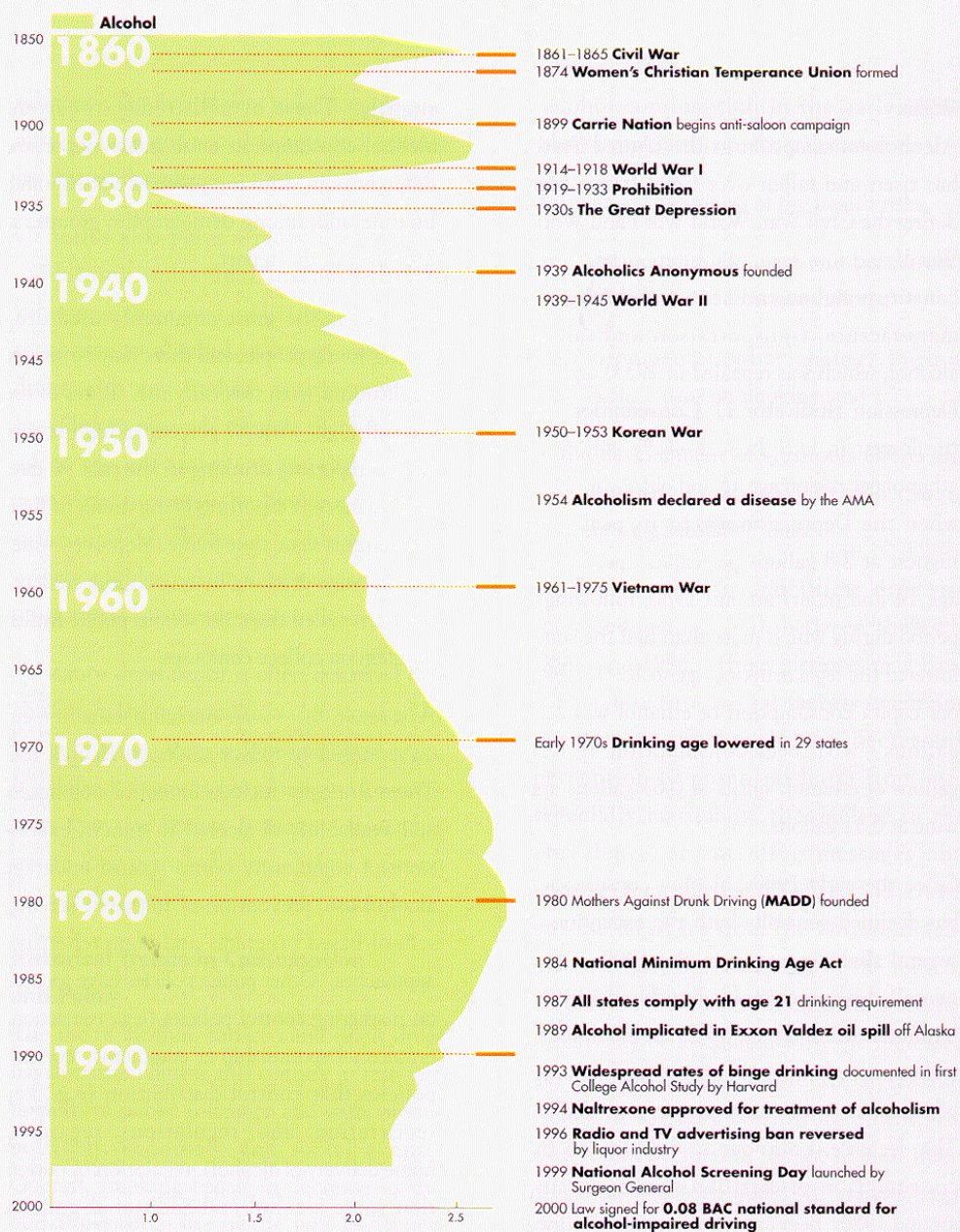
Figure 1. Total per capita ethanol consumption, United States, 1935–94.



Indicator 1

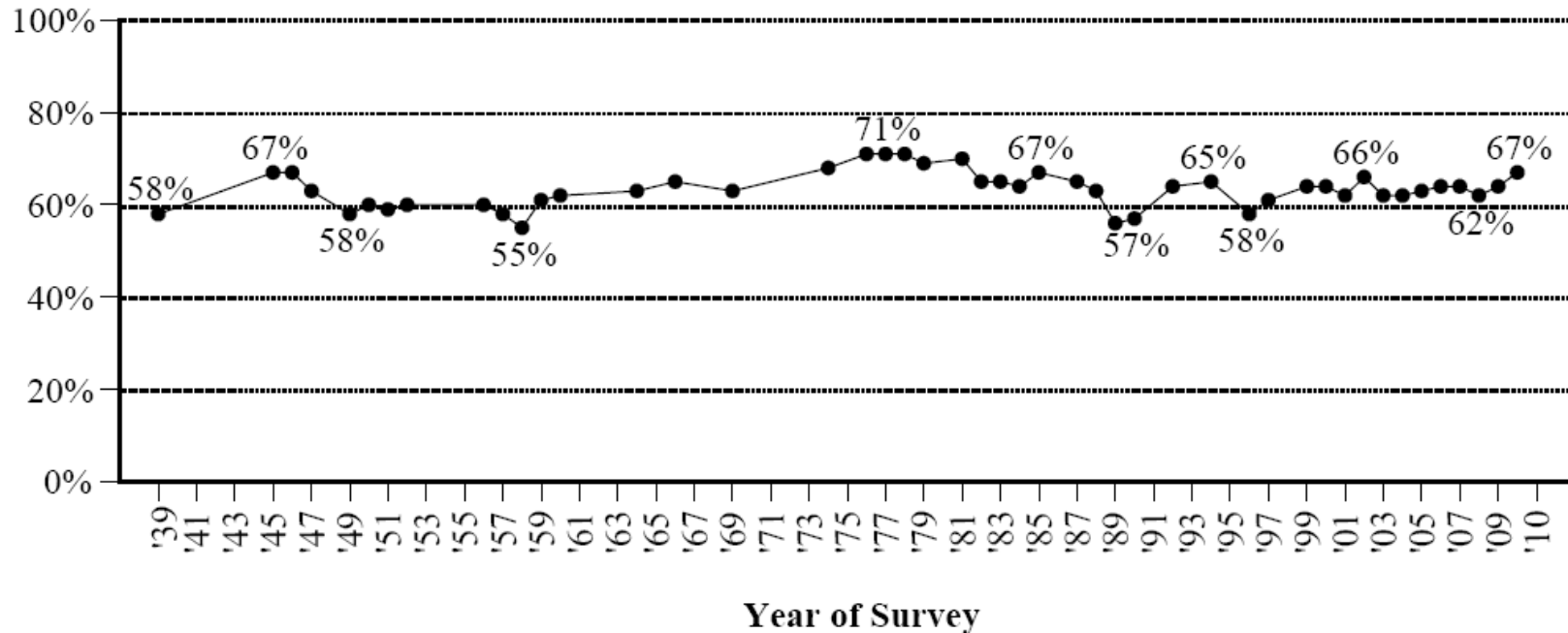
Trends in Alcohol Use, 1850–1997

Annual per Capita Consumption in Gallons of Ethanol



Source: Substance Abuse The Nation's Number One Health Problem (Robert Wood Johnson Foundation).

Percentage of U.S. Adults Reporting That They Drink Alcohol, 1939 to 2010



NOTES: Respondents were asked “Do you have occasion to use alcoholic beverages such as liquor, wine, or beer, or are you a total abstainer?” Data for 2010 are based on national telephone (land-line and cellular) interviews conducted July 8-11, 2010 with a random sample of 1,020 adults (ages 18 and older) living in the continental U.S. The margin of error is ± 4 percentage points. If more than one poll was conducted in a year, the poll that occurred closest to the month of July was used in the above graph. Surveys were only conducted in years that have a data point marker.

SOURCE: Adapted by CESAR from Gallup, “U.S. Drinking Rate Edges Up Slightly to 25-year High,” July 30, 2010 (available online at <http://www.gallup.com/poll/141656/Drinking-Rate-Edges-Slightly-Year-High.aspx>) and Gallup News Service, Gallup Poll Social Series: Consumption Habits., undated (available online at http://www.gallup.com/poll/File/141671/Alcohol_July_30_2010.pdf).

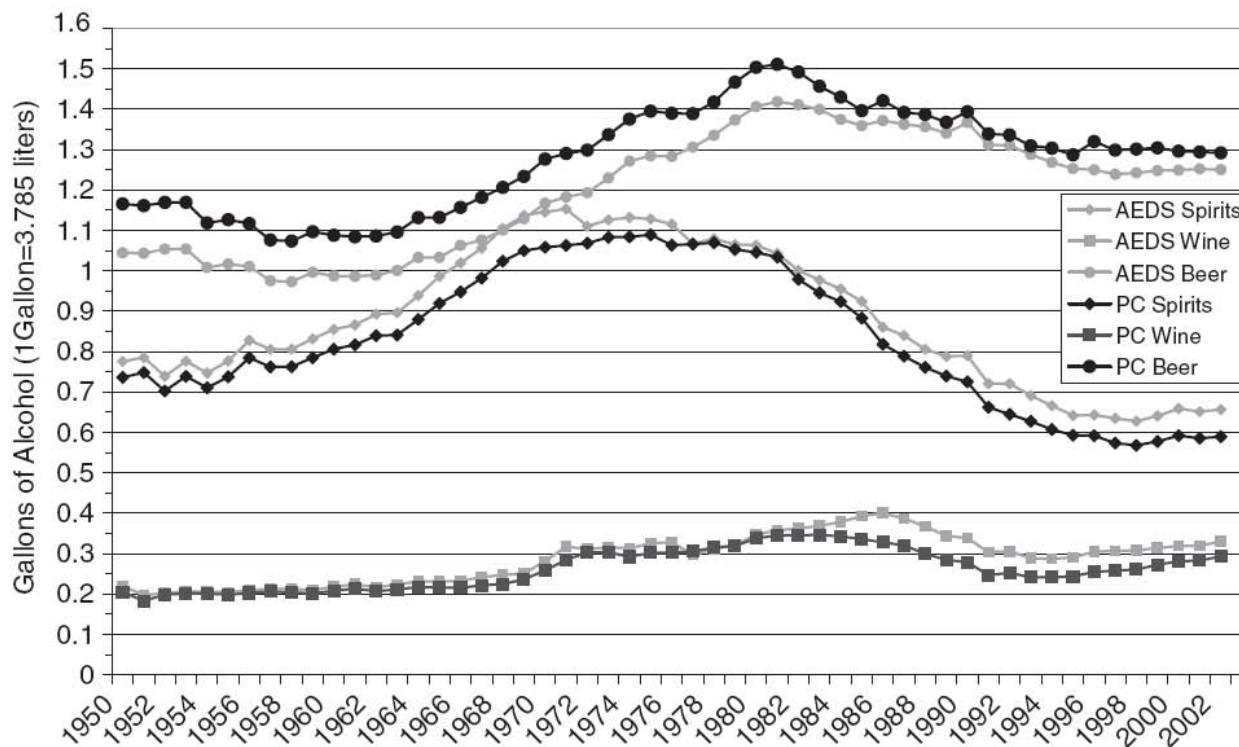


Fig. 5. Per capita consumption of beer, wine, and spirits in the United States: new estimates and Alcohol Epidemiologic Data System (AEDS) estimates for comparison. ◆, spirits; ■, wine; ●, beer. Dark lines show new estimates and lighter lines are AEDS estimates.

Source: Kerr, Greefield and Tujague, "Estimates of Mean Alcohol Concentration of the Spirits, Wine, and Beer Sold in the United States and Per Capita Consumption: 1950 to 2002," *Alcoholism: Clinical and Experimental Research*, 2006, V30, 1583-1591.

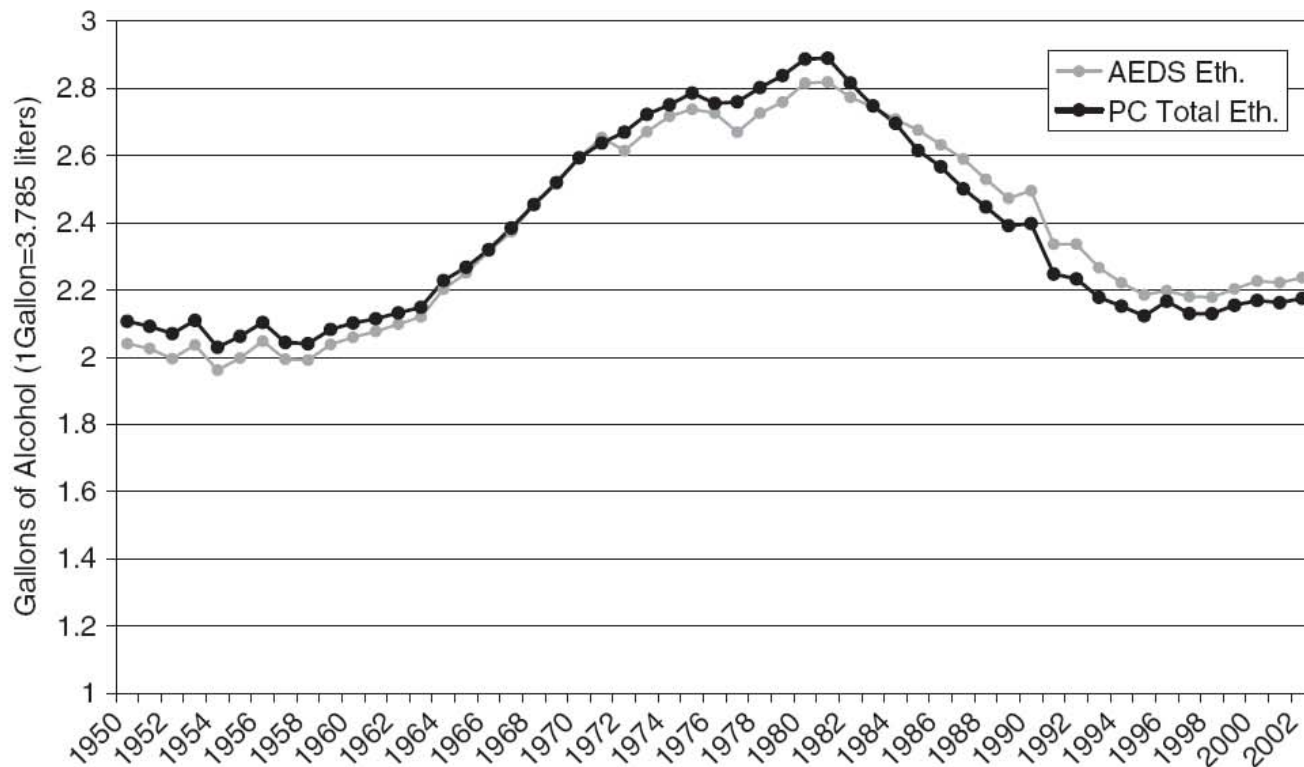
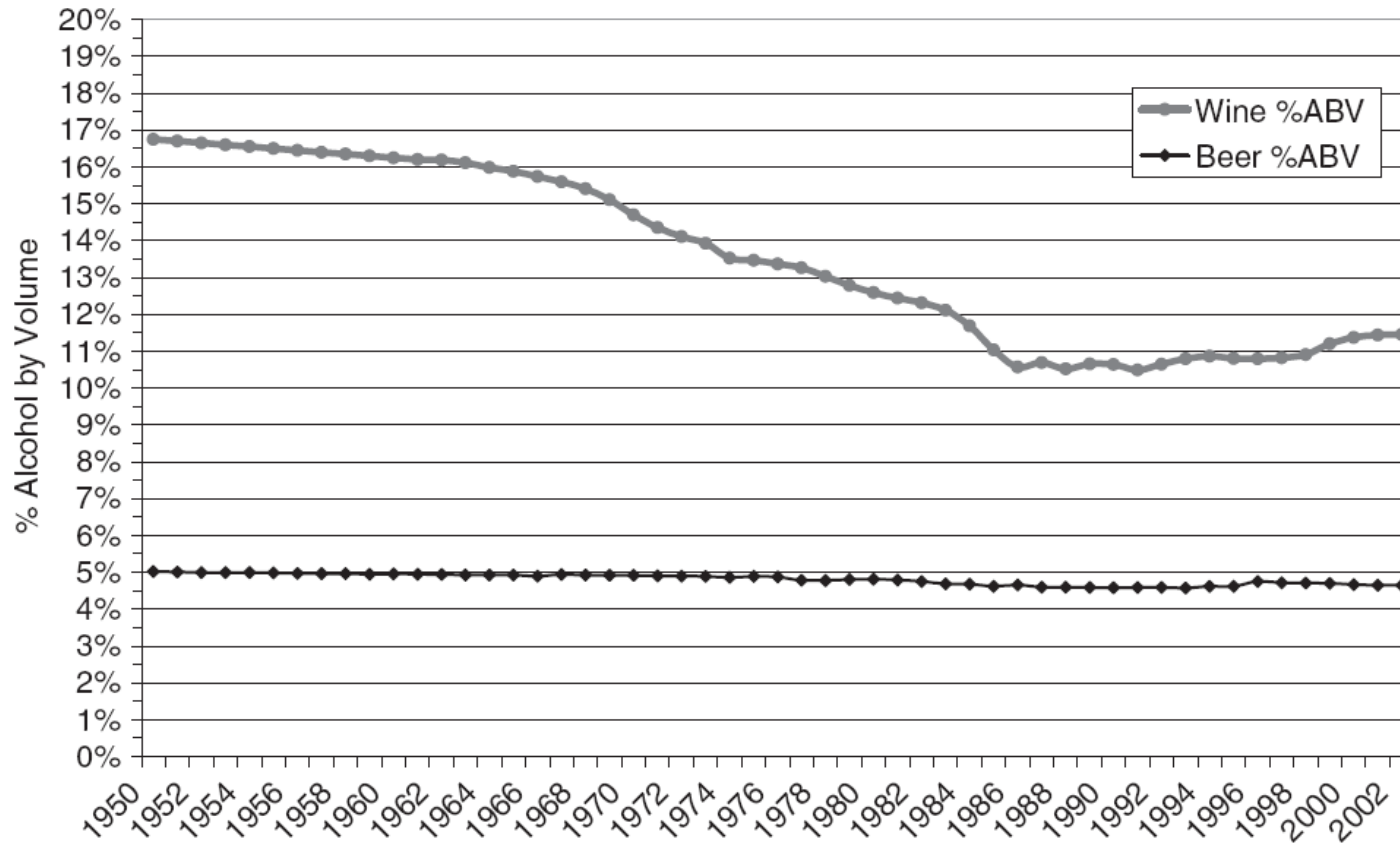


Fig. 6. Per capita consumption of alcohol in the United States from 1950 to 2002: new estimates and Alcohol Epidemiologic Data System (AEDS) estimates for comparison. ●, new estimates of per capita consumption; ●, estimates based on AEDS conversion factors.

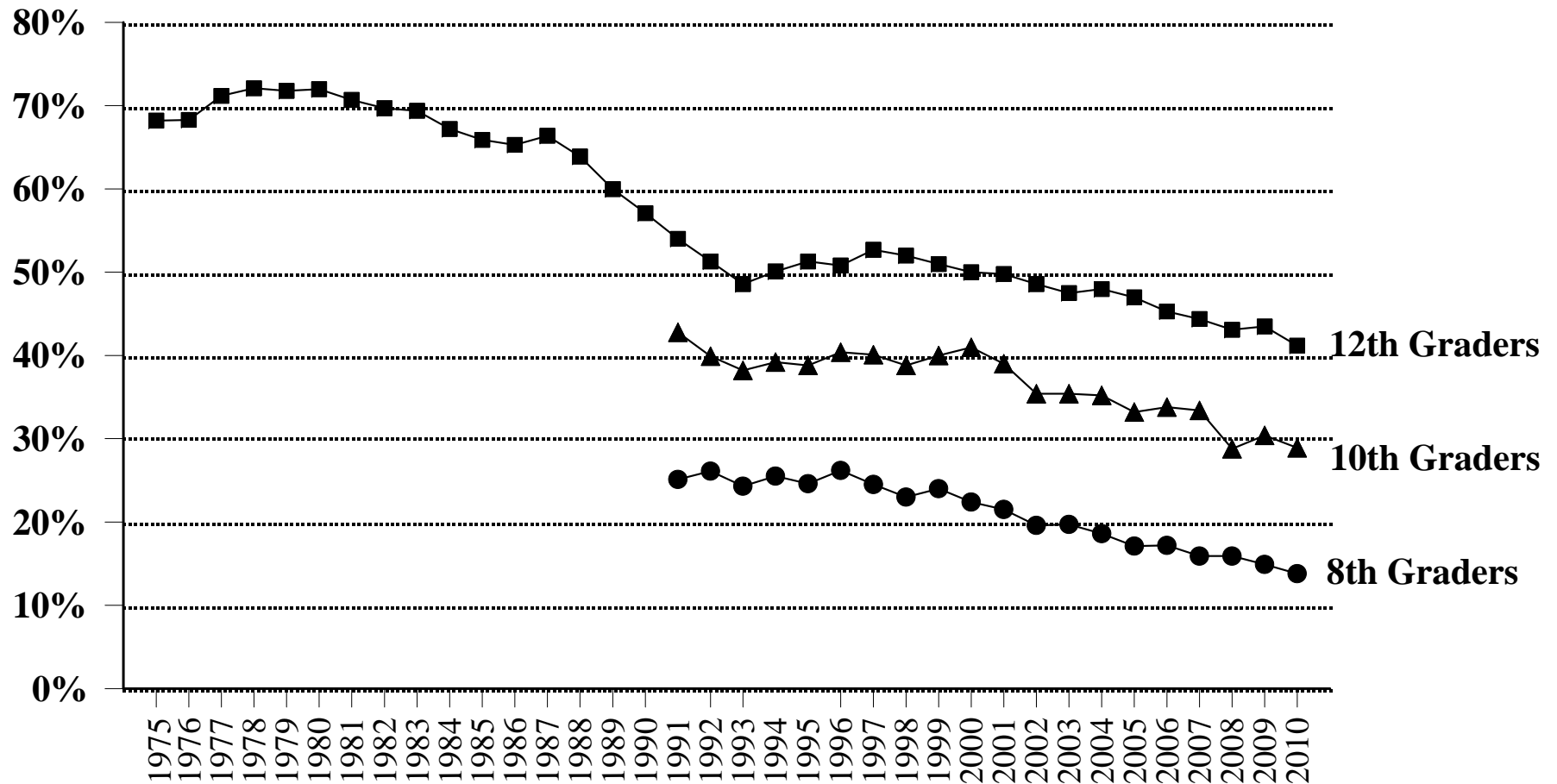
Source: Kerr, Greefield and Tujague, “Estimates of Mean Alcohol Concentration of the Spirits, Wine, and Beer Sold in the United States and Per Capita Consumption: 1950 to 2002,” *Alcoholism: Clinical and Experimental Research*, 2006, V30, 1583-1591.



Trends in estimated mean alcohol concentration for beer and wine in the United States. ●, wine alcohol content by volume (%ABV); ◆, beer %ABV.

Source: Kerr, Greefield and Tujague, "Estimates of Mean Alcohol Concentration of the Spirits, Wine, and Beer Sold in the United States and Per Capita Consumption: 1950 to 2002," *Alcoholism: Clinical and Experimental Research*, 2006, V30, 1583-1591.

Percentage of U.S. 8th, 10th, and 12th Grade Students Reporting Past Month Alcohol Use, 1975-2010



*The Monitoring the Future survey began surveying 12th graders in 1975. Surveys of 8th and 10th graders were added in 1991.

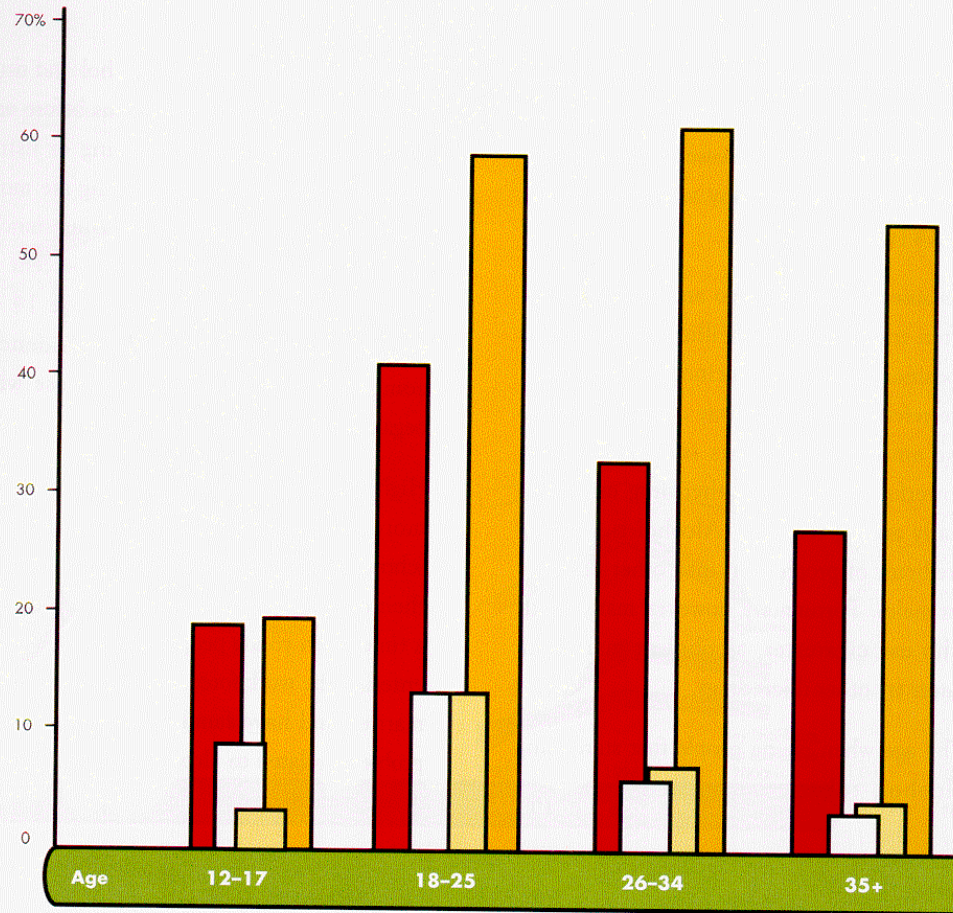
SOURCE: Adapted by CESAR from University of Michigan, "Marijuana Use Is Rising; Ecstasy Use Is Beginning to Rise; and Alcohol Use is Declining Among U.S. Teens," Monitoring the Future press release, December 14, 2010. Available online at

<http://www.monitoringthefuture.org/data/10data.html#2010data-drugs>.




Indicator 7

Young Adults Use Substances More than Any Other Group, 1998

Percent of Users in Past Month

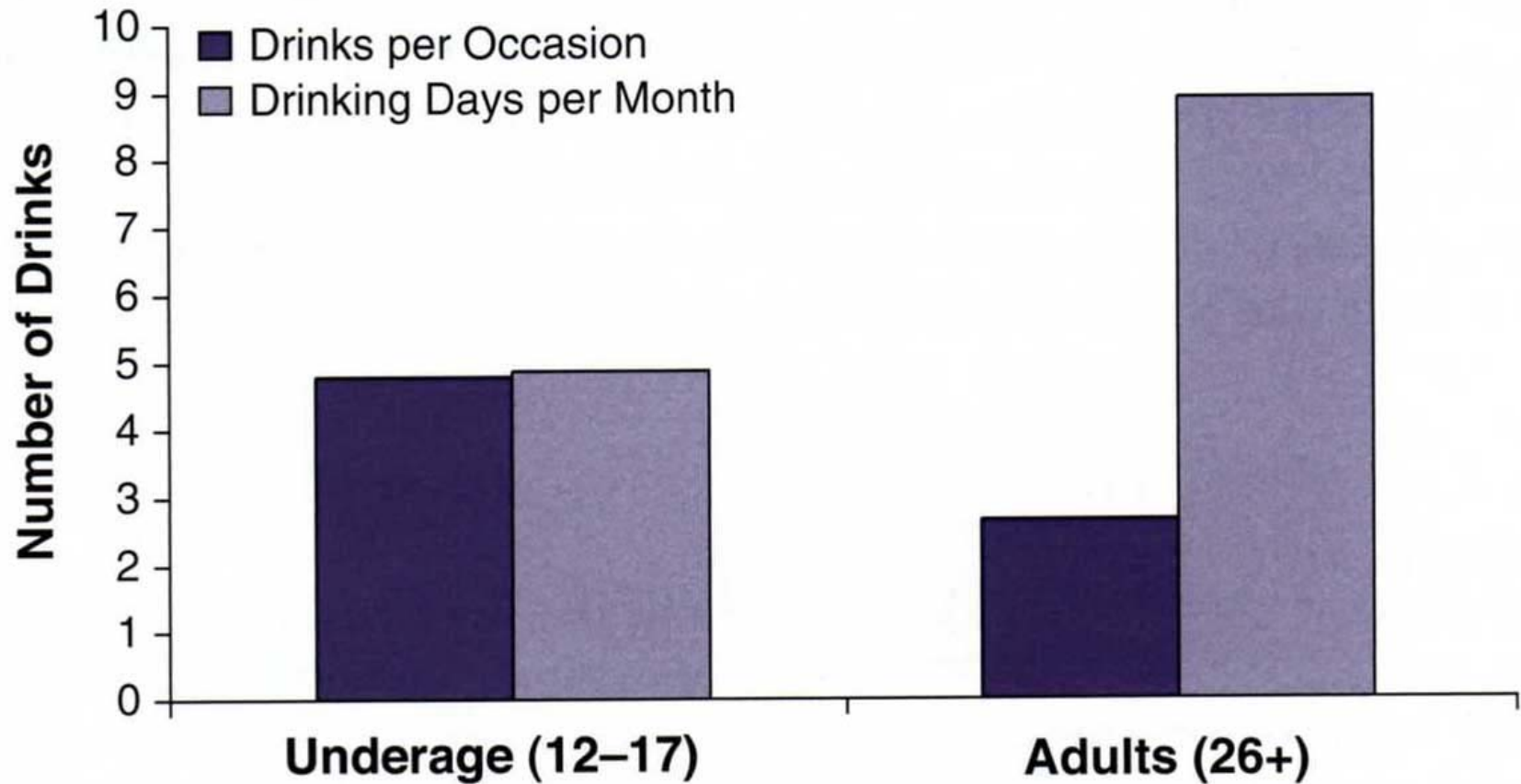


In Percent

 Cigarettes	19	41	33	27
 Marijuana	9	13	6	3
 Heavy Alcohol	3	13	7	4
 Alcohol	20	59	61	53

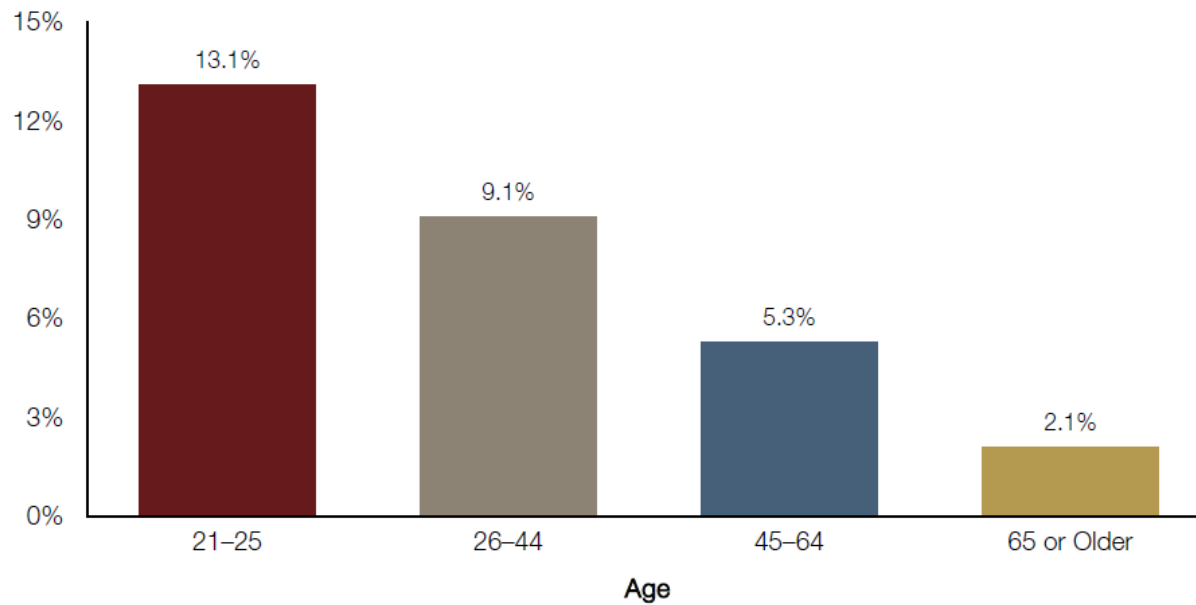
Source: Substance Abuse The Nation's Number One Health Problem (Robert Wood Johnson Foundation).

B. Youth drink less frequently than adults, but drink more per occasion.



Past-Month Heavy Alcohol Use Among Adults Aged 21 or Older, by Age (2013)

In 2013, young adults aged 21–25 had the highest percentage of heavy alcohol use among adults aged 21 or older.



In the United States, 6.7% of persons aged 21 or older (an estimated 15.1 million individuals) in 2013 reported heavy alcohol use within the month prior to being surveyed. This percentage has not changed significantly since 2009.

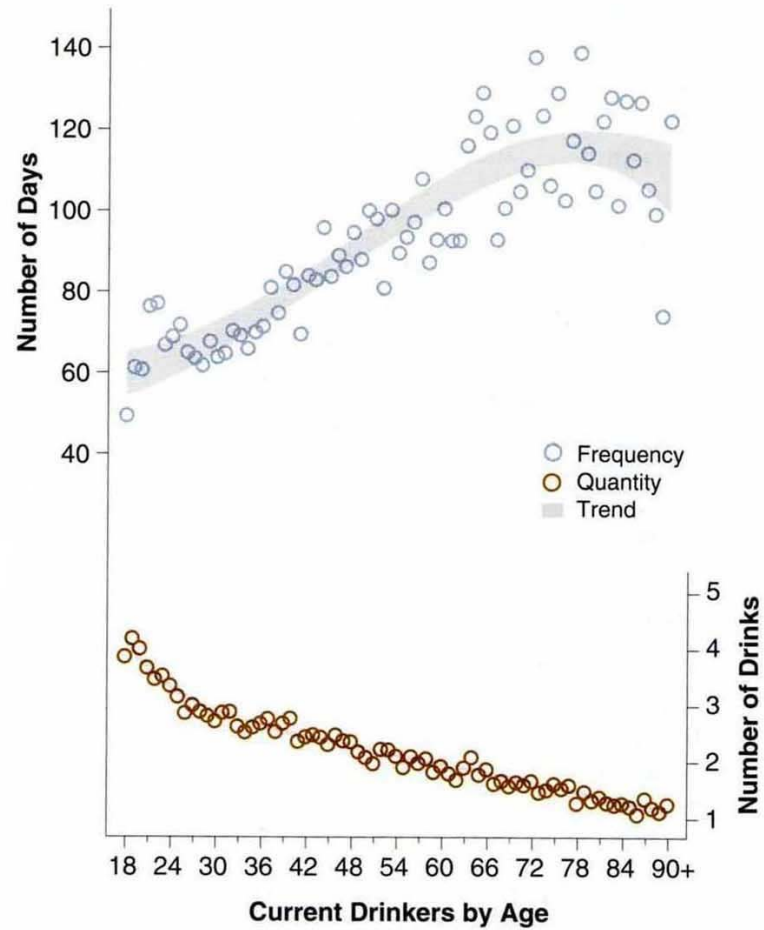
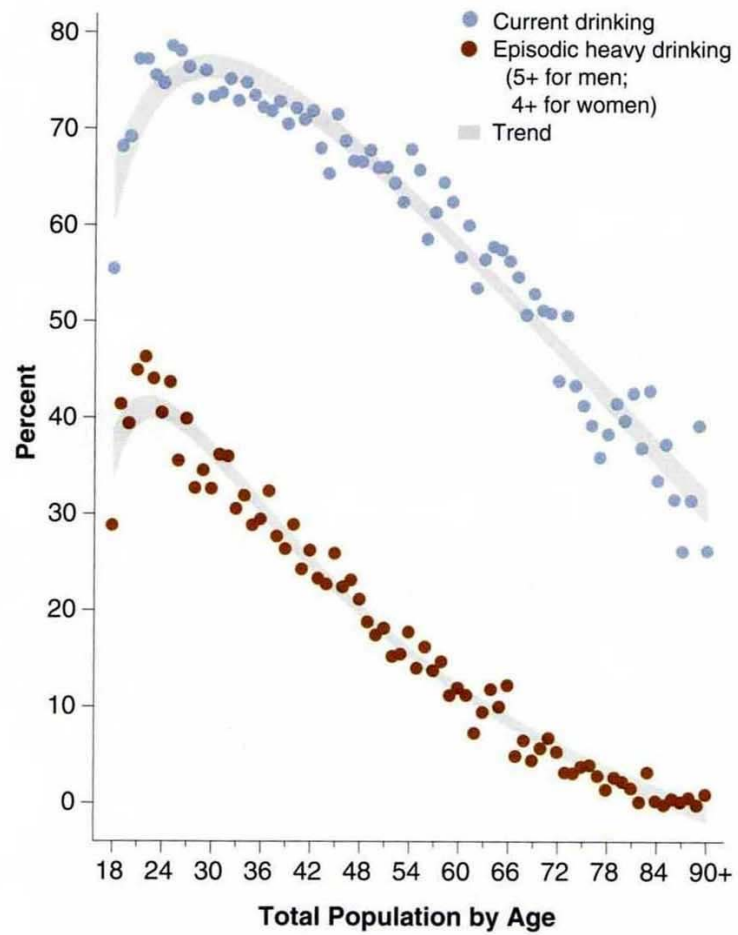
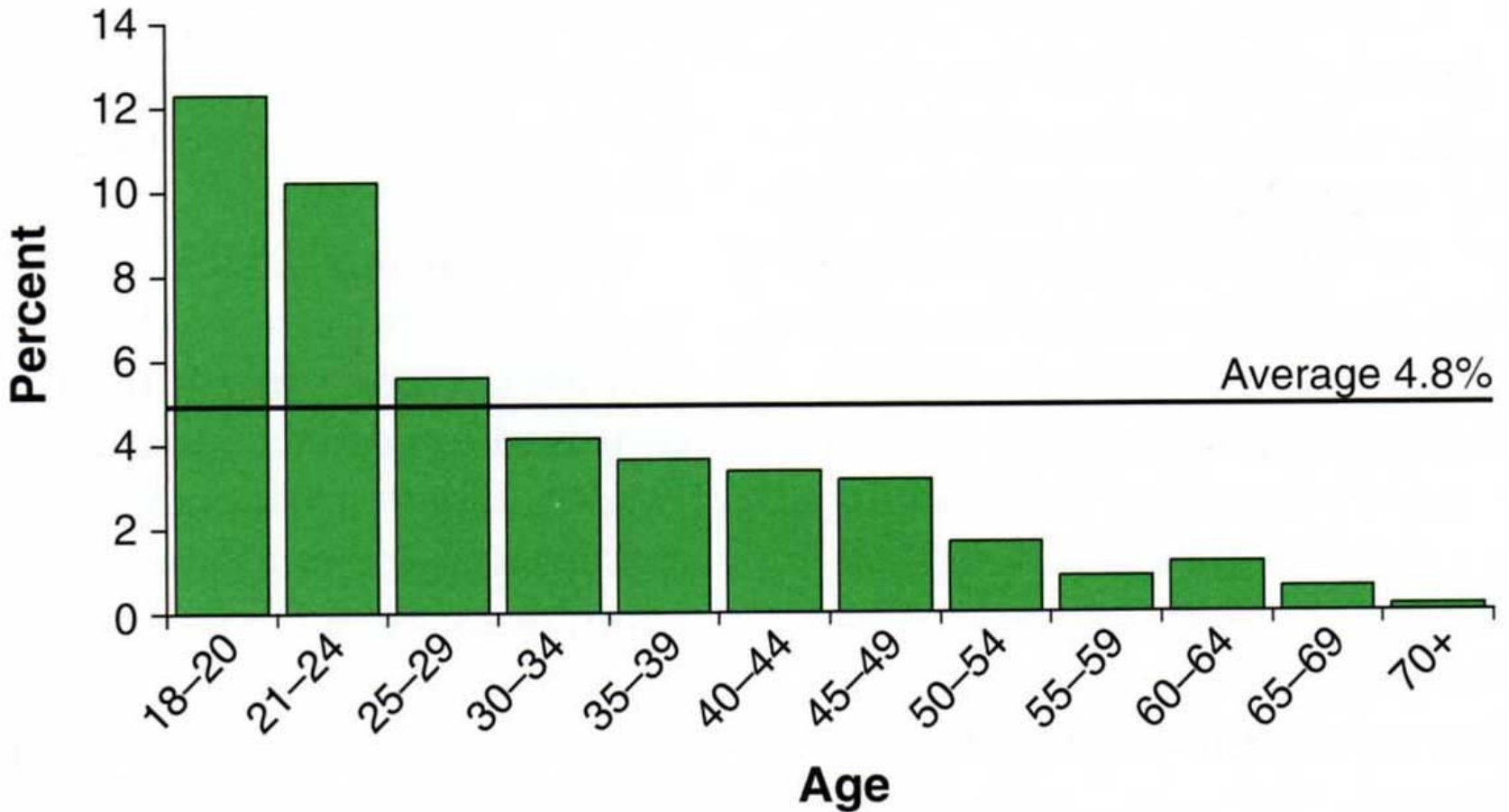


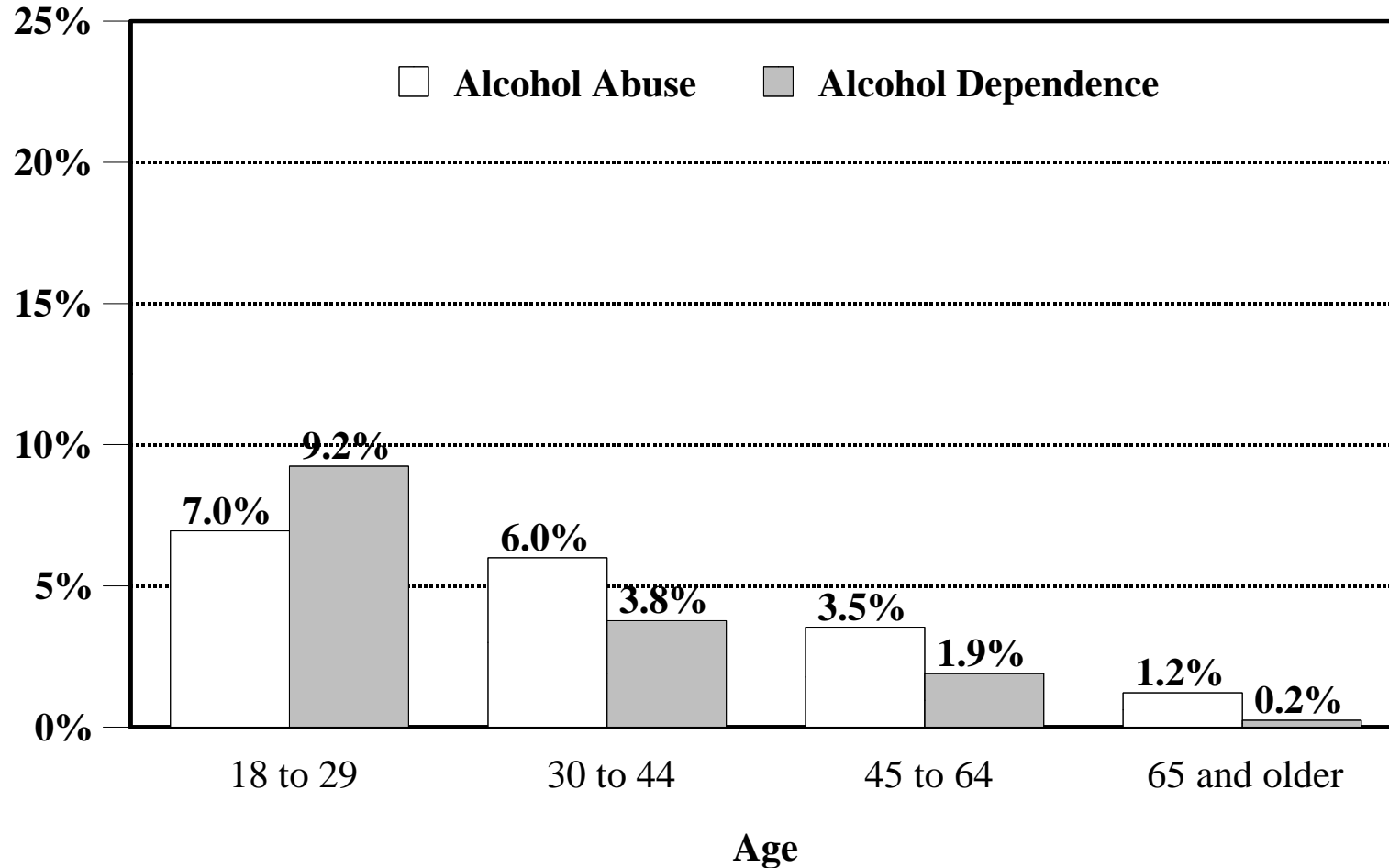
Figure 1 Percentages of current drinking and episodic heavy drinking by age (graph on the left), and mean frequency and quantity of drinking by age (graph on the right), NESARC, 2001–2002.

C. Prevalence of past-year DSM-IV alcohol dependence: United States, 2001–2002.



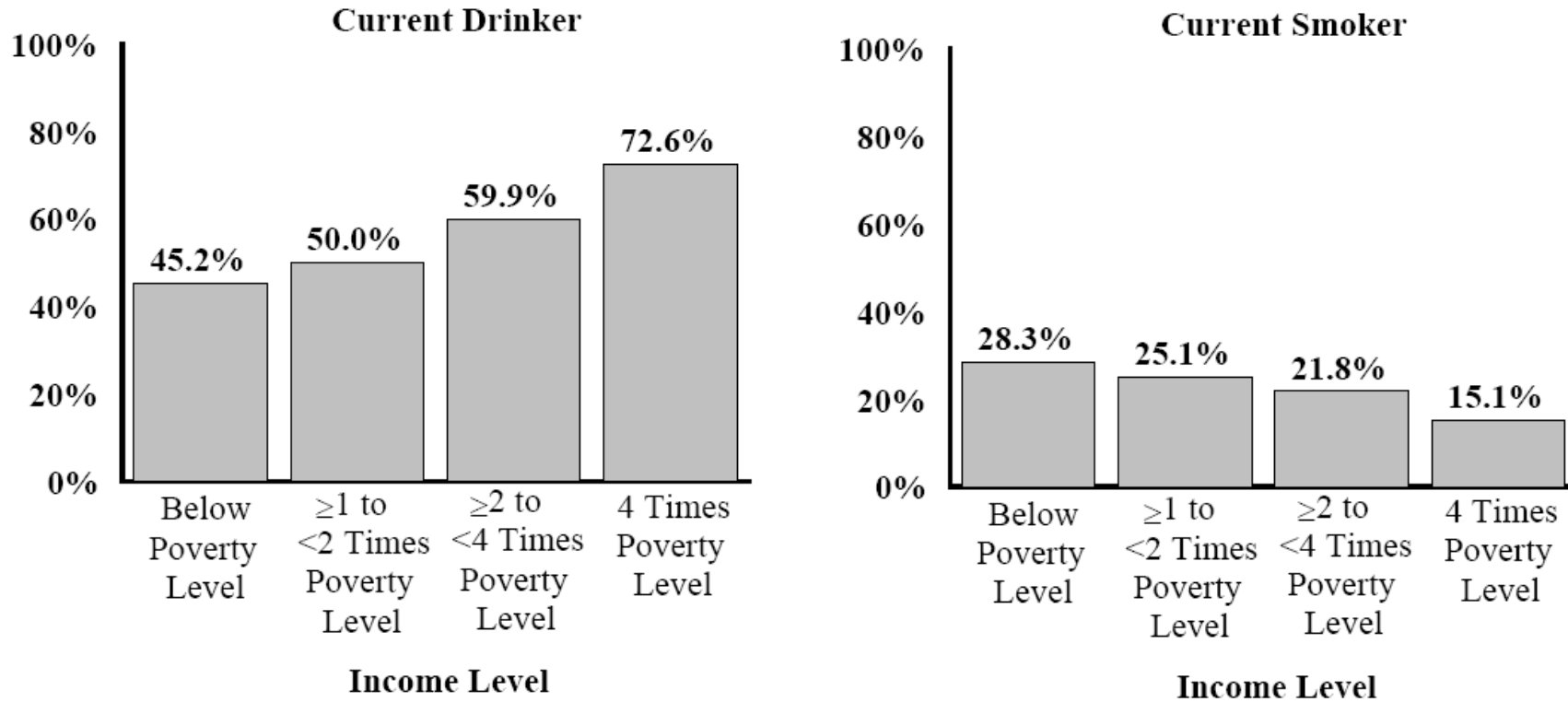
Percentage of U.S. Adults Reporting 12-Month Prevalence of Alcohol Abuse and Alcohol Dependence, by Age, 2001-2002

(N = 43,093)



SOURCE: Adapted by CESAR from Grant, B., Dawson, D., Stinson, F., Chou, S., Dufour, M., and Pickering, R. "The 12-Month Prevalence and Trends in DSM-IV Alcohol Abuse and Dependence: United States, 1991-1992 and 2001-2002," *Drug and Alcohol Dependence* 74(3):223-234, 2004. For more information, contact Bridget Grant at bgrant@willco.niaaa.nih.gov.

**Percentage of U.S. Adults Reporting Past Month
Alcohol Drinking and Cigarette Smoking, by Income Level
(2005-2007 Annual Average)**

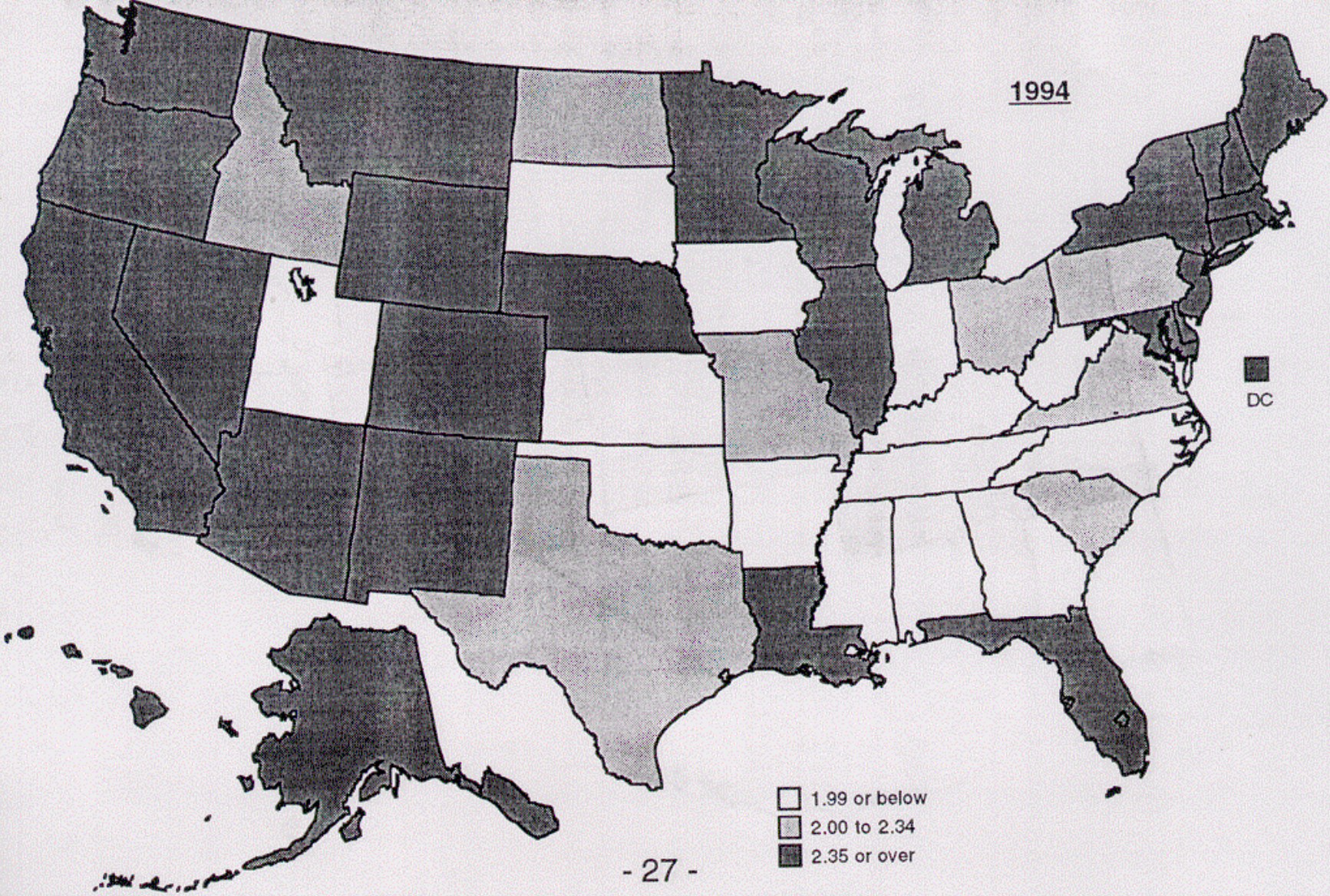


NOTE: Data are combined annual averages from 79,096 completed interviews from the 2005 to 2007 National Health Interview Surveys (NHIS), an annual computer-assisted in-person survey of the U.S. civilian noninstitutionalized population ages 18 and older.

SOURCE: Adapted by CESAR from the Centers for Disease Control and Prevention (CDC), *Health Behaviors of Adults: United States, 2005-2007*, 2010. Available online at http://www.cdc.gov/nchs/data/series/sr_10/sr10_245.pdf.

Figure 10. Per capita consumption from all beverages in gallons of ethanol by State,

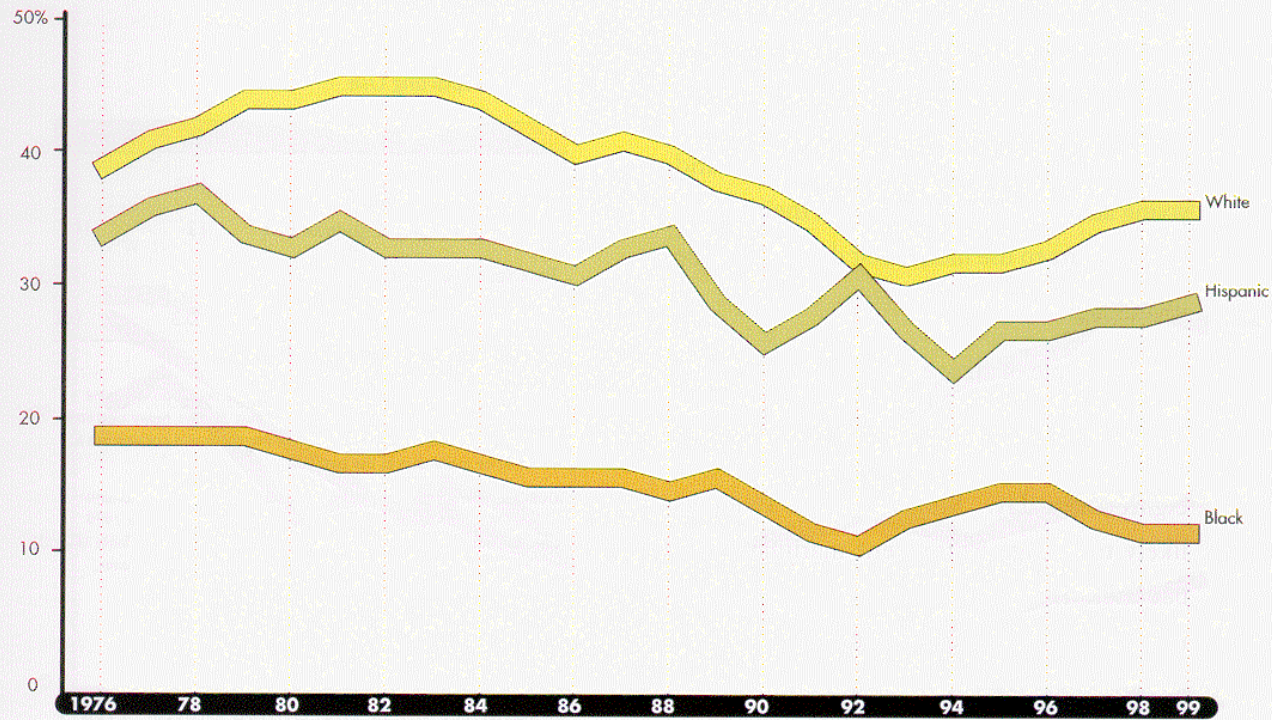
1994




Indicator 11

Heavy Alcohol Use by Youth Varies by Race and Ethnic Group

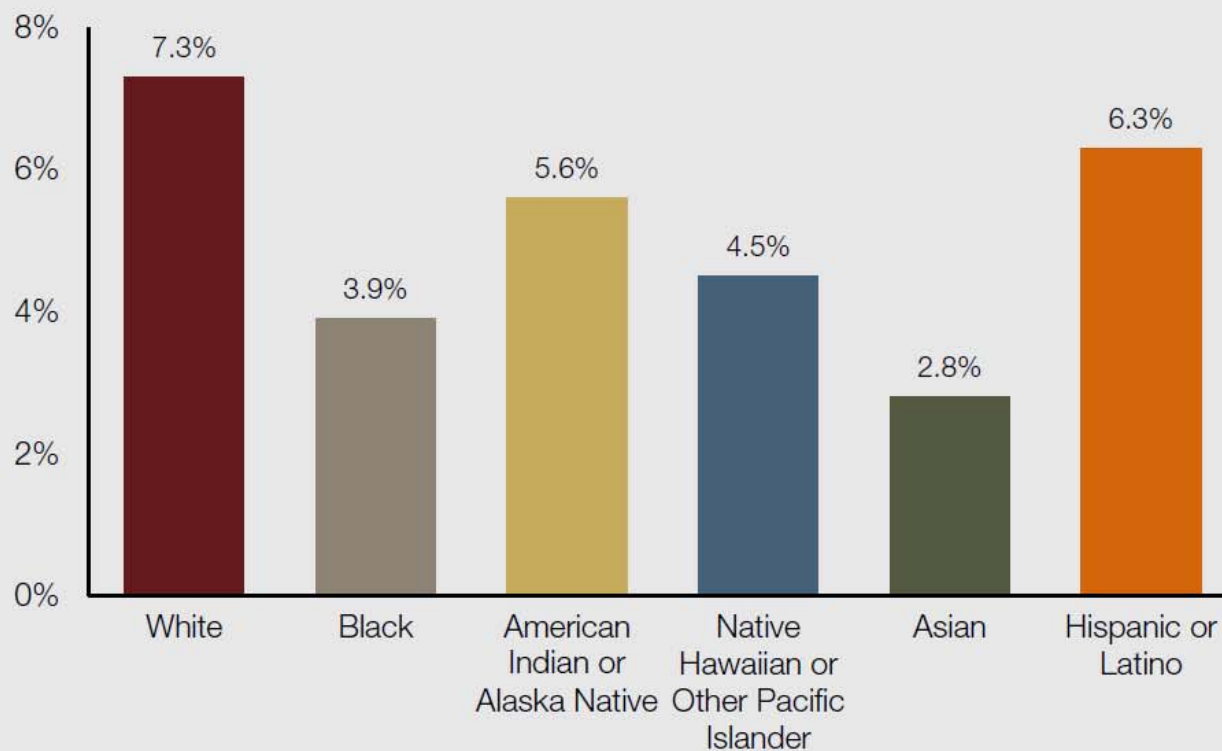
Percent of High School Seniors Who Are Heavy Users



In Percent		1976	78	80	82	84	86	88	90	92	94	96	98	99
	Alcohol White	39	42	44	45	44	40	40	37	32	32	33	36	36
	Alcohol Hispanic	34	37	33	33	33	31	34	26	31	24	27	28	29
	Alcohol Black	19	19	18	17	17	16	15	14	11	14	15	12	12

Source: Substance Abuse The Nation's Number One Health Problem (Robert Wood Johnson Foundation).

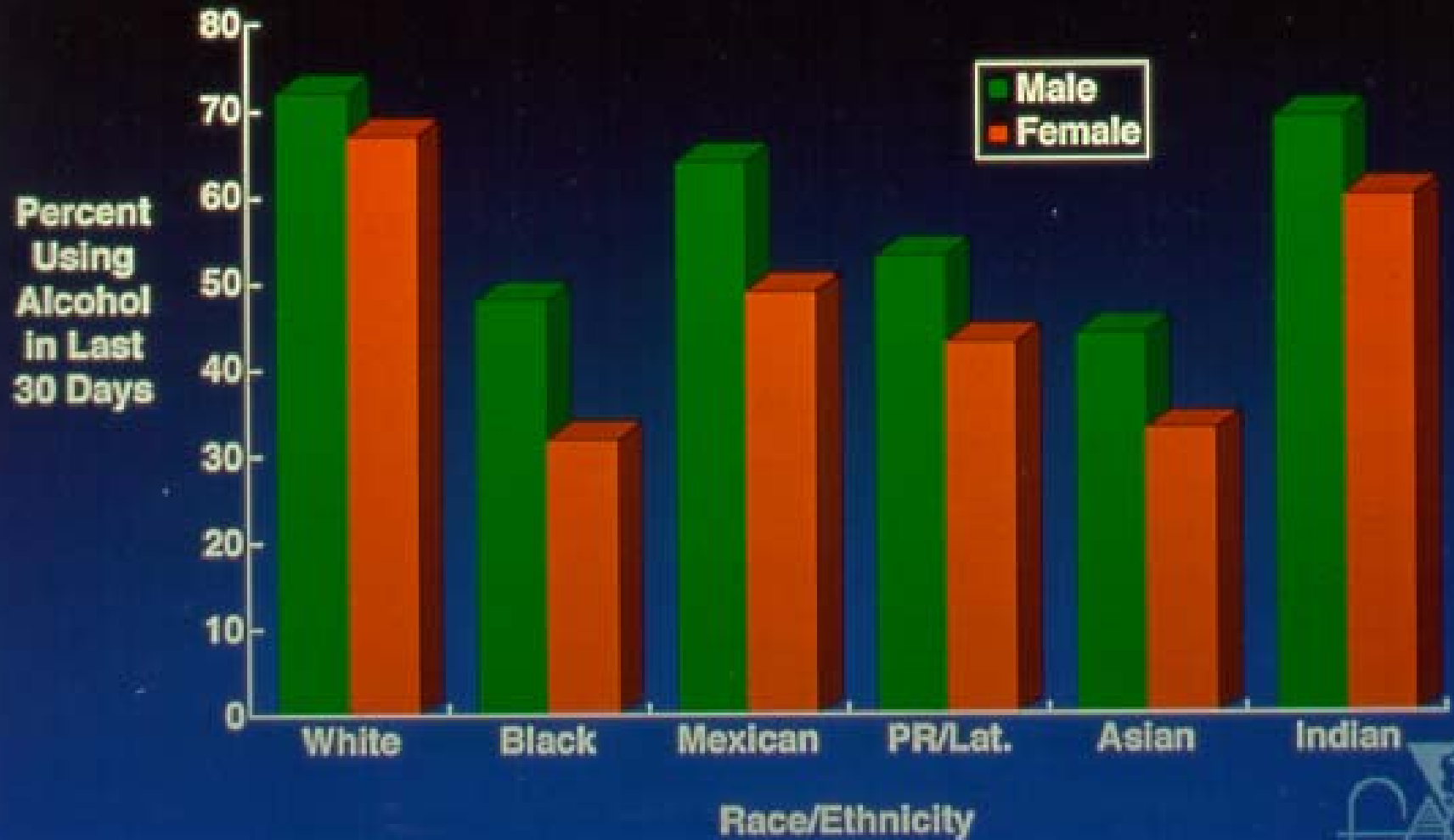
Past-Month Binge Alcohol Use Among Adolescents Aged 12–17, by Race/Ethnicity (2013)



Among U.S. adolescents, higher percentages of whites and Hispanics engaged in past-month binge drinking than did blacks or Asians.

Source: SAMHSA, Center for Behavioral Health Statistics and Quality, National Survey on Drug Use and Health, 2013.

Who Is Most Likely To Drink?

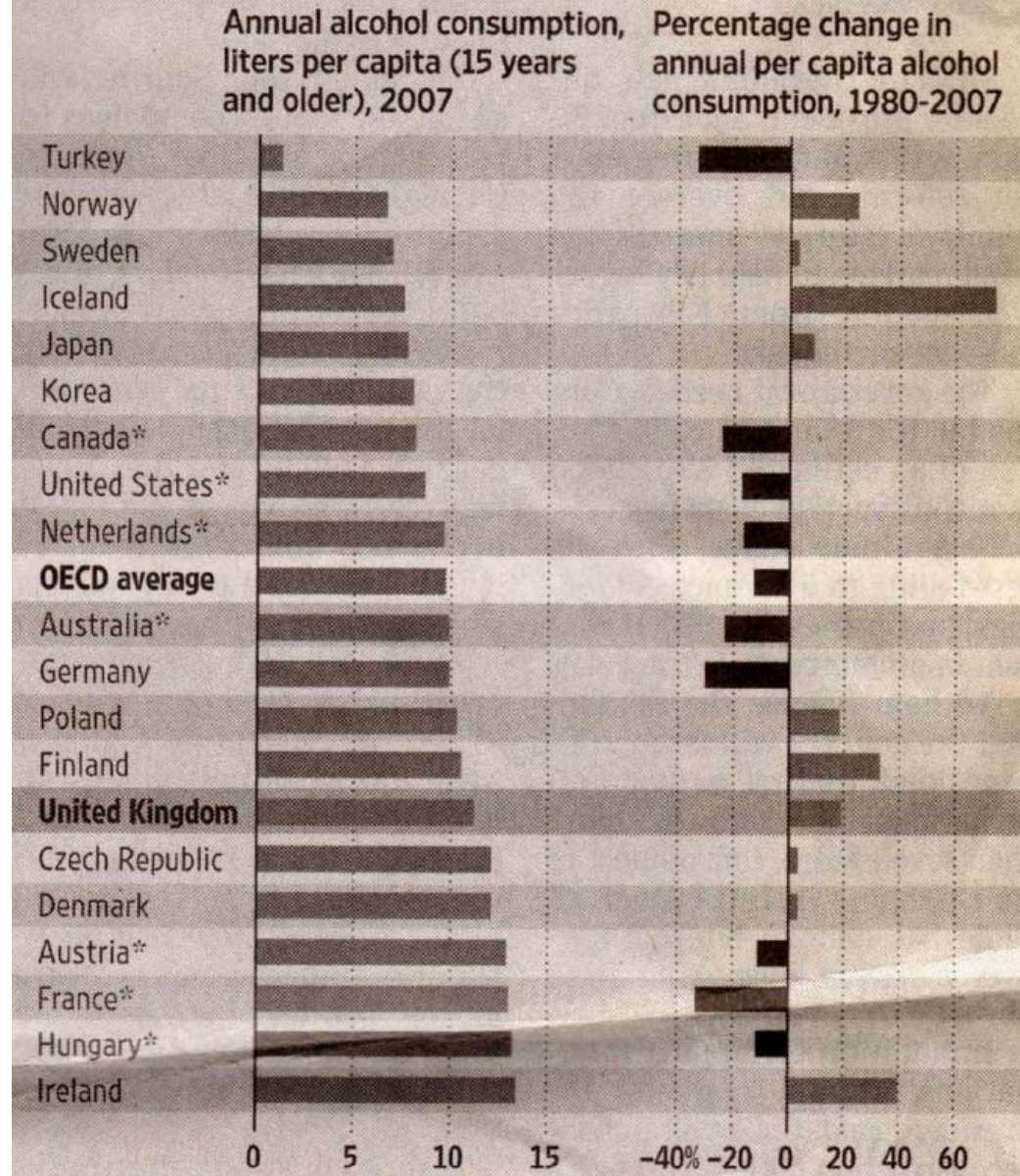


Source: American Journal of Public Health, March 1991.



National Spirit

Average alcohol consumption has fallen in many nations, but it has gone up in the U.K.

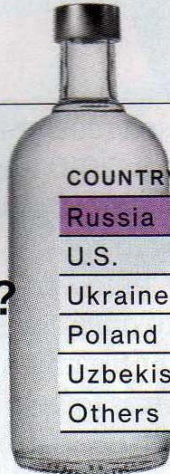


*2006

Source: Organization for Economic Cooperation and Development

What's Your Country Drinking?

45% of the world's vodka is sold in Russia



Vodka

COUNTRY	MARKET SHARE
Russia	45.0%
U.S.	13.2
Ukraine	8.1
Poland	6.2
Uzbekistan	2.8
Others	24.8



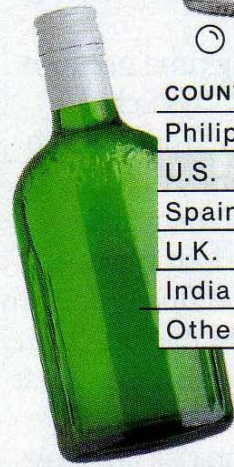
Whiskey

COUNTRY	MARKET SHARE
India	46.7%
U.S.	14.4
France	4.8
Japan	3.4
U.K.	2.5
Others	28.2



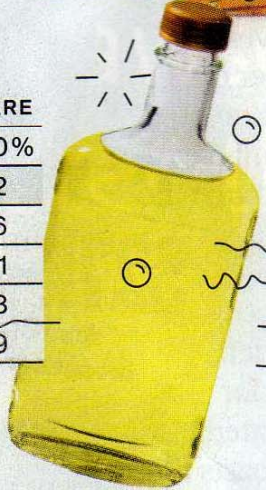
Brandy

COUNTRY	MARKET SHARE
India	26.7%
Philippines	16.1
Russia	7.4
U.S.	6.3
Brazil	4.7
Others	38.8



Gin

COUNTRY	MARKET SHARE
Philippines	36.0%
U.S.	21.2
Spain	6.6
U.K.	5.1
India	4.3
Others	26.9

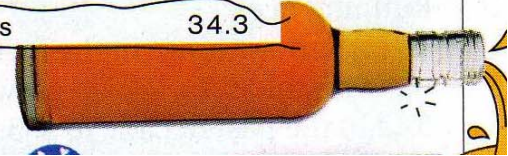


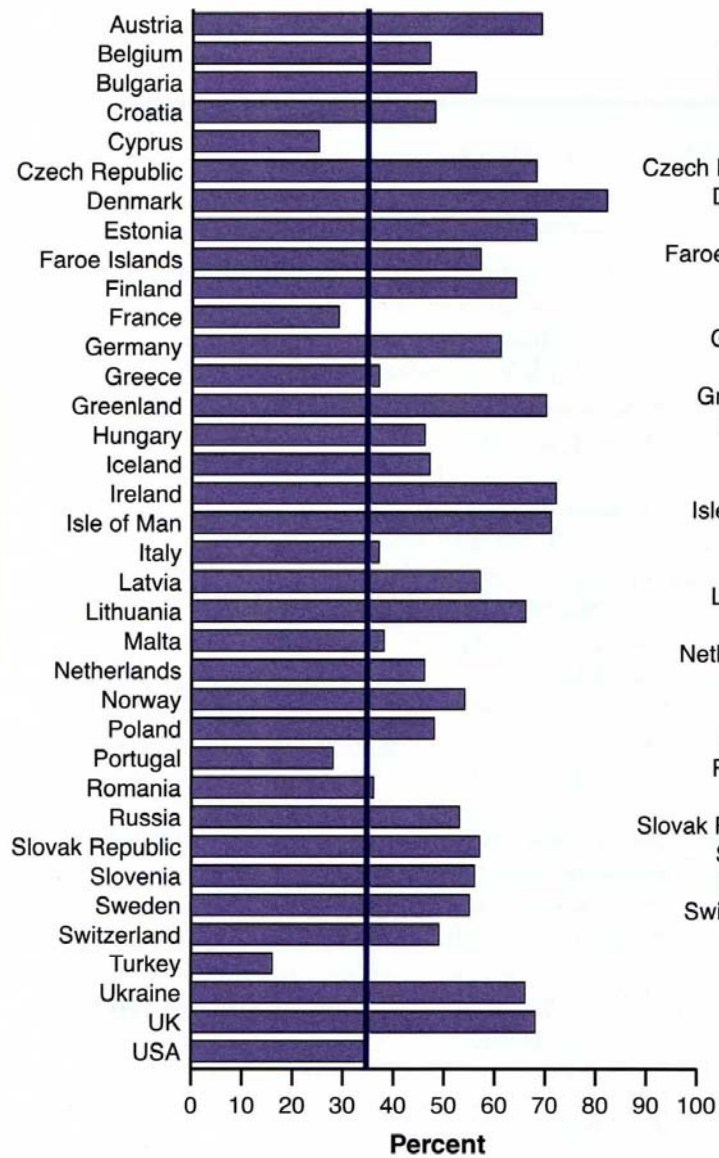
Tequila

COUNTRY	MARKET SHARE
U.S.	50.2%
Mexico	33.6
Russia	1.5
Germany	1.5
Canada	1.1
Others	12.0

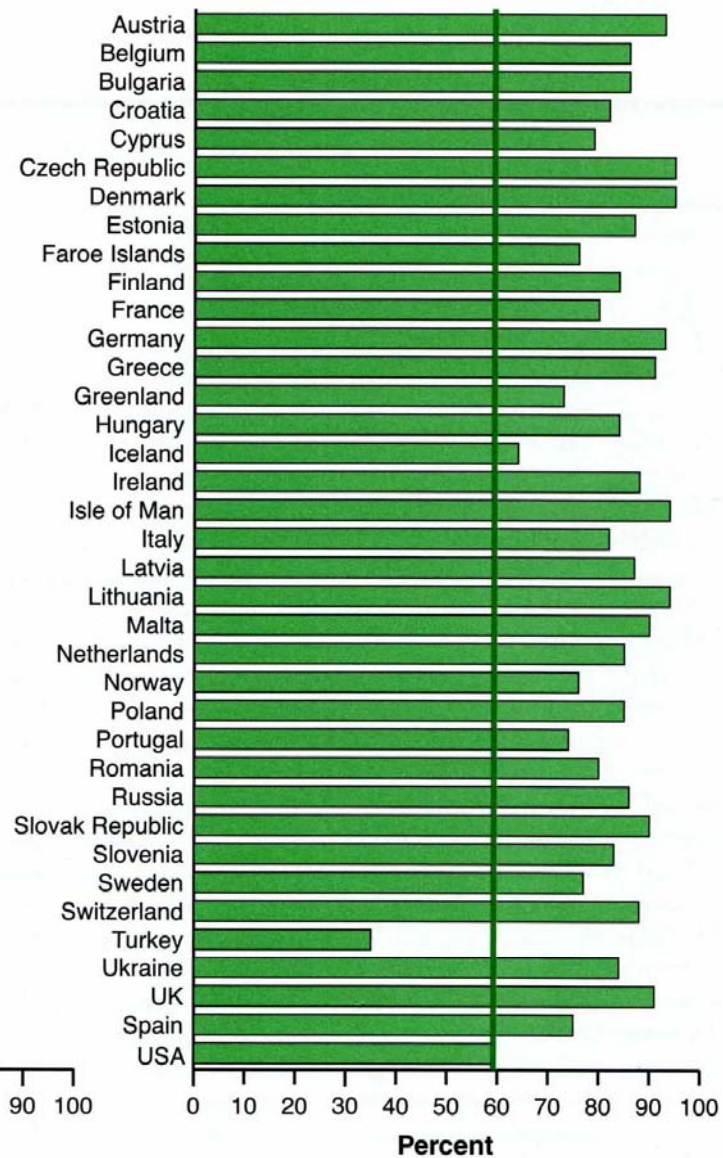
Rum

COUNTRY	MARKET SHARE
India	31.8%
U.S.	15.8
Philippines	10.9
Cuba	4.1
Spain	3.0
Others	34.3

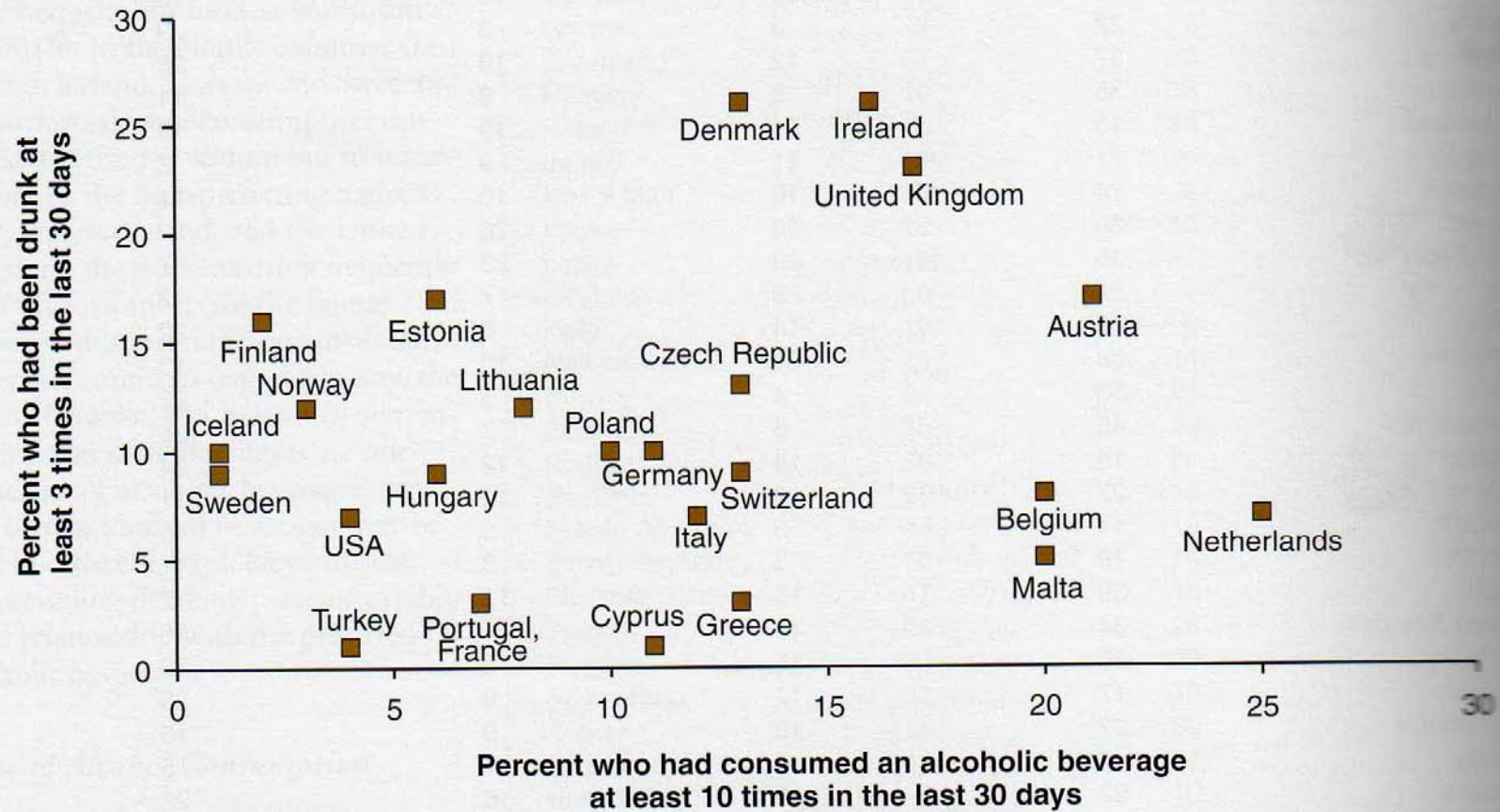




Frequency With Which 15-Year-Olds Drank to Intoxication During the Last 12 Months



Frequency With Which 15-Year-Olds Used an Alcoholic Beverage During the Last 12 Months



Frequency of drinking and of getting drunk during the last 30 days among European and American 15- and 16-year-olds, 2003. Data on European adolescents were taken from the 2003 European School Project on Alcohol and Other Drugs (ESPAD).

SOURCE: Hibell et al. 2004.

II. Measures of Problem Drinking

Self –identity

Reasons

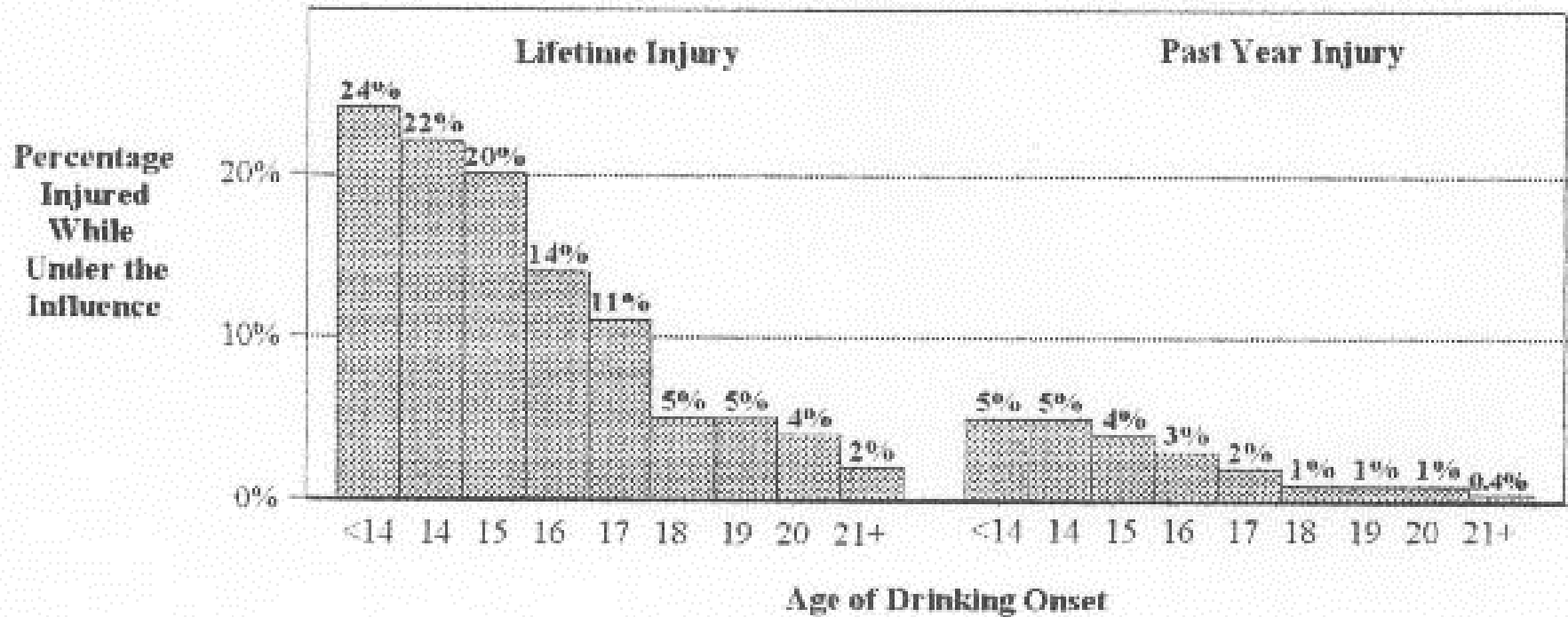
Frequency

Quantity

BAC levels

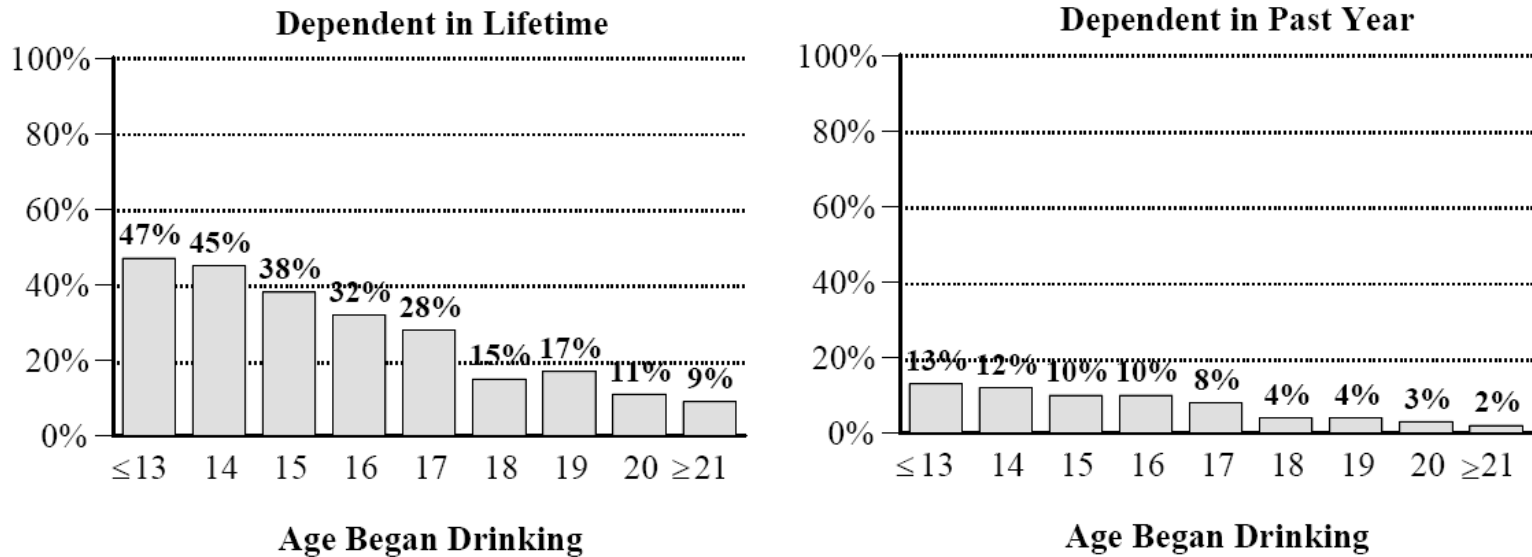
Consequences

**Percentage of People Injured in Their Lifetime and in the Past Year
While Under the Influence, by Age of Drinking Onset**
(N=26,797)



SOURCE: Adapted by CESAR from Hingson R.W., Heeren T., Jamanka A., Howland J., "Age of Drinking Onset and Unintentional Injury Involvement After Drinking," *Journal of the American Medical Association* 284(12):1527-1533, September 27, 2000. For more information, contact Dr. Ralph Hingson at rhingson@bu.edu.

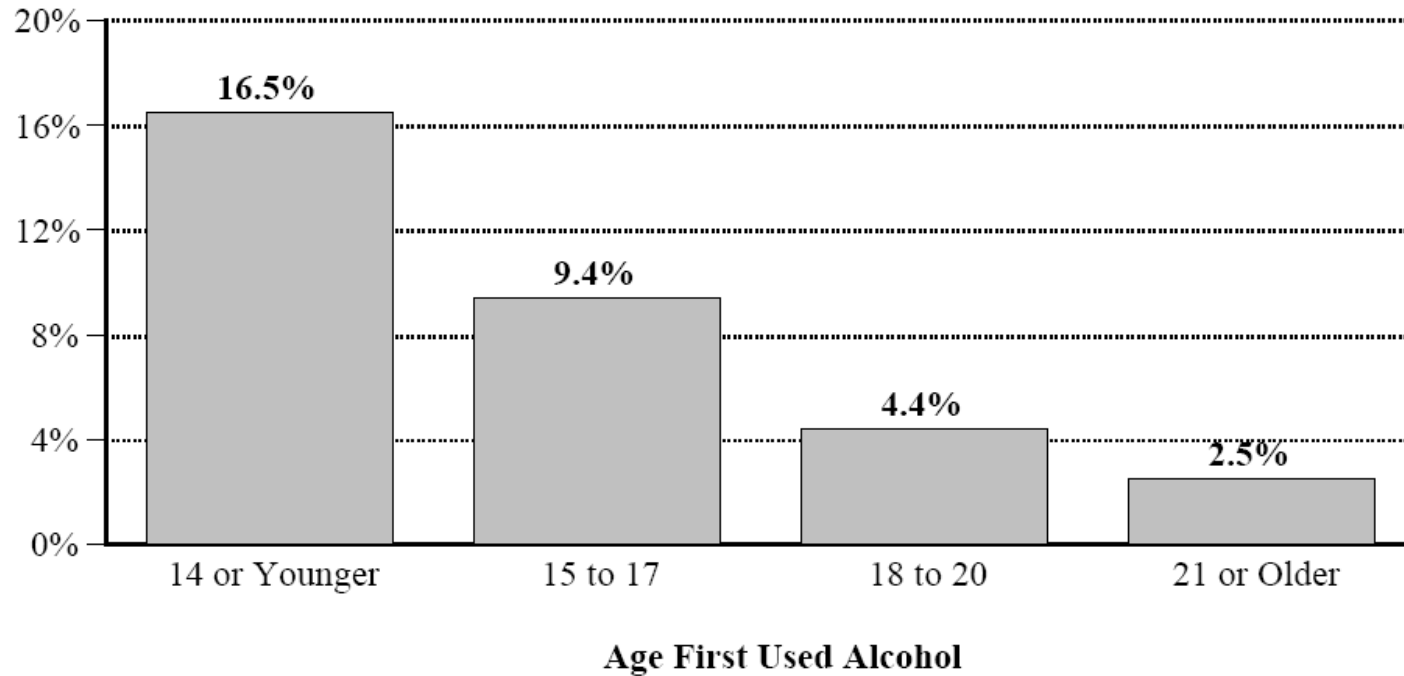
Percentage of U.S. Adults Aged 18 and Older Dependent on Alcohol, By Age of Drinking Onset



NOTES: The NESARC was a face-to-face survey of a multistage probability sample of 43,093 adults age 18 years and older conducted in 2001–2002. Data in the figure are based on the 26,829 respondents who reported ever drinking alcohol.

SOURCE: Adapted by CESAR from Hingson, R.W., Heeren, T., and Winter, M.R. “Age at Drinking Onset and Alcohol Dependence,” *Archives of Pediatrics and Adolescent Medicine* 160(7):739-746, 2006. Available online at <http://archpedi.ama-assn.org/cgi/reprint/160/7/739>. For more information, contact Dr. Ralph Hingson at rhingson@mail.nih.gov.

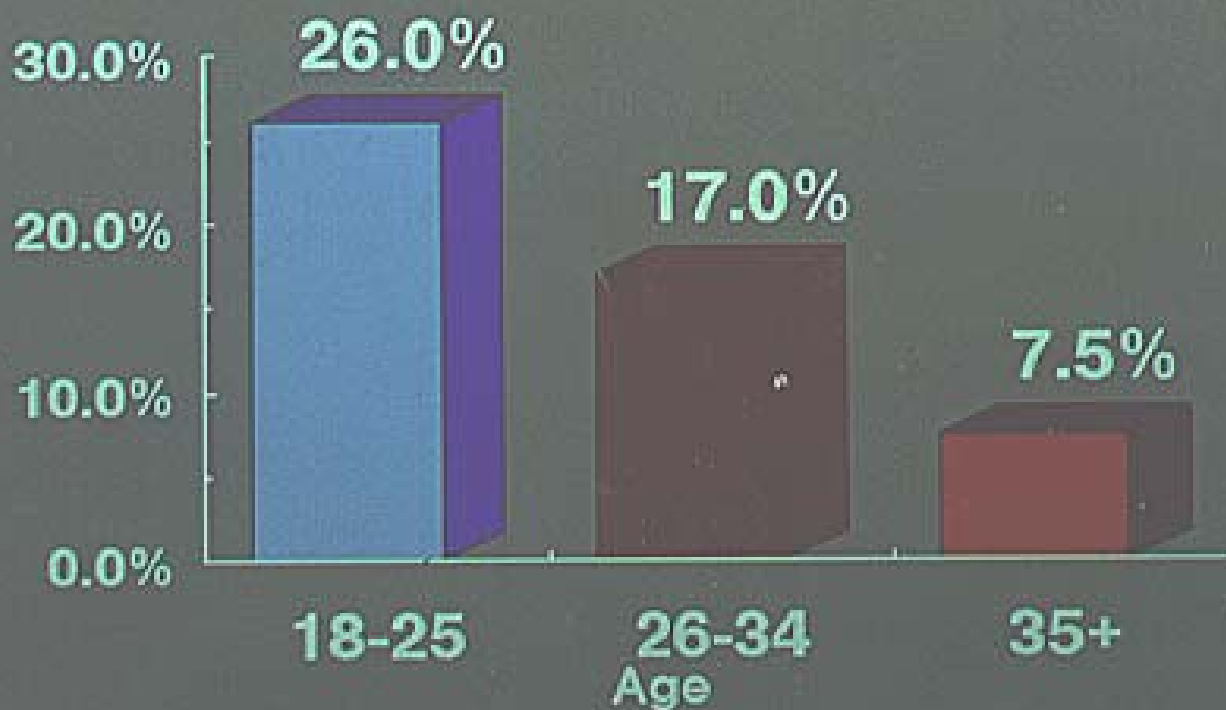
Percentage of Adults (Ages 21 or Older) Who Abused or Were Dependent on Alcohol in the Past Year, by Age of First Alcohol Use, 2009



NOTE: Abuse or dependence are defined using DSM-IV criteria.

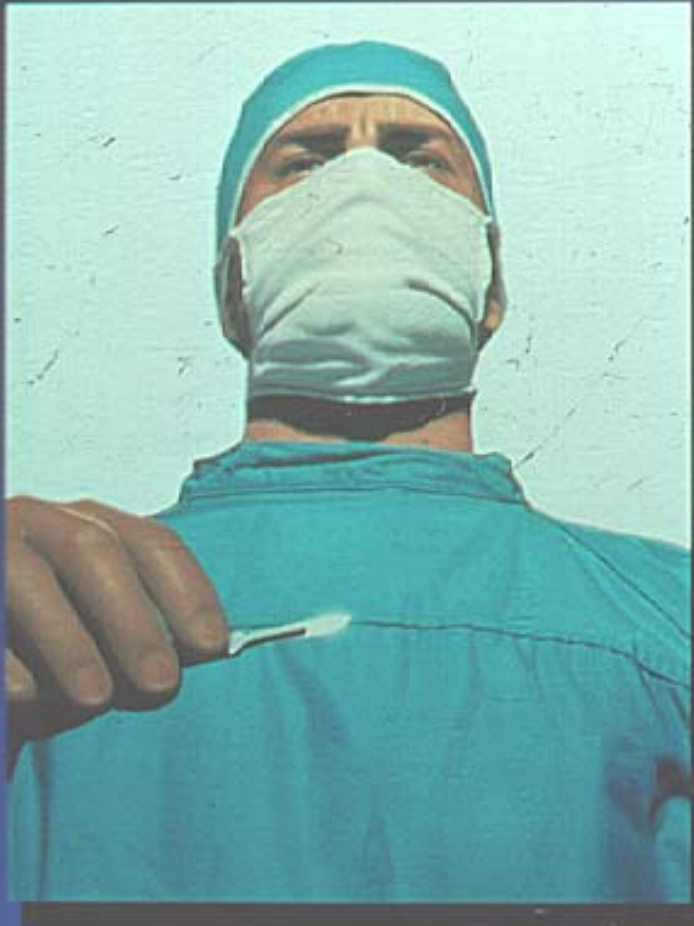
SOURCE: Adapted by CESAR from Substance Abuse and Mental Health Services Administration, *Results from the 2009 National Survey on Drug Use and Health: Detailed Tables*, 2010. Available online at <http://oas.samhsa.gov/WebOnly.htm#NSDUHtabs>.

Annual Blackout Prevalence By Age



NIDA Household Survey on Drug Abuse: Main Findings, 1985

Alcohol and Health



Thirty to fifty percent of all hospital admissions are for alcohol and other drug related diseases.

A partial list includes:

- Ulcers
- Colitis
- Birth Defects
- High Blood Pressure
- Damage to the Immune System
- Cancers of the Liver, Larynx, Esophagus, Stomach, Colon, and Breast
- Renal Failure
- Stroke

Source: DASPOP (Drug and Alcohol Service Providers Organization of Pennsylvania). Suite III, Host Inn, 4751 Lindle Road, Harrisburg, PA, 17111.

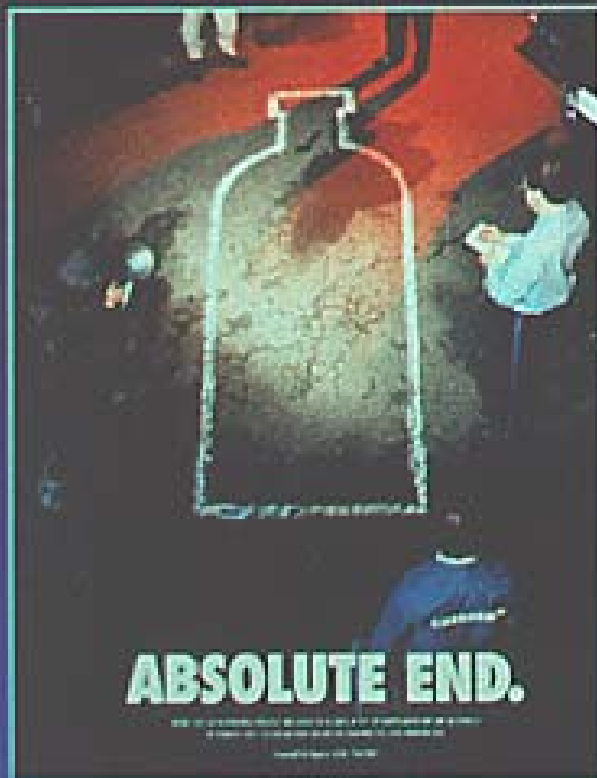
FACE
Truth and Clarity on Alcohol

Cancers Associated With Drinking

Lip
Tongue
Oral Cavity
Pharynx
Larynx
Esophagus
Lung

Stomach
Colon
Rectum
Pancreas
Liver

Alcohol Involvement in Injuries and Deaths



- Aviation deaths 14% to 32%
- Drownings 34% to 62%
- Fatal falls 21% to 48%
- Fatal fires 30% to 54%
- Traffic fatalities 41%
- ATV fatalities 75%
- Passenger and pedestrian deaths 33%
- Nonfatal bicycle injuries 25% to 50%

Source: Prevention File, Special Edition 1992, Pages 3, 13, 14.

FACE

Truth and Clarity on Alcohol

Alcohol Involvement in Injuries and Deaths as Estimated by Various Studies

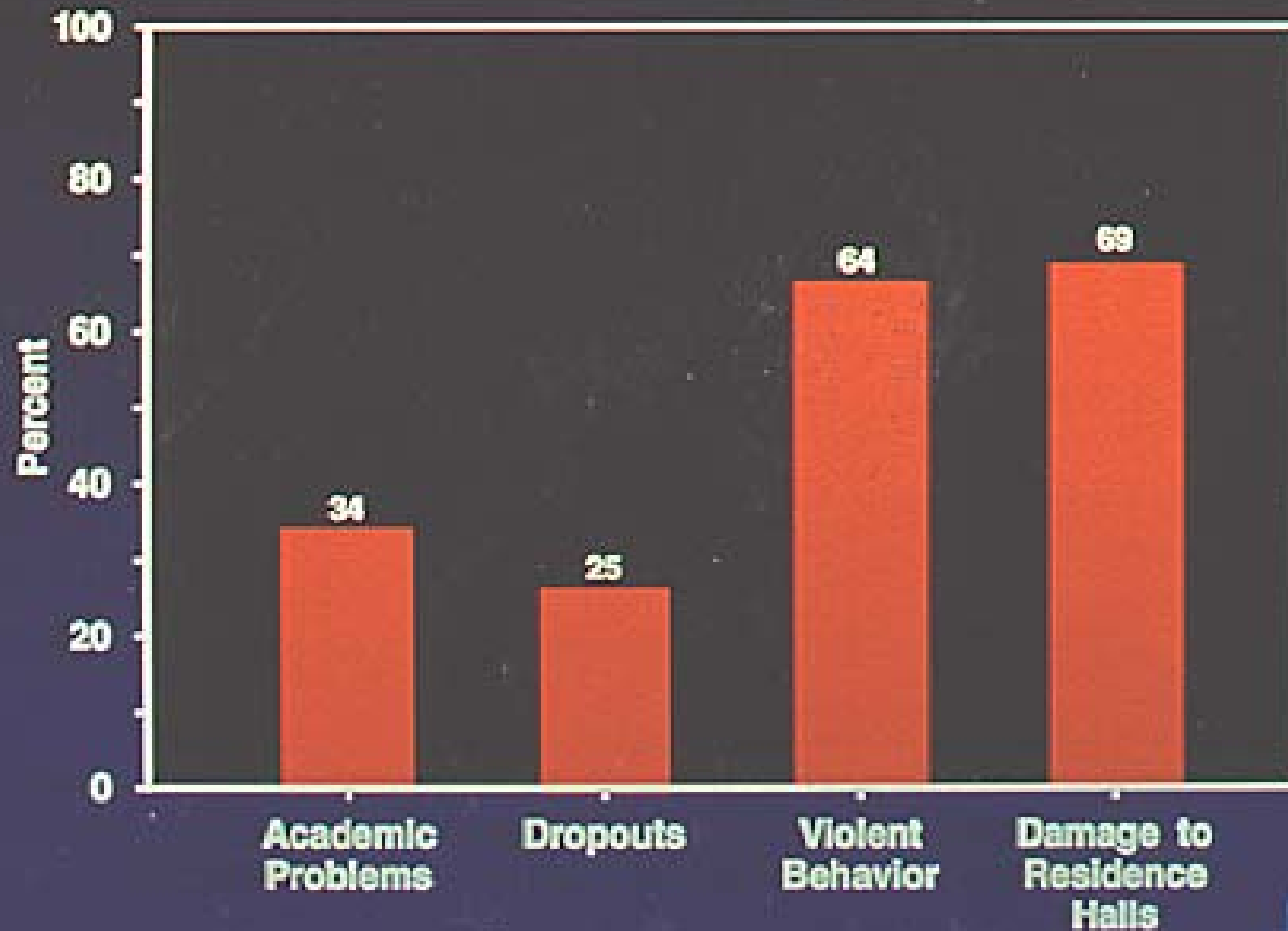


Homicides	50%
Suicides	33-50%
Wife Beating Injuries	50%
Nonfatal Intentional Injuries	25-50%
Industrial/Occupational Deaths	9-40%
Nonfatal Unintentional Injuries Up to	50%

Source: *Prevention File*, Special Edition 1992, Page 3,13,14.



Campus Problems Associated With Alcohol

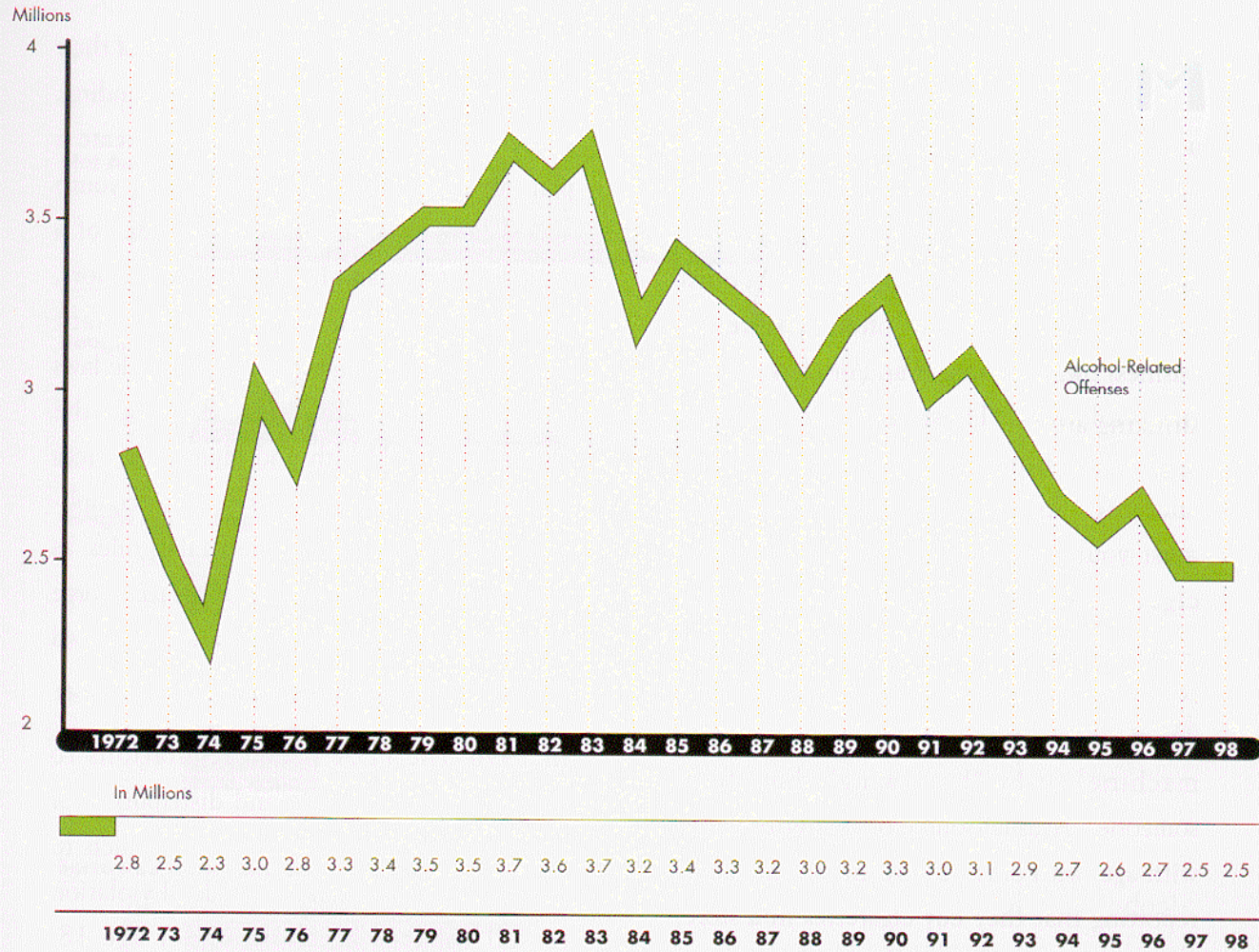


Source: *The Challenge*, U.S. Department of Education, Volume 4, Number 2.



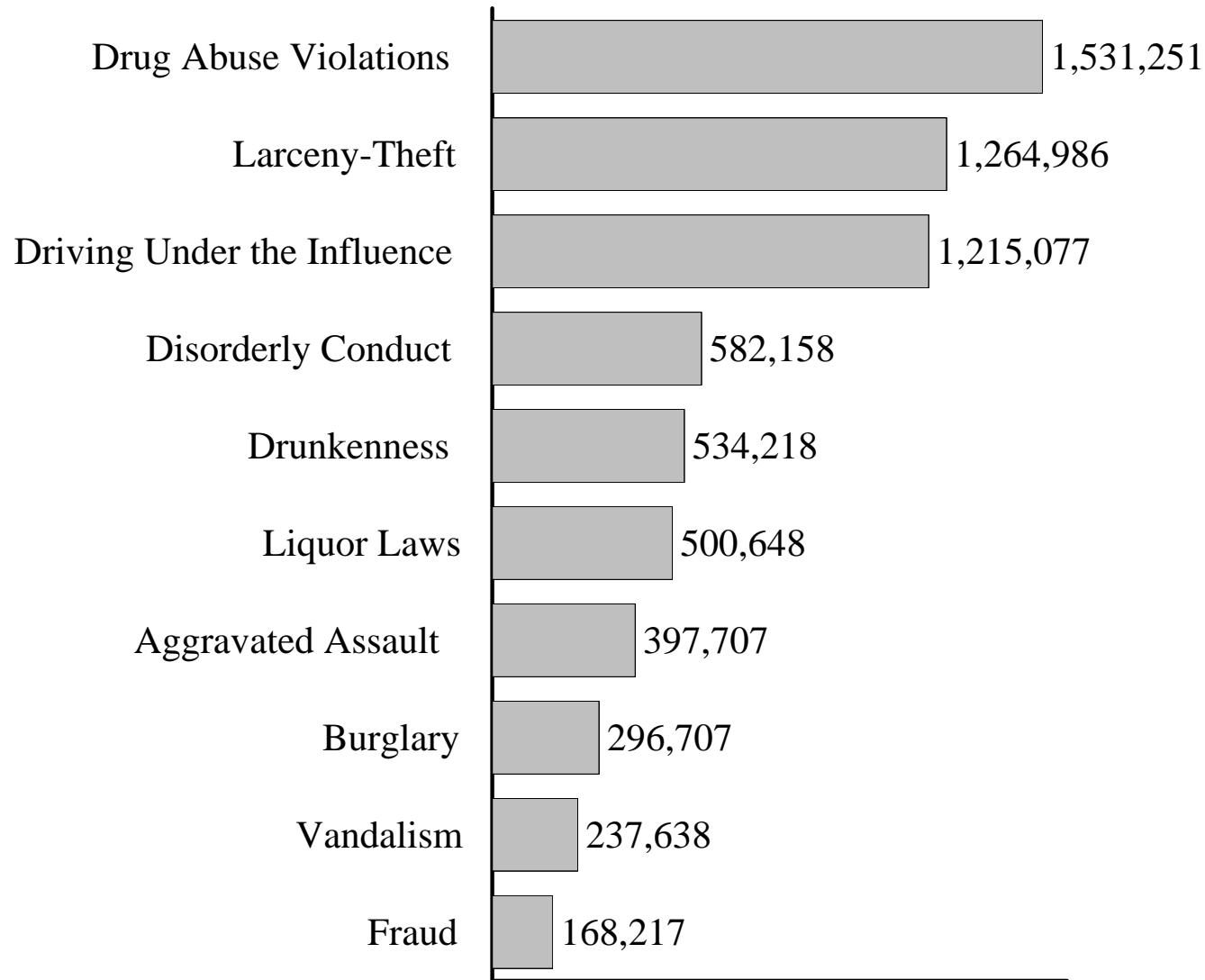
Indicator 40

Arrests for Alcohol Offenses Have Decreased since the Early '80s



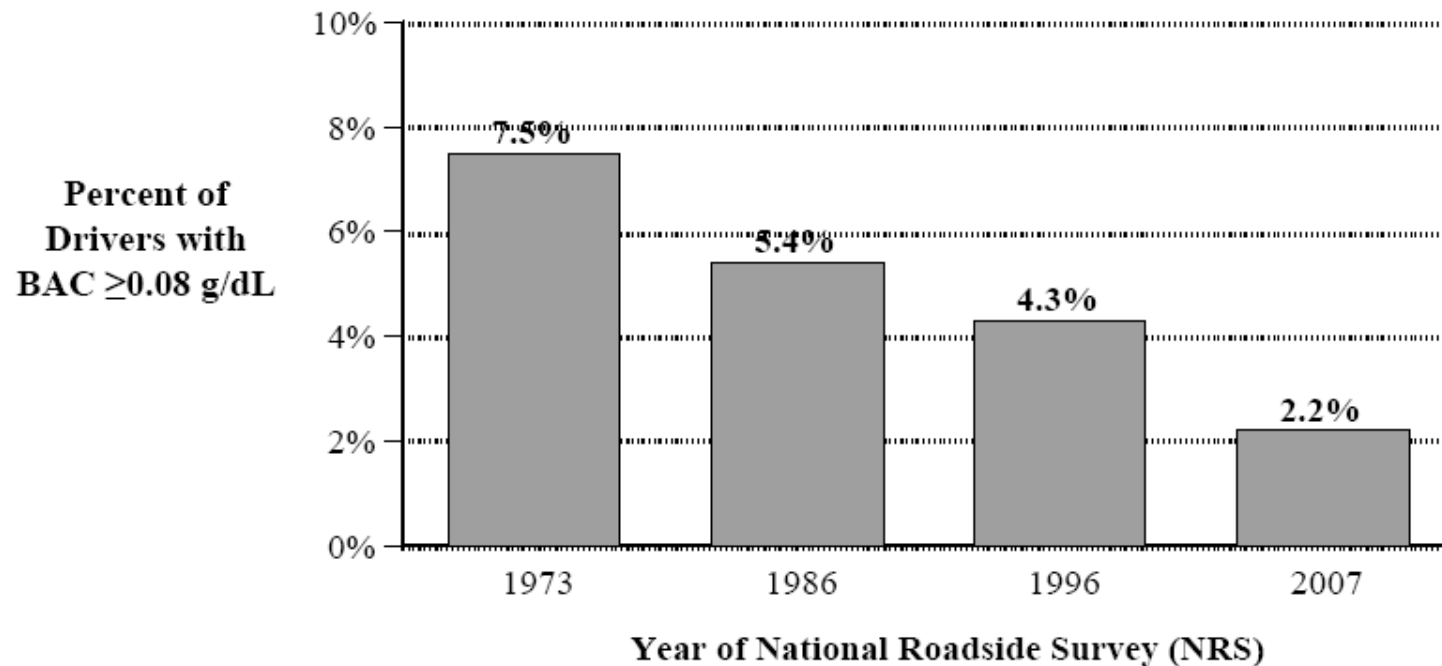
Source: Substance Abuse The Nation's Number One Health Problem (Robert Wood Johnson Foundation).

Estimated Number of Arrests in the United States, 2011 (Top Ten Offenses)



SOURCE: Adapted by CESAR from U.S. Department of Justice, Federal Bureau of Investigation, *Crime in the United States, 2011*, 2012 (available online at <http://www.fbi.gov/about-us/cjis/ucr/crime-in-the-u.s/2011/crime-in-the-u.s.-2011/persons-arrested/persons-arrested>).

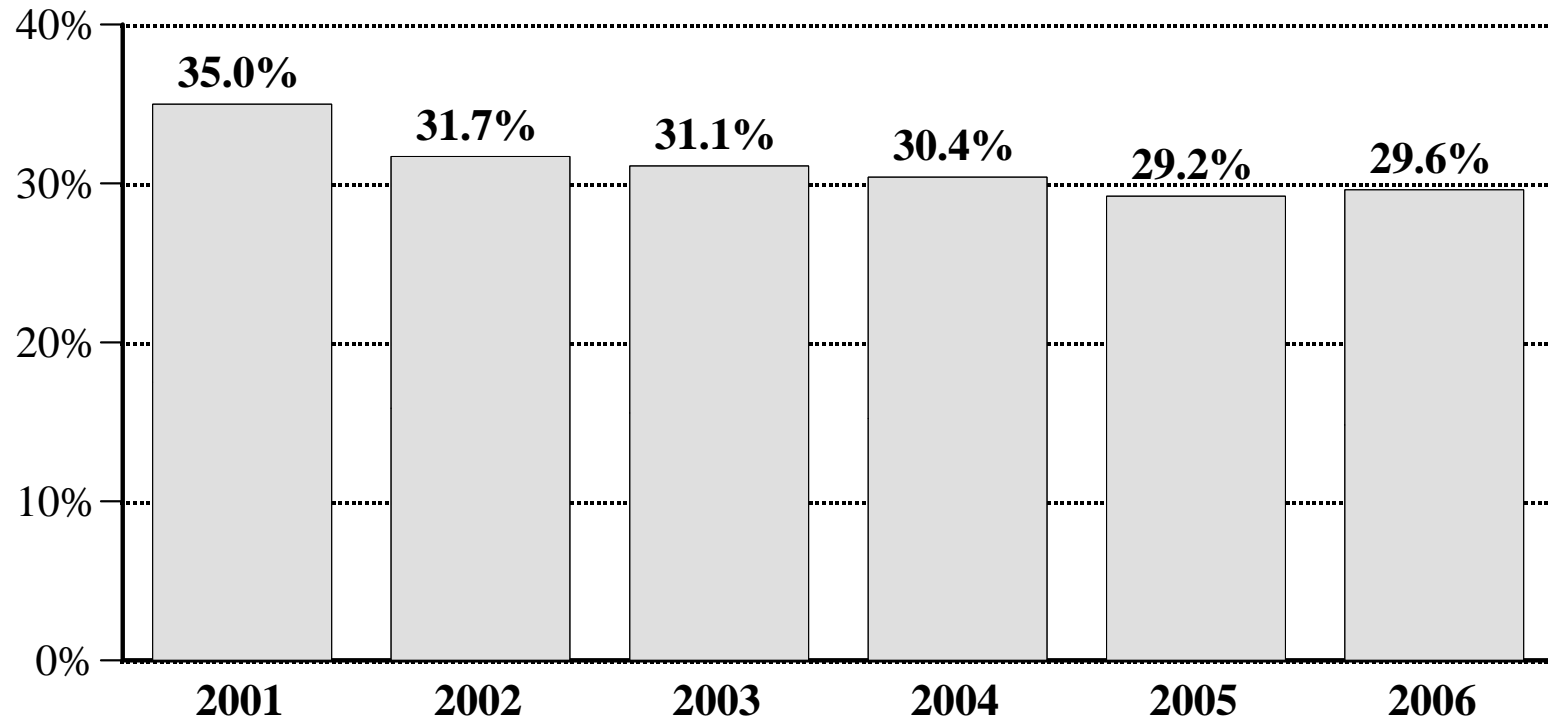
Estimated Percentage of Weekend Nighttime Drivers with BACs ≥ 0.08 g/dL



*The National Roadside Survey (NRS) is a stratified random sample of weekend nighttime drivers in the contiguous 48 states conducted by either the National Highway Traffic Safety Administration and/or the Insurance Institute for Highway Safety. In the 2007 survey, breath-alcohol measurements were obtained from 9,413 drivers.

SOURCE: Adapted by CESAR from data from National Highway Traffic Safety Administration (NHTSA), "Results of the 2007 National Roadside Survey of Alcohol and Drug Use by Drivers," *Traffic Safety Facts Research Note*, July 2009. Available online at <http://www.nhtsa.gov/staticfiles/DOT/NHTSA/Traffic%20Injury%20Control/Articles/Associated%20Files/811175.pdf>.

Percentage of U.S. High School Seniors Reporting Driving After Heavy Drinking and/or Illicit Drug Use or Riding in a Vehicle After Such Use by the Driver, 2001 to 2006



SOURCE: Adapted by CESAR from O'Malley, P.M. and Johnston, L. D. Drugs and Driving by American High School Seniors, 2001-2006, *Journal of Studies on Alcohol and Drugs* 68(6):834-842.

III. Societal Costs and “2nd Hand Effects”

For example:

Date rape and violence

Alcohol-related vehicle crashes

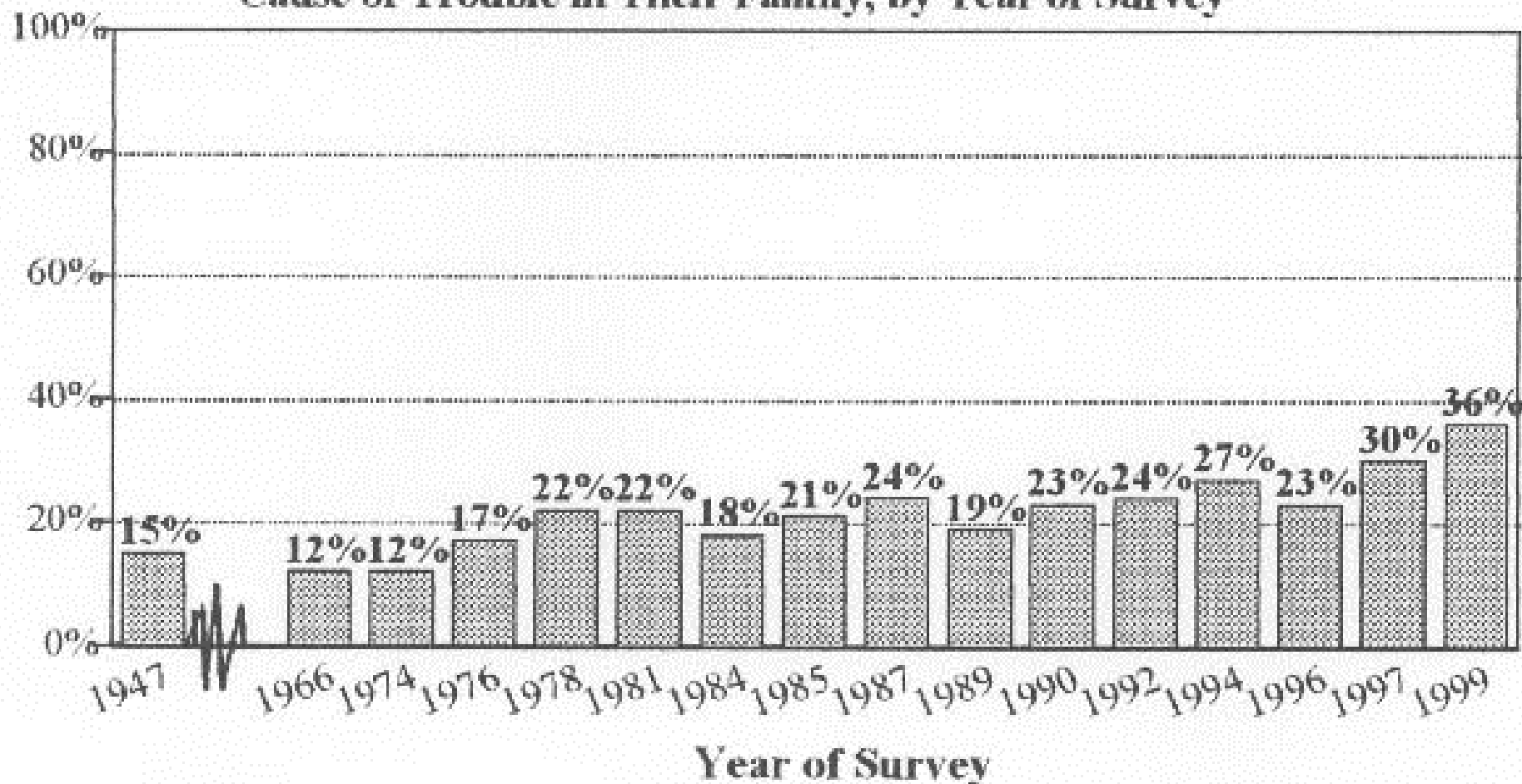
Transportation workers

Lost work hours

Medical service costs and organs

FAS

Percentage Reporting That Drinking Has Ever Been a Cause of Trouble in Their Family, by Year of Survey

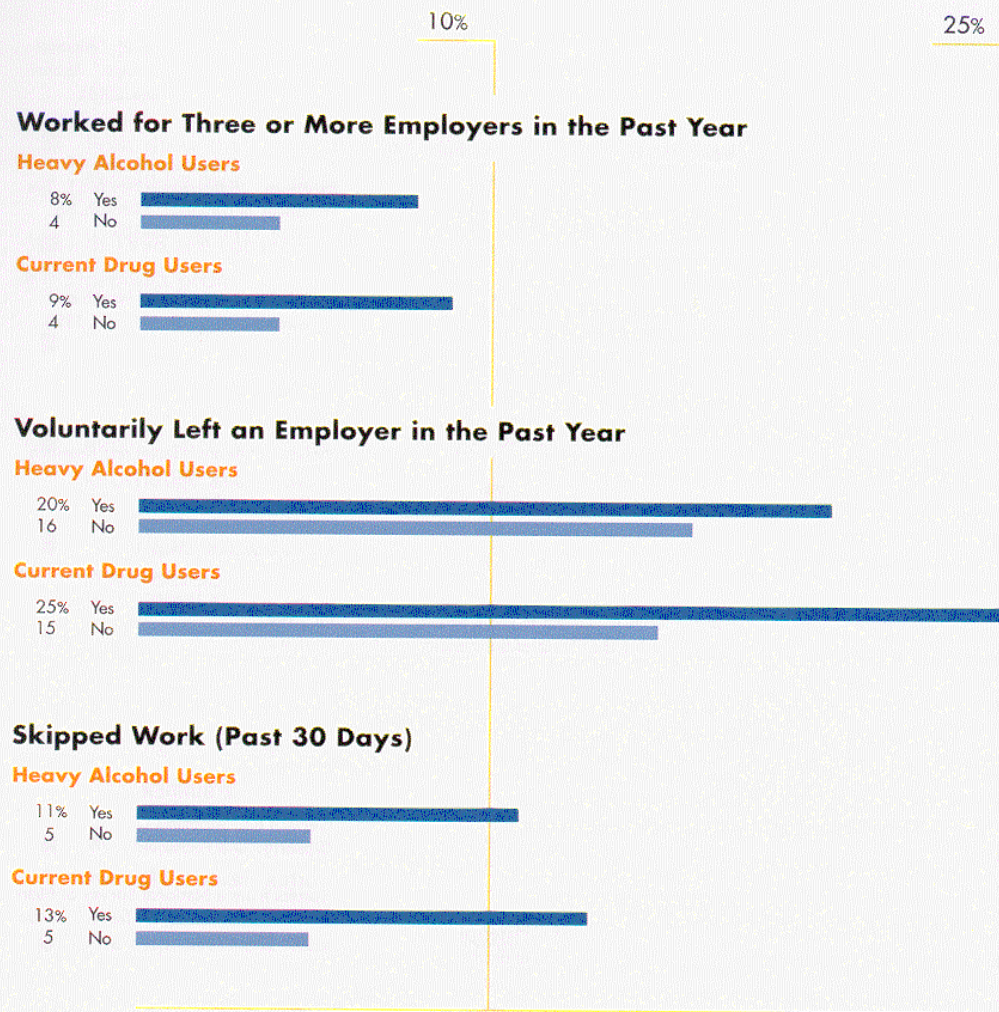


SOURCES: Newport, F. (1999, November 3). More than a third of Americans report drinking has caused family problems. Gallup Organization Poll Releases [Online]. Available: <http://www.gallup.com/poll/releases/pr991103.asp> [1999, November 11]

Indicator 28

Alcohol and Drug Users Have Problems Working, 1997

Full-Time Employees, Ages 18-49



Source: Substance Abuse The Nation's Number One Health Problem (Robert Wood Johnson Foundation).



Alcohol and Other Drug Problems in Business

- Alcohol use alone accounts for more than half of the estimated \$102 billion lost each year to reduced and lost productivity¹
- Alcohol is involved in 47% of industrial accidents²

¹ National Institute on Drug Abuse, *Facts About Drugs In the Workplace*, November, 1988; National Council on Alcoholism and Drug Dependence Inc., *Medical/Scientific Advisory*, 5(1), 1990.

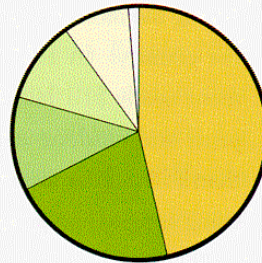
² National Council on Alcoholism and Drug Dependence Inc., *Medical/Scientific Advisory*, 5(1), 1990.



Economic Costs of Substance Abuse Are High, 1995

Alcohol Abuse

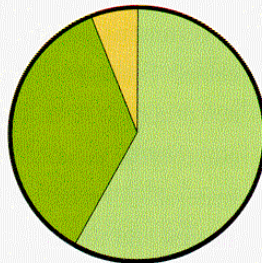
\$166.5 billion



- 46% Illness
- 21 Deaths
- 12 Medical
- 11 Other Related Costs
- 9 Crime
- 1 Special Conditions

Smoking

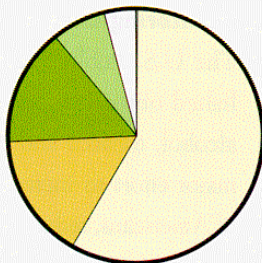
\$138.0 billion



- 58% Medical
- 36 Deaths
- 6 Illness

Drug Abuse

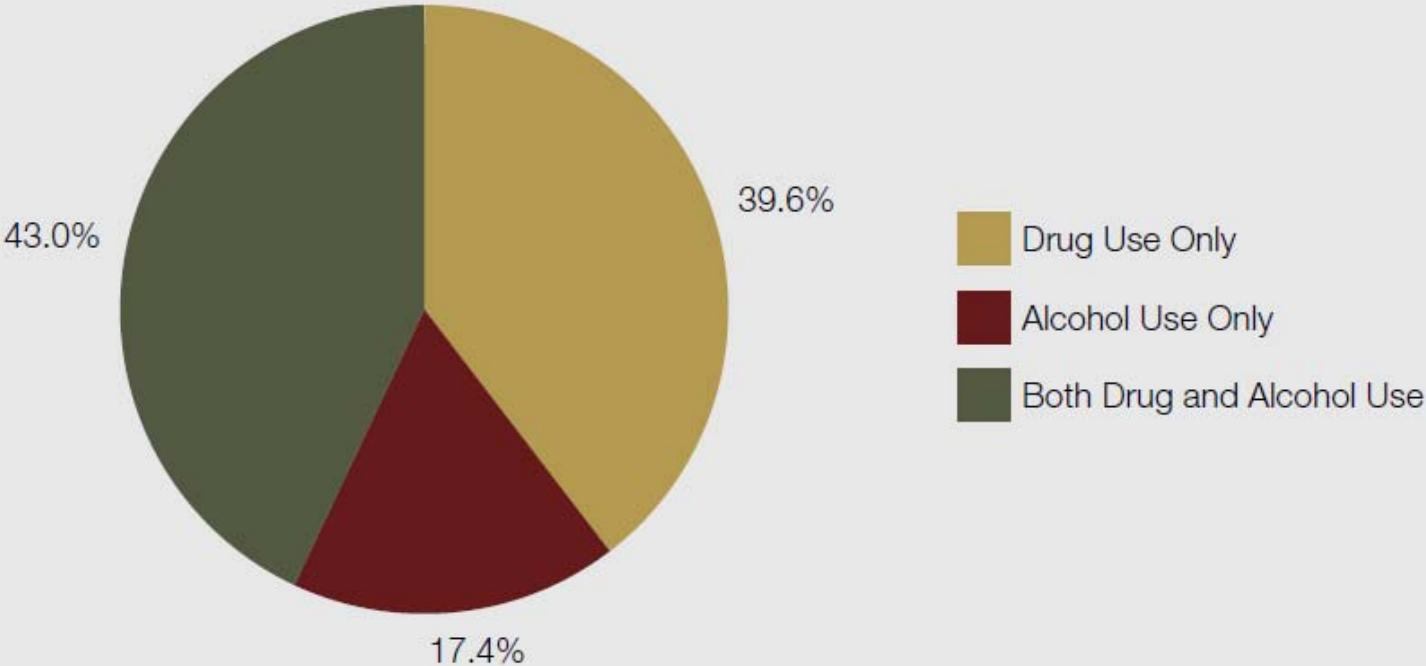
\$109.9 billion



- 58% Crime
- 16 Illness
- 15 Deaths
- 7 Medical
- 4 Special Conditions

Source: Substance Abuse The Nation's Number One Health Problem (Robert Wood Johnson Foundation).

Substances Used among Persons Enrolled in Substance Use Treatment: Single-Day Count (2013)^{16,17}



1,249,629 People In Substance Use Treatment In a Single-Day Count

Source: SAMHSA, Center for Behavioral Health Statistics and Quality, National Survey of Substance Abuse Treatment Services, 2013.



Results of Alcohol Misuse

- 50% of Spouse Abuse
- 20-35% of Suicides
- 62% of Assaults
- 52% of Rapes
- 38% of Child Abuse
- 69% of Drownings
- 68% of Manslaughter Charges
- 49% of Murders
- 50% of Traffic Fatalities

FACE

Truth and Clarity on Alcohol

Source: As reported in the NIAAA Sixth Special Report to Congress, 1987, 1993



- **Fetal Alcohol Syndrome is the third leading cause of birth defects in the United States affecting 1 out of every 750 live births.**
- **FAS is caused by women drinking alcohol during pregnancy.**
- **Fetal Alcohol Syndrome is 100 percent preventable.**

Source: National Council on Alcoholism, 1988.



