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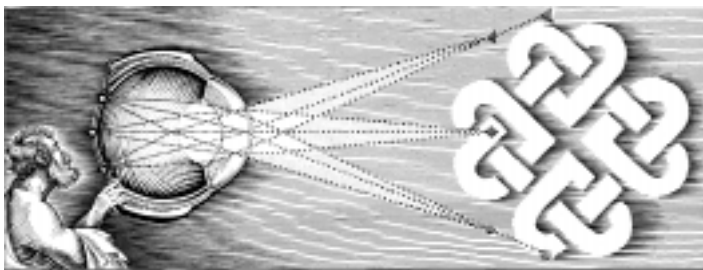
Costs of Underage Drinking



Prepared for the
OJJDP National Leadership Conference
July 11—14, 1999

Sheraton Reston Hotel
11810 Sunrise Valley Drive
Reston, VA 20191

In support of the
***OJJDP Enforcing the
Underage Drinking Laws Program***



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About This Guide

Increasingly, underage alcohol use is receiving attention from policymakers and the public. In view of the problems created by underage drinking, it is appropriate that this issue continue to be high on our national agenda, especially since we have so many effective tools for preventing underage drinking.

This document provides information about the range of serious health and social problems associated with underage drinking and their economic costs. The document can be used to

- Increase awareness that underage drinking is related to a host of serious problems,
- Inform policymakers and decisionmakers of the importance of preventing underage drinking,
- Provide information regarding the magnitude of underage drinking problems, and
- Help to set prevention priorities.

Significant progress has been made in reducing underage drinking and related problems. If that progress is to be maintained and continued, the issue must be given even wider visibility, and the public and policymakers must develop a more complete understanding of the problems and the costs. This document can help in that effort.



This project was supported by the Office of Juvenile Justice and Delinquency Prevention in conjunction with its Enforcing Underage Drinking Laws program. The guide was prepared for the National Leadership Conference as part of the Phase II Training and Technical Assistance program.

The opinions in this document are those of the authors and do not necessarily reflect the official position or policies of the U.S. Department of Justice.

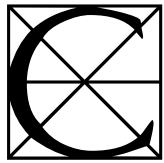
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The authors would like to thank:

Sharon L. Cantelon of the Office of Juvenile Justice and Delinquency Prevention for her review and suggestions on the first draft; and

Ruthmarie L. Kelley, M.L.S., of The CDM Group, Inc., for research and editorial support

Revised July 15, 1999



Costs of Underage Drinking*

Raising the minimum purchase age for alcohol to 21 throughout the country has been a successful strategy for reducing alcohol use and preventing related problems. For example, since 1975 minimum purchase age laws have prevented more than 17,000 traffic fatalities.¹ However, it is clear that young people still drink—and their drinking all too often results in serious health and social problems. For the first time, estimates are available of the costs associated with underage alcohol consumption. The cost estimates summarized in this document can be useful in supporting decisions by planners and policymakers to take strong and deliberate action to reduce underage drinking. Of course, regardless of the economic costs associated with underage drinking, those who care about youth should be motivated to prevent the tragic consequences associated with underage alcohol use.

Costs of Alcohol Use by Youth

The total cost of alcohol use by youth is \$58,379 billion per year.²

- This is the equivalent of \$216.22 for every man, woman, and child in the United States.
- This also equals \$577.91 per year for every household in the United States.³
- If this cost were shared equally by each congressional district, the amount would total more than \$134 million per district.
- Each year, the Federal Government spends \$932.2 million on alcohol prevention services for people of all ages:⁴ This total is less than 1.6 percent of the annual costs of alcohol use by youth alone.

* A more complete description of the estimation methodology used here can be found in Center for Substance Abuse Prevention. (1996). *Costs of alcohol-involved and alcohol-connected crime*, by the Pacific Institute for Research and Evaluation. Manuscript submitted for publication. (Available from Pacific Institute, 11140 Rockville Pike, Suite 600, Rockville, MD 20852.)

Problems Caused by Alcohol Use

Many of us are all too familiar with the most common and immediate consequence of underage drinking—alcohol-related traffic crashes. The combination of alcohol use with driving by young people with little alcohol tolerance or driving experience can indeed be deadly. As can be seen in figure 1, several other problems are associated with underage drinking, including crime, various types of traumatic injury, suicide, fetal alcohol syndrome (FAS), alcohol poisonings, and alcohol

These problems and their staggering costs are indeed alarming, but it is important to keep in mind that many effective tools are available to prevent and reduce underage drinking. The reduction in traffic fatalities resulting from the increase in the minimum drinking age has resulted in a savings to society of \$53.6 billion (in 1998 dollars)—and a significant reduction in physical and emotional suffering.

Understanding the nature of underage drinking—and the human, economic, and other costs associated with it—hopefully will promote more vigorous and comprehensive application of effective prevention strategies. The future of youth depends on these efforts.

Figure 1. Costs of Alcohol Use by Youth—At a Glance

(in 1998 Dollars)

Traffic Crashes	—————→	\$18,242,000,000
Violent Crime	—————→	\$35,937,000,000
Burns	—————→	\$315,000,000
Drowning	—————→	\$532,000,000
Suicide Attempts	—————→	\$1,512,000,000
Fetal Alcohol Syndrome	—————→	\$493,000,000
Alcohol Poisonings	—————→	\$340,000,000
Treatment	—————→	\$1,008,000,000
TOTAL		\$58,379,000,000

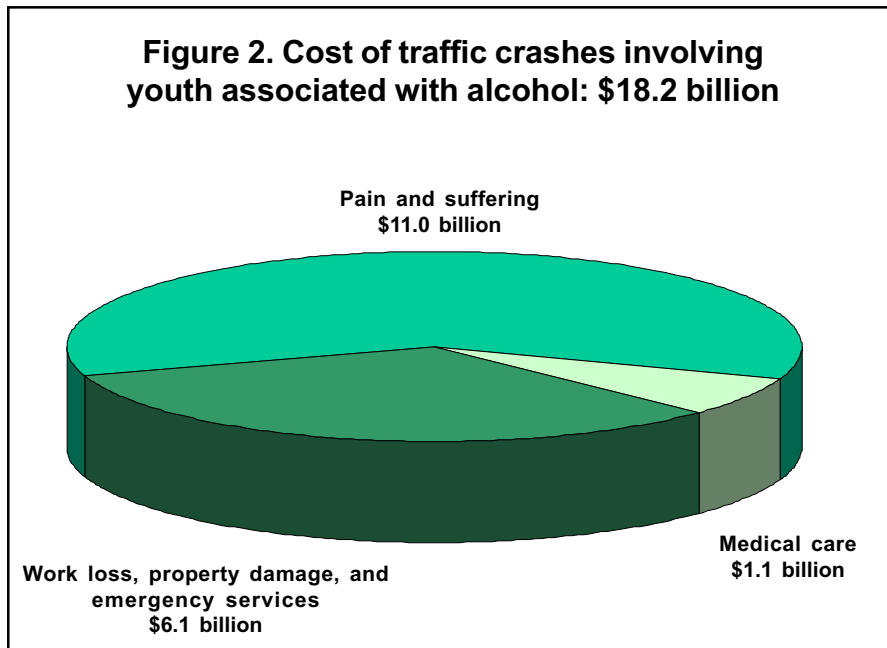
Source: David T. Levy, Ph.D., Ted R. Miller, Ph.D., Rebecca Spicer, and Kathryn Stewart, "Underage Drinking: Immediate Consequences and their Costs," Pacific Institute for Research and Evaluation working paper, June 1999 (endnote 2).

Note: In the discussion and illustrations that follow, the actual costs have been rounded for ease of illustration.

Specific Alcohol-Related Problems

Traffic Crashes

Almost 20 percent of all traffic crashes involving a driver under age 21 involve alcohol. Of course not every crash *involving* alcohol is actually *caused* by alcohol. Counting only those crashes with a driver under age 21 that are attributable to alcohol, the costs total \$18.2 billion per year (in 1998 dollars).⁵ (See figure 2.) In addition, a cost of \$289 million is accrued in accidents involving pedestrians and cyclists under age 21.⁶



Source: see endnote 2.

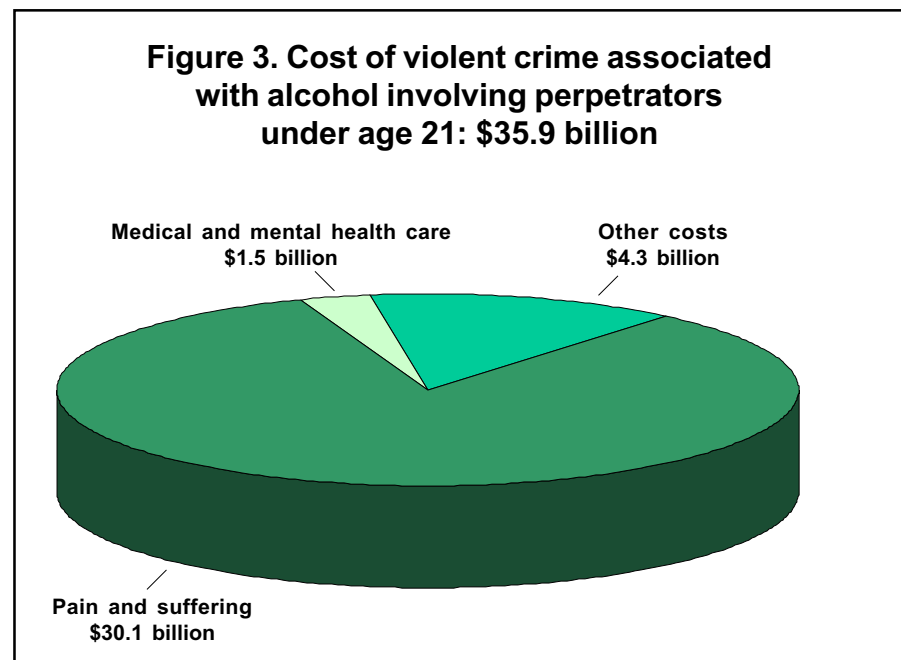
Interpersonal Violence

It is estimated that incidents of interpersonal violence committed by individuals under age 21 account for approximately:

- 32 percent of murders,
- 45 percent of rapes,
- 44 percent of robberies,
- 37 percent of assaults, and
- 16 percent of child abuse.⁷

Numerous studies reveal that both perpetrators and victims of violence are often under the influence of alcohol at the time of the offense.⁸ A causal role of alcohol in violence is supported by experimental studies of biological effects⁹ and population studies that control for other factors. These findings are borne out in interviews with convicted offenders: in 1996, 36 percent of adult offenders indicated that they had been drinking when they committed their crimes.¹⁰ One study found that some types of youth homicide declined when States raised the minimum drinking age and that beer consumption levels predicted youth homicide rates.¹¹

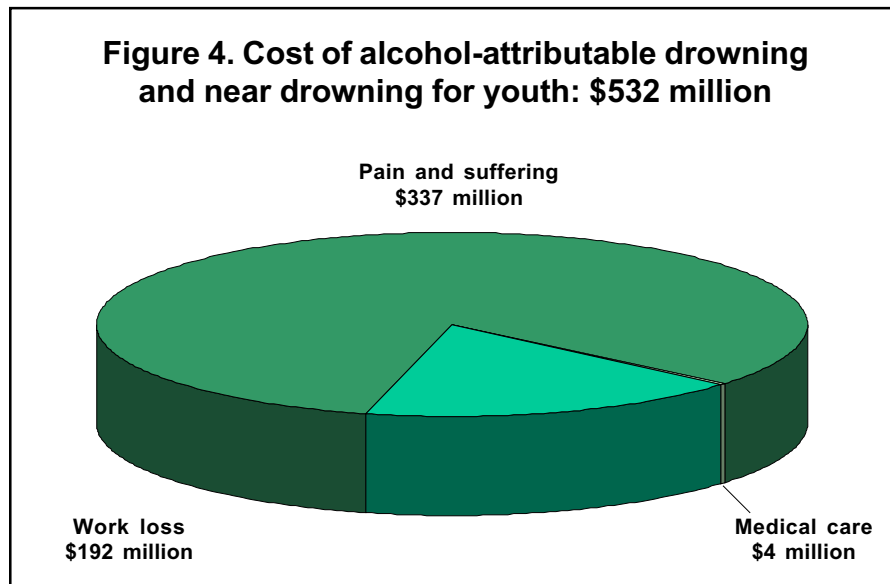
The total cost of alcohol-attributable violent crime involving perpetrators under age 21 is \$35.9 billion (see figure 3).



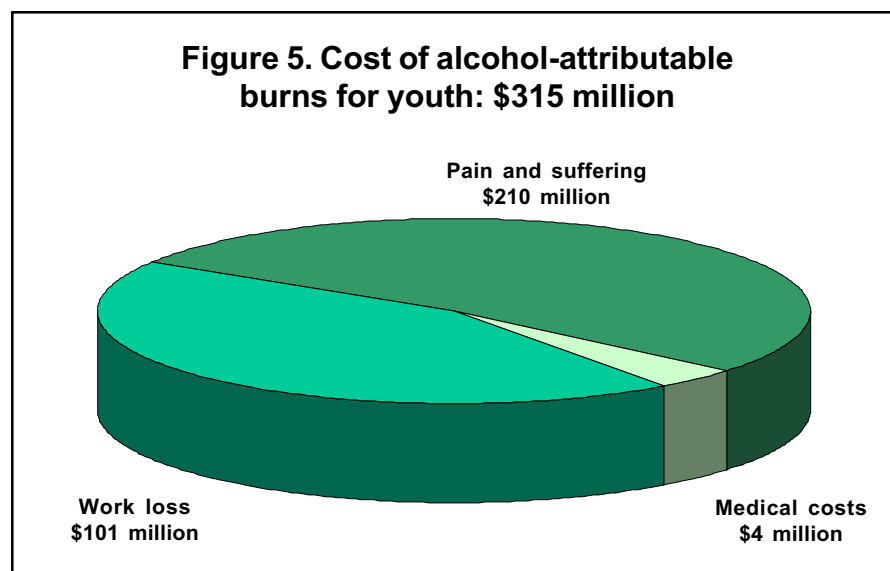
Source: see endnote 2.

Unintentional Drownings and Burns

The involvement of alcohol in cases of fatal drownings and burns has been well described in alcohol literature, although rates of involvement vary considerably.¹² Alcohol involvement in drownings is high among youth,¹³ and the cost of alcohol-attributable drowning and near drowning for youth is \$532 million. The cost of alcohol-attributable burns for youth is \$315 million. (See figures 4 and 5.)¹⁴



Source: see endnote 2.

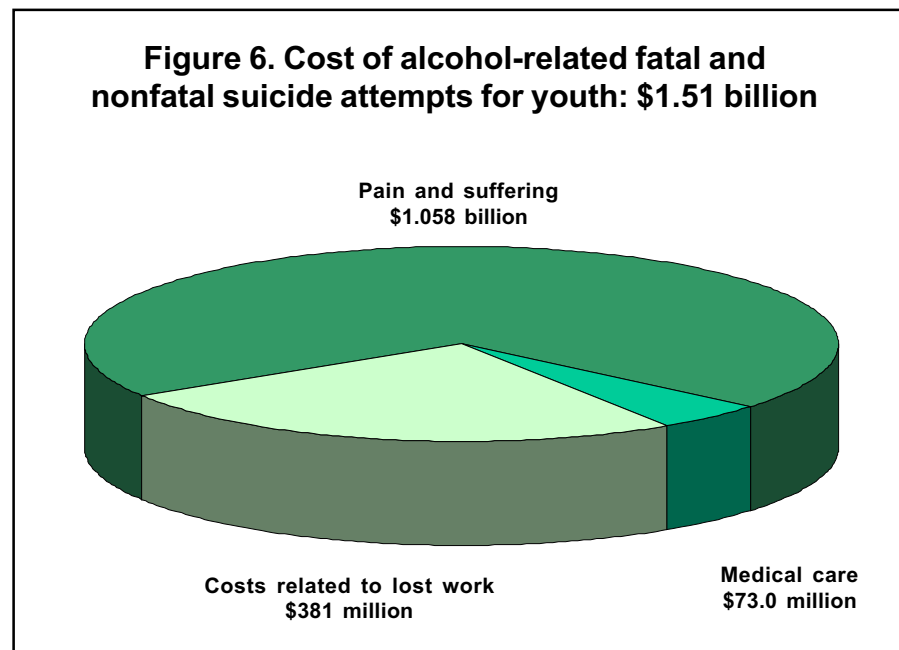


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Suicides

Of approximately 31,000 completed suicides that occurred in 1994, almost 3,000 (9 percent) involved individuals under age 21. In addition, close to 230,000 nonfatal suicide attempts took place, of which approximately 60,000 (26%) involved those under age 21. The association of alcohol with suicide has been established by numerous studies.¹⁵ It is estimated that 12 percent of male suicides and 8 percent of female suicides are attributable to alcohol.¹⁶

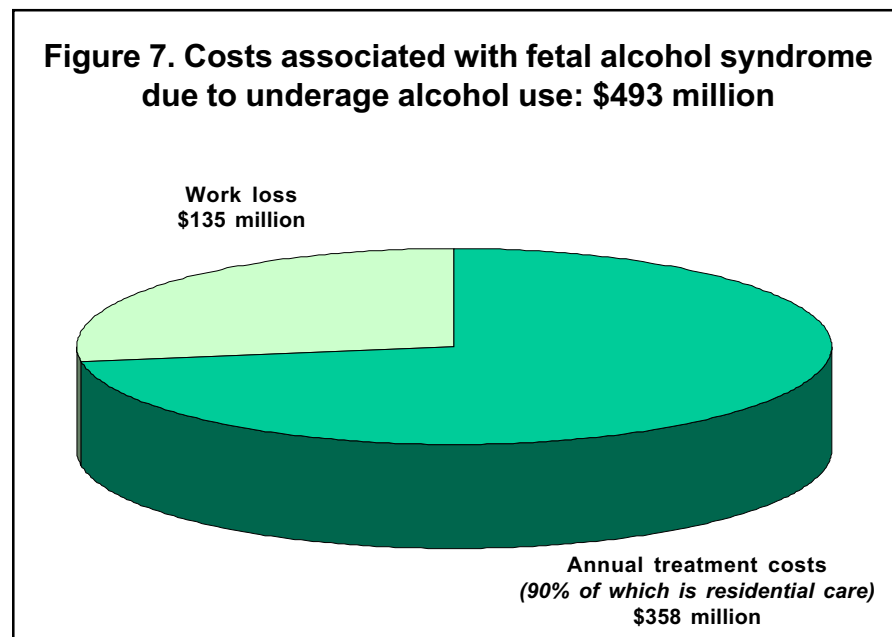
The cost of alcohol-attributable suicide attempts (fatal and nonfatal) for youth is \$1.51 billion in 1998 dollars. (See figure 6.) Nonfatal attempts may result in additional costs due to psychological harm which are excluded from the above estimates.



Source: see endnote 2.

Fetal Alcohol Syndrome

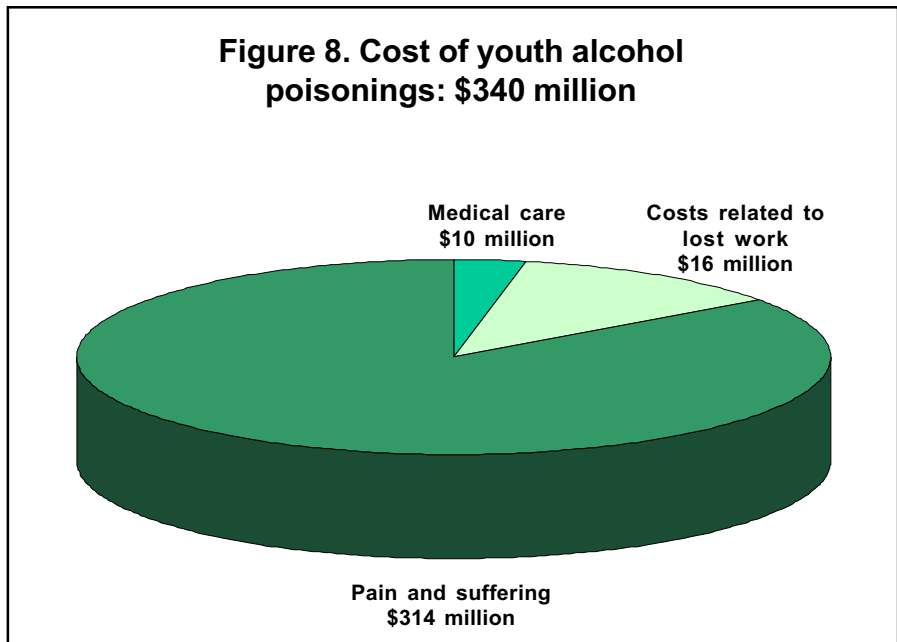
Prenatal alcohol exposure is known to be toxic to the developing fetus and is one of the leading causes of mental retardation.¹⁷ A recent government study estimated that FAS cost society more than \$944 million in 1992.¹⁸ The cost of FAS as a consequence of underage alcohol use is \$493 million. (See figure 7.)



Source: see endnote 2.

Alcohol Poisonings

Heavy drinking can lead to alcohol poisoning. In 1994 there were 10 fatal and 40,000 nonfatal cases of alcohol poisoning among youth in the United States. The cost of youth alcohol poisonings was \$340 million in 1994, calculated in 1998 dollars. (See figure 8.) Alcohol poisonings are likely to be heavily *underreported* because physician reports often omit the mention of alcohol in patient records to avoid family embarrassment.¹⁹

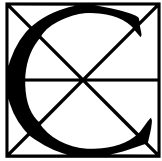


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Alcohol Dependence and Alcohol Abuse

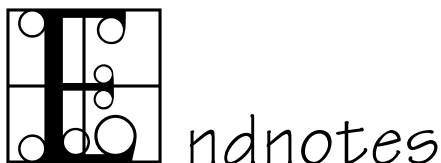
In 1991, 9.4 percent of alcoholism-only and 16.2 percent of alcohol-and-other-drug treatment clients were under age 21.²⁰

Total costs of alcohol dependence for those under age 21 for the United States are estimated at \$1.008 billion annually. Treatment costs for alcohol dependence syndrome average an estimated \$16,000 per case. These costs are understated because they do not include productivity-related losses.



Conclusion

It is important for policymakers and the public to have a clear understanding of the many problems related to underage drinking and of the magnitude of these problems, both in human and in economic terms. We have made significant progress in reducing underage drinking and some of its consequences. Many effective prevention and enforcement strategies have been developed that can be applied more broadly and more vigorously to reduce the enormous costs. If we are to make further progress, we must make preventing underage drinking a high social and political priority.



- ¹ National Highway Traffic Safety Administration. (n.d.) Traffic Safety Facts 1997: Alcohol. Washington, DC: NHTSA.
- ² David T. Levy, Ph.D., Ted R. Miller, Ph.D., Rebecca Spicer, and Kathryn Stewart, "Underage Drinking: Immediate Consequences and their Costs," Pacific Institute for Research and Evaluation working paper, June 1999.
- ³ Based on U.S. population of 270 million and total U.S. households of 101,018,000. Both figures from *The world almanac and book of facts 1999*. (1998). Primedia Reference, 373, 384.
- ⁴ National Institute on Drug Abuse & National Institute on Alcohol Abuse and Alcoholism. (1998). *The economic costs of alcohol and drug abuse in the United States 1992*, by H. Harwood, D. Fountain, & G. Livermore (NIH Publication No. 98-4327). Washington, DC: U.S. Government Printing Office.
- ⁵ Miller, T. R., & Lestina, D. C. (1998). Highway crash costs in the United States by driver age, blood alcohol level, victim age, and restraint use. *Accident Analysis and Prevention*, 30, 137–150; Levy, D. T., & Miller, T. R. (1995). A cost-benefit analysis of enforcement efforts to reduce serving intoxicated patrons. *Journal of Studies on Alcohol*, 56, 240–247.
- ⁶ The cost of traffic crashes attributed to underage drinking is conservative in that the percentage attributed to alcohol probably understates the role of alcohol in youth traffic crashes. The estimate of risk is based on all drivers, although young drivers, who have relatively little experience with alcohol and with driving are more likely to be the cause of a crash when alcohol is involved. Sources: Zador, P.L. (1991). Alcohol-related relative risk of fatal driver injuries in relation to driver age and sex. *Journal of Studies on Alcohol*, 52, 302–310.; National Institute on Alcohol Abuse and Alcoholism. (1993). *Trends in alcohol-related fatal traffic crashes, United States, 1979–92*, by T. S. Zobeck, F. S. Stinson, B. F. Grant, & D. Bertolucci (Surveillance Report No. 26). Rockville, MD: Author.
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- ⁹ Bushman, B. J., & Cooper, H. M. (1990). Effects of alcohol on human aggression: An integrative research review. *Psychological Bulletin*, 107, 341–354.; Miczek, K. A., DeBold, J. F., Haney, M., Tidey, J., Vivian, J., & Weerts, E. M. (1994). Alcohol, drugs of abuse, aggression, and violence. In A. J. Reiss, Jr., & J. A. Roth (Eds.), *Understanding and preventing violence: Vol. 3 Social influences* (pp. 377–570). Washington, DC: National Academy Press.
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- ¹² Hingson, R., & Howland, J. (1987). Alcohol as a risk factor for injury or death resulting from accidental falls: A review of the

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¹⁴ Alcohol plays a role in a variety of accidental injuries and deaths other than burns and drownings. Reliable estimates of alcohol attribution for other accidents (e.g., accidental falls) are not available.

¹⁵ Andreasson, S., Allebeck, P., & Romelsjo, A. (1988). Alcohol and mortality among young men: Longitudinal study of Swedish conscripts. *British Medical Journal*, 296, 1021–1025.; Commonwealth Department of Health and Human Services. (1995). *The quantification of drug caused morbidity and mortality in Australia 1995*. Canberra: Commonwealth of Australia.

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¹⁶ Commonwealth Department of Health and Human Services. (1995). *The quantification of drug caused morbidity and mortality in Australia 1995*. Canberra: Commonwealth of Australia.

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