ALASKA LEGISLATURE COMMITTEE FILES, 2005-2006 8672

11765 SENATE HEALTH,EDUCATION & SOCIAL SERVICES

- Office of Justice Programs Drug Court Discretionary Grant:
  - FY 2003:[12]
    - $299,879 to Alaska Cou System Administration, Anchorage
  - FY 2002: no Anchorage grantees[13]
- Office of Community Oriented Policing Services (COPS) Methamphetamine Grant:
  - FY 2003: no Anchorage grantees[14]
  - FY 2002: no Anchorage grantees[15]
- FY 2002 Office of Justice Programs and Community Oriented Policing Services grant amounts received in Anchorage:[16]
  - Communities: 2 awards valued at $469,059
  - Counter-Terrorism: 0 awards
  - Juvenile Justice:
    - discretionary: 2 awards valued at $345,418
    - formula: 0 awards
  - Law Enforcement:
    - discretionary: 11 awards valued at $7,837,015
    - formula: 2 awards valued at $667,879
  - Substance Abuse:
    - discretionary: 4 awards valued at $4,606,640
    - formula: 2 awards valued at $2,500,612
  - Victims: 0 awards
- There were no Anchorage recipients of the FY 2001 Housing and Urban Development Drug Elimination Grant.[17]

Crime and Drug-Related Crime

- Preliminary data indicate that there were 7 murders known to police in Anchorage from January to June 2003.[18]

Number of Index Offenses Known to Police, Anchorage, January-June 2003

Offense	# of Offenses
Murder	7
Forcible rape	133
Robbery	157
Aggravated assault	587
Burglary	681
Larceny-theft	4,849
Motor vehicle theft	653

- During 2002, there were 19 homicides known to the Anchorage Police Department. This is up from 11 homicides known to police in 2001.[19]

Number of Index Offenses Known to Police, Anchorage, 1998-2002

Offense	1998	1999	2000	2001	2002
Homicide	22	21	14	11	19
Rape	184	161	195	210	254
Robbery	373	398	346	384	382
Aggravated assault	1,056	1,106	973	1,144	1,067
Burglary	1,617	1,543	1,533	1,606	1,521
Theft	8,834	8,471	8,799	8,648	9,255
Motor vehicle theft	1,281	1,251	1,010	1,212	1,173
Total index offenses	1 ,367	12,951	12,870	13,215	13,671

- There were 21 total arrests (includes adult and juvenile arrests) for murder in Anchorage during 2002.[20]

Number of Arrests, Index Offenses, Anchorage, 1998-2002

Offense	1998	1999	2000	2001	2002
Murder	13	14	13	12	21
Rape	24	25	19	22	32
Robbery	117	116	72	109	110
Aggravated assault	327	326	332	382	374
Burglary	182	147	157	172	182
Theft	2,235	2,001	2,405	2,013	2,425
Motor vehicle theft	215	225	156	166	229

- During 2002, there were 509 total arrests (includes adult and juvenile arrests) for drug possession/use in Anchorage.[21]

Number of Substance-Related Arrests, Anchorage, 1998-2002

Offense	1998	1999	2000	2001	2002
Drug sale/manufacturing	254	143	108	74	87
Drug possession/use	733	543	499	412	509
Driving under influence	1,768	1,797	1,700	1,695	1,851
Liquor laws	139	252	181	193	240

- According to the Anchorage Police Department, 24% of the municipality's homicides during 2002 involved drugs.[22]

Alcohol and Drug Involvement in Select Offenses, Anchorage, 2002

	Alcohol		Drugs		Both	
Offense	#	%	#	%	#	%
Homicide	5	24%	5	24%	3	14%
Sexual assault	171	50	16	5	33	10
Robbery	84	22	35	9	14	4
All assault	1,712	47	98	3	92	3

- During 2002, there were 52 persons arrested/charged by the Drug Enforcement Administration (DEA) in Anchorage.[25]
- Data from 2002 indicate that 48.7% of adult male arrestees and 27.7% of adult female arrestees in Anchorage tested positive for marijuana at arrest.[24]

Adult Arrestee Positive Drug Results, Anchorage, 2002

Drug Type	Male	Female
Cocaine	20.4%	48.2%
Opiates	3.4	6.0
Marijuana	48.7	27.7
Methamphetamine	1.5	0.0
PCP	0.0	0.0
Any of above drugs	61.4	66.3
Multiple drugs	11.0	15.7

- More than half of the Anchorage adult male arrestees reported using marijuana at least once during the past year.[25]

Adult Male Arrestee Drug Use, Anchorage, 2002

Use	Crack Cocaine	Powder Cocaine	Marijuana	Heroin	Meth.
Past year	19.1%	18.8%	61.7%	2.7%	5.6%
Past 30 days	14.6	10.2	50.8	1.5	2.0

- Approximately 48% of the Anchorage adult female arrestees reported using marijuana at least once during the past year.[26]

Adult Female Arrestee Drug Use, Anchorage, 2002

Use	Crack Cocaine	Powder Cocaine	Marijuana	Heroin	Meth.
Past year	42.5%	29.9%	48.3%	5.8%	10.3%
Past 30 days	34.1	21.2	34.5	3.5	3.6

- Approximately 64% of the Anchorage adult male arrestees who committed violent offenses tested positive for drugs.[27]

Percent of Adult Male Arrestees Positive for Drugs, by Offense, Anchorage, 2002

Drug Type	Violent	Property	Drug	Domest. violence	DUI	Other
Any drug	64.2%	66.2%	60.8%	75.8%	58.0%	63.0%
Cocaine	23.1	28.0	15.1	26.6	14.7	1[illegible]
Marijuana	52.5	52.8	49.9	69.2	46.7	48.0
Opiate	2.5	3.3	3.6	0.0	3.1	3.0
Methamphet.	2.6	0.0	0.8	0.0	0.9	1.3
Multiple drugs	14.5	14.6	7.9	20.1	6.5	7.7

- Nearly 73% of the Anchorage adult female arrestees who committed violent offenses tested positive for drugs.[28]

Percent of Adult Female Arrestees Positive for Drugs, by Offense, Anchorage, 2002

Drug Type	Violent	Property	Drug	Domest. violence	DUI	Other
Any drug	72.7%	68.2%	60.9%	100.0%	52.9%	67.4%
Cocaine	27.3	54.5	43.5	0.0	35.3	47.8
Marijuana	45.5	31.8	26.1	100.0	23.5	26.1
Opiate	9.1	9.1	4.3	0.0	5.9	6.5
Methamphet.	0.0	0.0	0.0	0.0	0.0	0.0
PCP	0.0	0.0	0.0	0.0	0.0	0.0
Multiple drugs	9.1	27.3	13.0	0.0	11.8	13.0

Drugs

- Cocaine[29]

  Cocaine is readily available in major urban areas such as Anchorage.

Juveniles

- During FY 2003, 4,373 juveniles were charged in Anchorage. Of the juveniles charged, 299 of the charges were drug- or alcohol-related.[30]

Number of Juvenile Charges, Anchorage, FY 2003

Charge Type	# of Charges
Against person	728
Against property	2,352
Against public order	211
Drug and alcohol	299
Weapon	61
Miscellaneous	722
Total	4,373

- There were 2 juvenile arrests for murder in Anchorage during 2002.[31]

Number of Juvenile Arrests, Index Offenses, Anchorage, 1998-2002

Offense	1998	1999	2000	2001	2002
Murder	3	2	2	0	2
Rape	2	4	3	2	5
Robbery	37	28	21	23	33
Aggravated assault	64	57	71	74	74
Burglary	102	87	97	94	98
Theft	891	883	1,059	854	1,113
Motor vehicle theft	73	108	78	81	114

- During 2002, there were 224 juvenile arrests for drug possession/use in Anchorage.[32]

Number of Juvenile Substance-Related Offenses, Anchorage, 1998-2002

Offense	1998	1999	2000	2001	2002
Drug sale/manufacturing	25	13	11	6	19
Drug possession/use	228	183	186	164	224
Driving under influence	35	21	28	24	40
Liquor laws	8	8	8	21	22

Enforcement

- As of October 2002, there were 463 full-time law enforcement employees in Anchorage (313 officers and 150 civilians).[33]
- Alaska Interdiction Task Force (AITF)[34]
  Previously known as the Anchorage Detail, the AITF is responsible for investigations that involve drug trafficking at various ports of entry. The AITF is based in the Anchorage International Airport because the majority of passengers and packages arrive at facilities located at or near the airport.

Trafficking and Seizures

- During 2001, the Anchorage Police Department seized 307 marijuana plants. This number increased to 2,453 during 2002.[35]

Amount of Drugs Seized, Anchorage Police Department, 2001-2002

Drug Type	2001	2002
Cocaine/crack (pounds)	28	30
Marijuana plants	307	2,453
Marijuana (processed- pounds)	65.1	72
Methamphetamine (pounds)	1.26	0.64
Ecstasy-MDMA (tablets)	414	346
Heroin (pounds)	0.09	0.13
LSD (dosage units)	128.73	14.95
Opium (pounds)	0.05	1.8

- During 2002, the DEA seized 190.89 pounds of cocaine in Anchorage.[36]

Amount of Drugs Seized, DEA, Anchorage, 2002

Drug Type	2002
Cocaine/crack (pounds)	190.89
Marijuana plants	11
Marijuana (processed- pounds)	1.62
Methamphetamine (pounds)	7.46
Ecstasy-MDMA (tablets)	2.02
Heroin (pounds)	0.36

- Lead by the Federal Bureau of Investigation and DEA, Operation Arctic Heat resulted in a total of 52 defendants charged and 41 persons arrested. This investigation also resulted in the seizure of $1.6 million from drug traffickers as well as 365 pounds of cocaine.[37]

Courts

- Drug Courts[38]
  As of November 2003, there were 2 drug courts in Anchorage that had been in operation for more than 2 years, 1 that was recently implemented, and 2 that were being planned.

Corrections

- On December 31, 2002, there were 364 inmates in the Anchorage Jail. Approximately 7.5% of the inmates were charged with alcohol-related offenses and 5.5% were charged with drug-related offenses.[39]
- There were 431 offenders in Community Residential Centers in Anchorage on December 31, 2002.[40]
- The probation/parole population in Anchorage on December 31, 2002 was 2,369.[41]

Consequences of Use

- During 2002, there were 20 fatal accidents in Anchorage in which alcohol or drugs were involved.[42]

Alcohol/Drug Involvement in Fatal Accidents, Anchorage, 1998-2002

	1998	1999	2000	2001	2002
# of fatal accidents	17	19	28	27	34
# with drug/alcohol involved	11	10	12	16	20
% with drug/alcohol involved	65%	53%	43%	59%	59%

Treatment

- Approximately 80% of the Anchorage adult male arrestees who reported being heroin users in 2002 said that they have received inpatient treatment in their lives.[43]

Percent of Adult Male Arrestees Reporting Past Drug Treatment, Anchorage, 2002

	Inpatient		Outpatient	
Drug Type	Ever	Past Year	Ever	Past Year
Crack cocaine	66.2%	6.1%	54.4%	24.4%
Powder cocaine	54.1	10.8	41.6	25.1
Marijuana	41.5	6.4	34.7	23.2
Methamphetamine	31.9	5.2	38.3	39.9
Heroin	79.9	0.0	56.8	0.0

- Eighty percent of the Anchorage adult female arrestees who reported being heroin users in 2002 said that they have received inpatient treatment in their lives.[44]

Percent of Adult Female Arrestees Reporting Past Drug Treatment, Anchorage, 2002

	Inpatient		Outpatient	
Drug Type	Ever	Past Year	Ever	Past Year
Crack cocaine	64.9%	26.5%	40.5%	33.3%
Powder cocaine	61.5	17.8	42.3	16.7
Marijuana	35.7	37.4	40.5	19.4
Methamphetamine	77.8	10.4	44.4	25.0
Heroin	80.0	9.5	20.0	0.0

Sources

[1] U.S. Census Bureau, 2002 American Community Survey: Anchorage: http://www.census.gov/acs/www/Products/Profiles/Single/2002/ACS/Tabular/160/16000US0203000l.htm
[2] U.S. Census Bureau Web site: http://www.census.gov
[3] U.S. Census Bureau, 2002 American Community Survey: Anchorage: http://www.census.gov/acs/www/Products/Profiles/Single/2002/ACS/Tabular/160/16000US02030001.htm
[4] Anchorage Mayor's Web site: http://www.muni.org/mayor/mayor.cfm
[5] Anchorage Assembly Members' Web site: http://www.muni.org/assembly2/assemblymembers.cfm
[6] Anchorage Police Department Web site, Chief's of Police: http://www.muni.org/apd1/chiefs.cfm
[7] Reclaiming Futures Locations: http://www.reclaimingfutures.org/sites.asp
[8] Anchorage Department of Health and Human Services. SAFE City Program: http://www.muni.org/healthssd/safe.cfm
[9] Drug Free Communities Support Program Web site, Alaska section: http://ojjdp.ncjrs.org/dfcs/states/ak.html
[10] Office of Weed and Seed Data Center, Alaska section: http://www.weedandseeddatacenter.org/map.aspx?state=AK
[11] Substance Abuse and Mental Health Services Administration, FY 2003 Discretionary Funds, Alaska: http://www.samhsa.gov/funding/content/states/ak.htm
[12] Bureau of Justice Assistance, FY 2003 Office of Justice Programs Drug Court Grants: http://www.ojp.usdoj.gov/BJA/grant/03DrugCtAwd.pdf
[13] Bureau of Justice Assistance, FY 2002 Office of Justice Programs Drug Court Grants: http://www.ojp.usdoj.gov/BJA/grant/DrugCourts/02DCgrants.htm
[14] Office of Community Oriented Policing Services, *FY 2003 COPS Methamphetamine Grant*: http://www.cops.usdoj.gov/mime/open.pdf?Item=951
[15] Office of Community Oriented Policing Services, *COPS Methamphetamine Grant Announcement*, November 14, 2002: http://www.cops.usdoj.gov/pdf/GrantAnnounce/meth_grantees.pdf
[16] Office of Justice Programs and Community Oriented Policing Services FY 2002 Awards to Alaska, Listed by Locality Broken Down by Function: http://www.ojp.usdoj.gov/fy2002grants/map/aksubl.htm
[17] Department of Housing and Urban Development, *Federally Assisted Low-Income Housing Drug Elimination Grants, Detailed Congressional Report, FY 2001*: http://www.hud.gov/content/releases/drugelimination.pdf
[18] Federal Bureau of Investigation, *Uniform Crime Reports, January-June 2003*, December 15, 2003: http://www.fbi.gov/ucr/2003/03semimaps.pdf
[19] Anchorage Police Department, *2002 Annual Statistical Report*: http://www.muni.org/apd1/stats.cfm
[20] Ibid.
[21] Ibid.
[22] Ibid.
[23] Alaska State Troopers, *2002 Annual Drug Report*: http://www.dps.state.ak.us/ast/cib/graphics/2002AnnualReport.pdf
[24] National Institute of Justice, *ADAM Annualized Site Reports 2002*, October 2003: http://www.adam-nij.net/files/2002_Annualized_Site_Reports.pdf
[25] Ibid.
[26] Ibid.

[27] Ibid.
[28] Ibid.
[29] Alaska State Troopers, *2002 Annual Drug Report*: http://www.dps.state.ak.us/ast/cib/graphics/2002AnnualReport.pdf
[30] Alaska Department of Health and Social Services Web site, Charge Type by Region and Office for Fiscal Year 2003: http://health.hss.state.ak.us/dji/information/stats_fy2003/charge_type.htm
[31] Anchorage Police Department, *2002 Annual Statistical Report*: http://www.muni.org/apd1/stats.cfm
[32] Ibid.
[33] Federal Bureau of Investigation, *Crime in the United States, 2002*, October 2003: http://www.fbi.gov/ucr/02cius.htm
[34] Alaska State Troopers, *2002 Annual Drug Report*: http://www.dps.state.ak.us/ast/cib/graphics/2002AnnualReport.pdf
[35] Ibid.
[36] Ibid.
[37] Ibid.
[38] Office of Justice Programs Drug Court Clearinghouse and Technical Assistance Project, *Summary of Drug Court Activity by State and County*, November 7, 2003: http://www.american.edu/spa/justice/publications/drgchart2k.pdf
[39] Alaska Department of Corrections, *2002 Offender Profile*: http://www.correct.state.ak.us/corrections/admin/docs/profile2002.pdf
[40] Ibid.
[41] Ibid.
[42] Anchorage Police Department, *2002 Annual Statistical Report*: http://www.muni.org/apd1/stats.cfm
[43] National Institute of Justice, *ADAM Annualized Site Report 2002*, October 2003: http://www.adam-nij.net/files/2002_Annualized_Site_Reports.pdf
[44] Ibid.

This State Profile was prepared by the ONDCP Drug Policy Information Clearinghouse. The Clearinghouse is funded by the White House Office of National Drug Control Policy and is a component of the National Criminal Justice Reference Service. For further information concerning the contents of this profile or other drug policy issues contact:

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From: Sarah Williams <sarah_williams@correct.state.ak.us>
To: <Randy_Ruaro@law.state.ak.us>
Date: 3/9/2005 3:58:30 PM
Subject: Marijauna use in the offender population

Randy, DOC has some information regarding the prevalence of marijauna as a substance of abuse or depenoence in the offender population. I did not receive a fax from you yet, but I thought I would go ahead and give you what I have. The treatment staff are standing by at the Wildwood Correctional Center (WCC) Men's Residential Substance Abuse Treatment (RSAT) Program to speak with you if you wish. They can arrange to have offenders in treatment speak with you also. I told the treatment staff to tell you about their observations and knowledge of offenders who are battling addiction and marijauna is one of their drugs of choice, if you should call. I told them not to even worry about any political context. The Coordinator of the program is Mark Gornik who can be reached at (907) 260-7242.

The Arrestee Drug Abuse Monitoring (ADAM) study conducted by the National Institute of Justice (NIJ) for several years in Anchorage found that in Anchorage, from 2000--2002, 38.2% of the inmates who voluntarily participated in the study, tested positive for marijauna in urinalysis testing. The participants in the study had been booked into the correctional center and tested within 48 hours of arrest.

The precursor to the ADAM study was the Substance Abuse Need for Treatment among Arrestees (SANTA) study conducted in 1997 at the Sixth Avenue Correctional Center (SACC) and Cook Inlet Pretrial Correctional Center (CIPT) in Anchorage, as well as the Fairbanks Correctional Center (FCC) in Fairbanks, and the Yukon-Kuskokwim Correctional Center (YKCC) in Bethel. As in the ADAM study, NIJ sponsored this national study and had strict protocols in place for studying arrestees shortly after booking. Among its many findings we learned that at SACC 39% of the men volunteers tested through urinalysis, were positive for marijauna as were 21.2% of the women. At CIPT 38.8% of the men tested positive for marijauna. At FCC 40% of the men and 21.1% of the women tested positive for marijauna. At YKCC we learned that 61.8% of the men and 7.7% of the women tested positive for marijauna. It is interesting to note that out of the ten drugs that the offenders were tested for, at YKCC marijauna was the only drug for which offenders had positive test results.

Extra Information:

The ADAM study also showed that 92.3 % of the inmate population has a problem (abuse or dependence) with either alcohol or drugs, or most often both. Most of the offenders in DOC are polydrug abusers. Marijauna use is more prevalent among men than women, and its use is greater in rural areas than it is in urban areas. It is frequently used with alcohol. Just for the record, cocaine is the primary drug of choice for women especially in urban areas, and it is frequently used with alcohol.

Randy, you had asked me for the cost of the substance abuse treatment programs within DOC. The Hiland Mountain Correctional Center (HMCC) Women's Residential Substance Abuse Treatment (RSAT) Program costs $391,719.00 a year. The Wildwood Correctional Center (WCC) Men's Residential Substance Abuse Treatment (RSAT) Program costs $319,000.00 a year. Both RSAT Programs are funded primarily through federal dollars with some state funding

attached. We have another residential treatment program for men at the Florence Correctional Center (FCC) in Arizona. Its cost is under the umbrella of the contract DOC has with Corrections Corporation of America (CCA), so its funding is not broken out. The program is modeled closely after the WCC RSAT Program, so its cost would be similar. DOC also has a small (one counselor) substance abuse assessment/education/referral program, funded by the Alaska Mental Health Trust Authority (AMHTA), at the Spring Creek Correctional Center (SCCC) for the inmates in the Youthful Offender Program (YOP) and the Men's Sub-Acute Care Mental Health Unit.

Please feel free to call me if I can provide you with further information. Thank you. Sarah Williams, DOC Program Coordinator (269-7417).

CC: Portia Ck Parker <portia_parker@correct.state.ak.us>

National Survey on Drug Use and Health

The NSDUH Report

January 9, 2004

Marijuana Use and Delinquent Behaviors among Youths

Research suggests that among youths, frequency of marijuana use is associated with problem behaviors,[1,2] including delinquent behaviors. The National Survey on Drug Use and Health (NSDUH), formerly the National Household Survey on Drug Abuse (NHSDA), asks youths aged 12 to 17 to report how often they engaged in the following delinquent behaviors during the past year: (a) serious fighting at school or work, (b) taking part in a fight where a group of friends fought against another group, (c) attacking someone with the intent to seriously hurt them, (d) stealing or trying to steal anything worth more than $50, (e) selling illegal drugs, or (f) carrying a handgun.[3] Youths also are asked whether they used marijuana or hashish during the past 12 months. Past year marijuana users are asked how many days they used marijuana or hashish during the past year.

In Brief

- More than 5 million youths (21 percent) engaged in serious fighting at school or work, and almost 4 million (16 percent) took part in a group-against-group fight in the past year
- In 2002, 4 million youths (16 percent of those aged 12 to 17) used marijuana in the past year
- The percentages of youths engaging in delinquent behaviors in the past year rose with increasing frequency of marijuana use

Frequency of Marijuana Use among Youths

In 2002, almost 4 million youths aged 12 to 17 (16 percent) reported using marijuana during the past year. Nearly 1.5 million (38 percent of past year users) used marijuana on 1 to 11 days in the past year, 21 percent used on 12-49 days, 9 percent used on 50-99 days, 23 percent used on 100-299 days, and 9 percent (358,000 youths) used marijuana 300 or more days in the past year.

The NSDUH Report (formerly **The NHSDA Report**) is published periodically by the Office of Applied Studies, Substance Abuse and Mental Health Services Administration (**SAMHSA**).

Figure 1. Percentages of Youths Aged 12 to 17 Participating in Delinquent Behaviors One or More Times in the Past Year: 2002

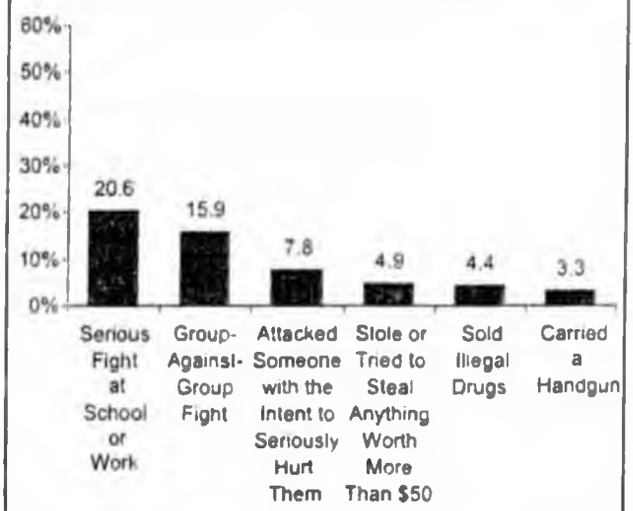
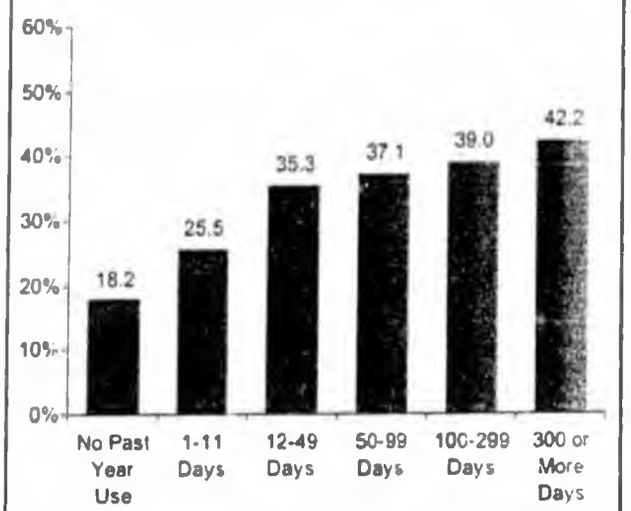


Figure 2. Percentages of Youths Aged 12 to 17 Who Took Part in Serious Fighting at School or Work in the Past Year, by Frequency of Past Year Marijuana Use: 2002



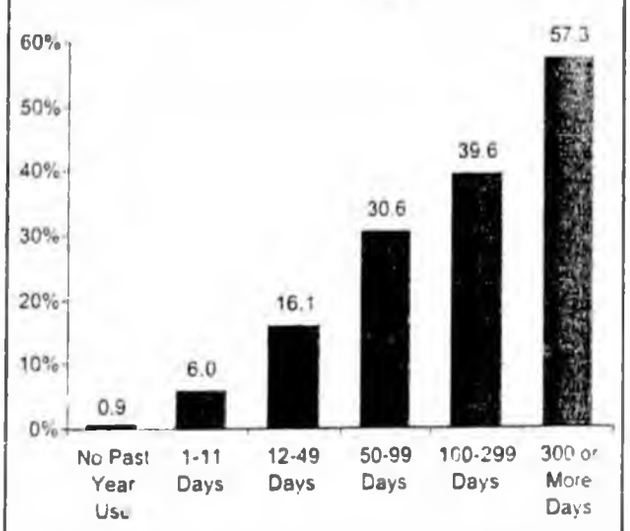
Prevalence of Delinquent Behaviors among Youths

In 2002, approximately 21 percent of youths (5 million) engaged in serious fighting at school or work, almost 16 percent (4 million) took part in a group-against-group fight, and almost 8 percent (2 million) attacked someone with the intent to seriously hurt them during the past year (Figure 1). Nearly 5 percent of youths (1.2 million) stole or tried to steal something worth more than $50, more than 4 percent (1.1 million) sold illegal drugs, and more than 3 percent (800,000) carried a handgun during the past year.

Delinquent Behaviors and Frequency of Marijuana Use

In 2002, the percentages of youths engaging in delinquent behaviors was higher among past year marijuana users than among those who had not used marijuana. For all six of the delinquent behaviors examined, the percent of youths engaging in the behavior rose with increasing frequency of past year marijuana use (Figures 2-7).

Figure 3. Percentages of Youths Aged 12 to 17 Who Sold Illegal Drugs in the Past Year, by Frequency of Past Year Marijuana Use: 2002



3 Youths were asked how many times in the past year they had participated in each delinquent behavior. The response options are: (a) 0 times, (b) 1 or 2 times, (c) 3 to 5 times, (d) 6 to 9 times, and (e) 10 or more times in the past year. For this report, youths were counted as engaging in the behavior if they reported participating one or more times.

End Notes

1 Donovan, J. E. (1996). Problem-behavior theory and the explanation of adolescent marijuana use. *Journal of Drug Issues, 26*, 379-404.

2 Greenblatt, J. C. (1998). Adolescent self-reported behaviors and their association with marijuana use. In Substance Abuse and Mental Health Services Administration, Office of Applied Studies, *Analysis of Substance Abuse and Treatment Need Issues* (DHHS Publication No. SMA 98-3227, Analytic Series A-7). Rockville, MD.

Figure Note

Source: SAMSHA 2002 NSDUH.

Figure 4. Percentages of Youths Aged 12 to 17 Who Stole or Tried to Steal Anything Worth More Than $50 in the Past Year, by Frequency of Past Year Marijuana Use: 2002

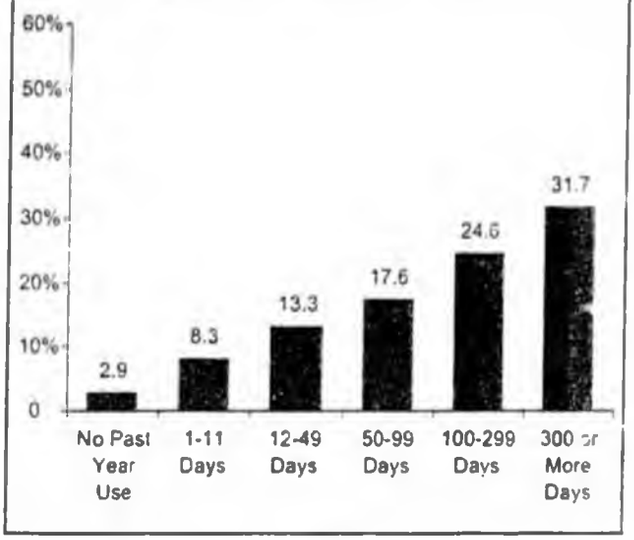


Figure 5. Percentages of Youths Aged 12 to 17 Who Attacked Someone With the Intent to Seriously Hurt Them in the Past Year, by Frequency of Past Year Marijuana Use: 2002

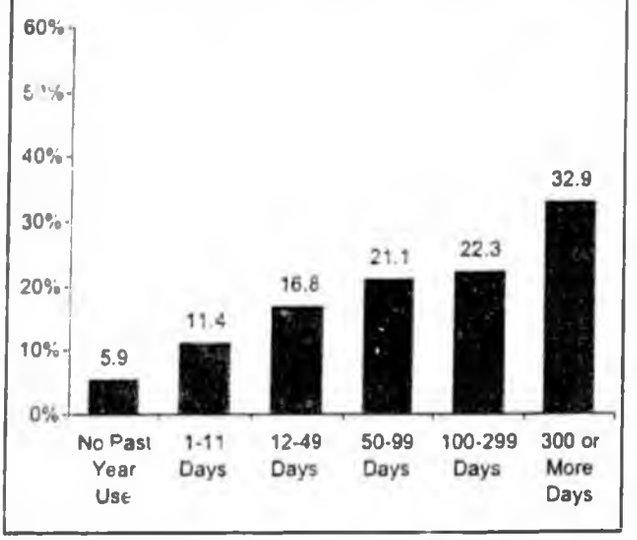


Figure 6. Percentages of Youths Aged 12 to 17 Who Took Part in a Group-Against-Group Fight in the Past Year, by Frequency of Past Year Marijuana Use: 2002

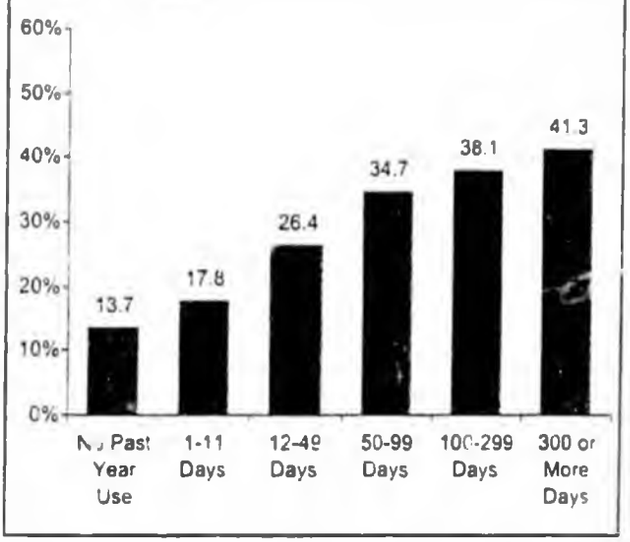
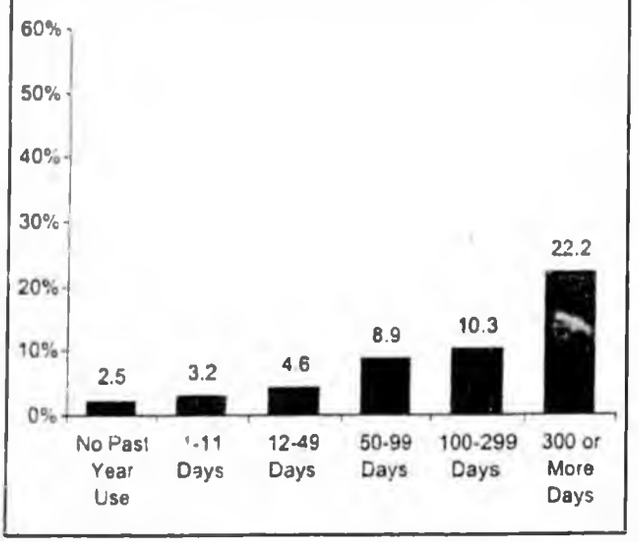


Figure 7. Percentages of Youths Aged 12 to 17 Who Carried a Handgun in the Past Year, by Frequency of Past Year Marijuana Use: 2002



The National Survey on Drug Use and Health (NSDUH) is an annual survey sponsored by the Substance Abuse and Mental Health Services Administration (SAMHSA). Prior to 2002, this survey was called the National Household Survey on Drug Abuse (NHSDA). The 2002 data are based on information obtained from 68,216 persons aged 12 or older, including 23,645 youths aged 12 to 17. The survey collects data by administering questionnaires to a representative sample of the population through face-to-face interviews at their place of residence.

The NSDUH Report is prepared by the Office of Applied Studies (OAS), SAMHSA, and by RTI in Research Triangle Park, North Carolina.

Information and data for this issue are based on the following publication and statistics:

Office of Applied Studies. (2003). *Results from the 2002 National Survey on Drug Use and Health: National findings* (DHHS Publication No. SMA 03-3836, NHSDA Series H-22). Rockville, MD: Substance Abuse and Mental Health Services Administration.

Also available on-line: http://www.DrugAbuseStatistics.samhsa.gov

Because of improvements and modifications to the 2002 NSDUH, estimates from the 2002 survey should not be compared with estimates from the 2001 or earlier versions of the survey to examine changes over time.

U.S. DEPARTMENT OF HEALTH & HUMAN SERVICES
Substance Abuse & Mental Health Services Administration
Office of Applied Studies
www.samhsa.gov

Chapter 3

Juvenile offenders

Public perceptions of juvenile offending have been influenced by attention focused on high-profile incidents. Do these incidents accurately reflect the majority of crimes by juveniles? How many children are involved in law-violating behavior? What proportion of all crime is committed by juveniles? What are the trends? Are there gender differences in the law-violating careers of juvenile offenders? How many murders are committed by juveniles annually, and whom do they murder? What proportion of students are involved in crime at school? Are youth carrying weapons to school? Are students fearful of crime at school? At what time of day are violent crimes by juveniles most likely to occur? What is known about juveniles and gangs? What is the prevalence and incidence of drug and alcohol use? How much does youth crime cost society?

Many offenders are not arrested; and many arrested are not referred to juvenile courts and, thus, are not captured in official law enforcement or court data. This chapter presents what is known about the prevalence and incidence of juvenile offending. It relies on data developed by the Bureau of Justice Statistics' National Crime Victimization Survey; the Federal Bureau of Investigation's National Incident-Based Reporting System and its Uniform Crime Reports; the National Institute on Drug Abuse's Monitoring the Future Study, and the Office of Juvenile Justice and Delinquency Prevention's (OJJDP's) National Juvenile Court Data Archive. Also included are summaries of the first wave of self-report data from the Bureau of Labor Statistics' National Longitudinal Survey of Youth and data from the Centers for Disease Control and Prevention's Youth Risk Behavior Surveillance Survey. Information on gangs is drawn from the National Youth Gang Survey, supported by OJJDP, and other published and unpublished gang studies. In addition, the chapter includes information from the Bureau of Alcohol, Tobacco and Firearms' Youth Crime Gun Interdiction Initiative.

Self-reports and official records are the primary sources of information on juvenile offending

Self-report studies ask victims or offenders to report on their experiences and behaviors

There has been an ongoing debate about the relative ability of self-report studies and official statistics to describe juvenile crime and victimization.

Self-report studies can capture information on behavior that never comes to the attention of juvenile justice agencies. Compared with official studies, self-report studies find a much higher proportion of the juvenile population involved in delinquent behavior.

Self-report studies, however, have their own limitations. A youth's memory limits the information that can be captured. This, along with other problems associated with interviewing young children, is the reason that the National Crime Victimization Survey does not attempt to interview children below age 12. Some victims and offenders are also unwilling to disclose all law violations. Finally, it is often difficult for self-report studies to collect data from large enough samples to develop a sufficient understanding of relatively rare events, such as serious violent offending.

Official statistics describe the cases handled by the justice system

Official records underrepresent juvenile delinquent behavior. Many crimes by juveniles are never reported to authorities. Many juveniles who commit offenses are never arrested. Or, if they are arrested, they are not arrested for all of their delinquencies. As a result, official records may systematically underestimate the scope of juvenile crime. In addition, to the extent there is bias in the types of crimes or offenders that enter the justice system, official records distort the attributes of juvenile crime.

Official statistics are open to multiple interpretations

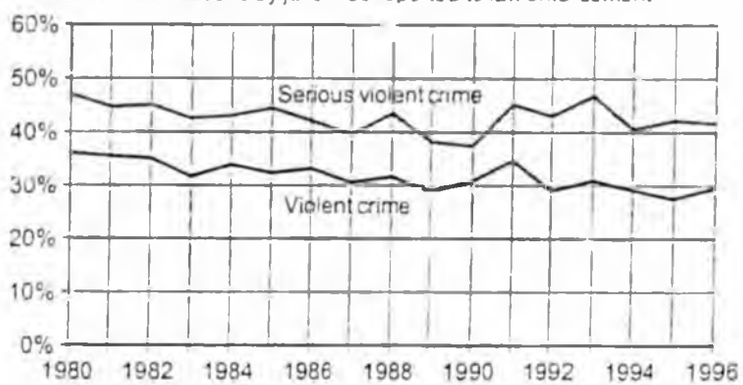
Juvenile arrest rates for drug abuse violations in recent years are substantially above those of a decade ago. One interpretation of these official statistics could be that juveniles have been breaking the drug laws more often in recent years. National self-report studies (e.g., Monitoring the Future), however, find that illicit drug use is substantially below the levels of the mid-1980's. If drug use is actually down, the higher arrest rates for drug crimes may represent a change in society's tolerance for such behavior and a greater willingness to bring these youth into the justice system for treatment or punishment.

Although official records may be inadequate measures of the level of juvenile offending, they do monitor justice system activity. Analysis of variation in official statistics across time and jurisdictions provides an understanding of justice system caseloads.

Carefully used, self-report and official statistics provide insight into crime and victimization

As Delbert Elliot has argued, to abandon either self-report or official statistics in favor of the other is "rather shortsighted; to systematically ignore the findings of either is dangerous, particularly when the two measures provide apparently contradictory findings." He argued that a full understanding of the etiology and development of delinquent behavior is enhanced by using and integrating both self-report and official record research.

The proportion of violent crimes committed by juveniles that victims reported to law enforcement has changed little since 1980



Note: Serious violent crime includes incidents involving rape and other sexual assaults, robbery, and aggravated assault. Violent crime includes simple assault in addition to the serious violent crime offenses. Data are collected through personal interviews with persons age 12 and older; thus, murder is not included for obvious reasons. Data collected prior to 1992 were adjusted to be consistent with newer data collection procedures.

Source: Authors' analyses of data for the years 1980–1996 from the Bureau of Justice Statistics' *National Crime Victimization Survey* [machine-readable data files]

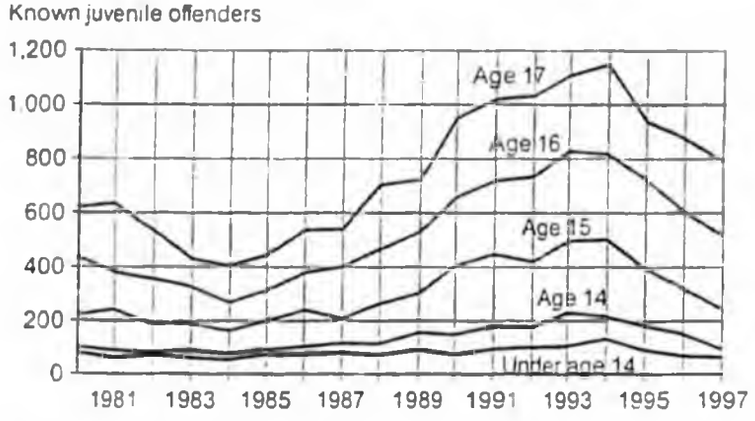
In 1997, juvenile homicides were the lowest in the decade but still 21% above the average of the 1980's

It is difficult to assess the exact number of murders committed by juveniles

Based on the Federal Bureau of Investigation's (FBI's) Supplemental Homicide Report (SHR) data, 18,200 persons were murdered in the U.S. in 1997—the lowest number in more than a generation. Of these murders, about 1,400 were determined by law enforcement to involve a juvenile offender; however, the actual number is greater than this. In 1997, the FBI had no information on the offender(s) for about 6,900 reported murders (38% of the total). These may have been homicides for which no one was arrested or the offender was otherwise not identified, or these may have been cases for which the local agency did not report complete information to the FBI. Regardless, the number of murders committed by juveniles in 1997 was undoubtedly greater than 1,400, but just how much greater is difficult to determine. If it were assumed that the murders without offender information were similar to those with offender information, then about 2,300 murders (or 12% of all murders) in 1997 had at least one offender who was under the age of 18 at the time of the crime.

The 1,400 murders known to involve a juvenile offender in 1997 involved about 1,700 juveniles and 900 adults. Of all murders involving a juvenile, 31% also involved an adult, and 13% involved another juvenile. In all, 44% of all murders involving a juvenile involved more than one person.

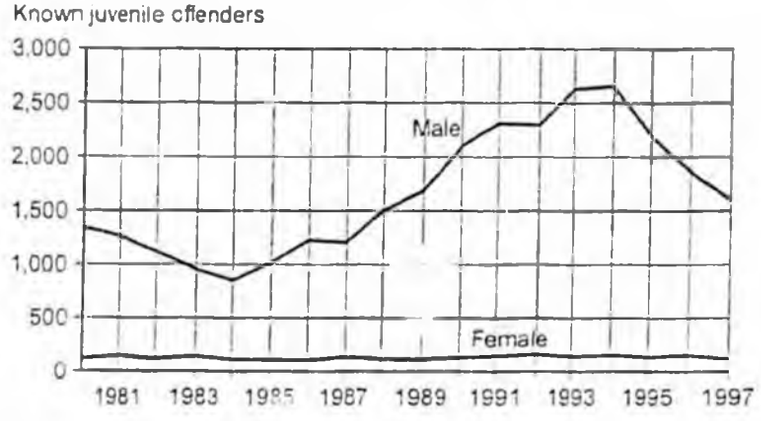
The number of murder offenders in each age group between 14 and 17 increased substantially and proportionately from 1984 through 1993



- The declines in the number of offenders were also large and roughly proportionate between 1994 and 1997 in all age groups: under age 14 (51%), age 14 (57%), age 15 (52%), age 16 (37%), and age 17 (31%).

Source: Authors' analyses of the FBI's *Supplementary Homicide Reports* for the years 1980–1997 [machine-readable data files].

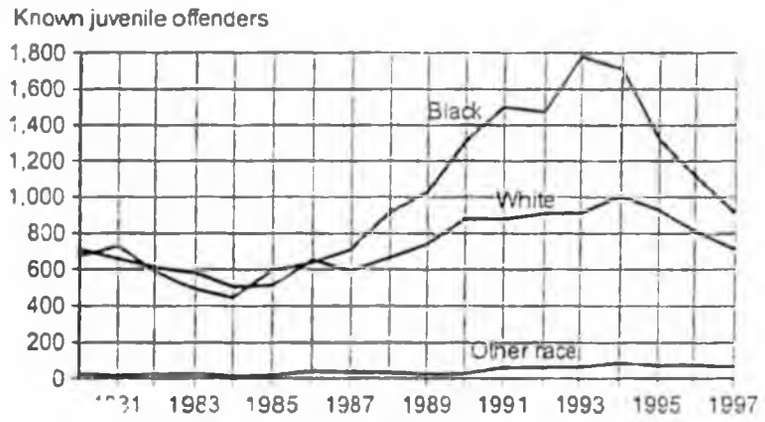
Between 1980 and 1997, the number of juvenile female offenders implicated in murders remained essentially constant



- Between 1980 and 1997, about 130 juvenile females were implicated in homicides in the U.S. each year.
- Males were responsible for all of the fluctuations in juvenile homicides between 1980 and 1997.

Source: Authors' analyses of the FBI's *Supplementary Homicide Reports* for the years 1980–1997 [machine-readable data files].

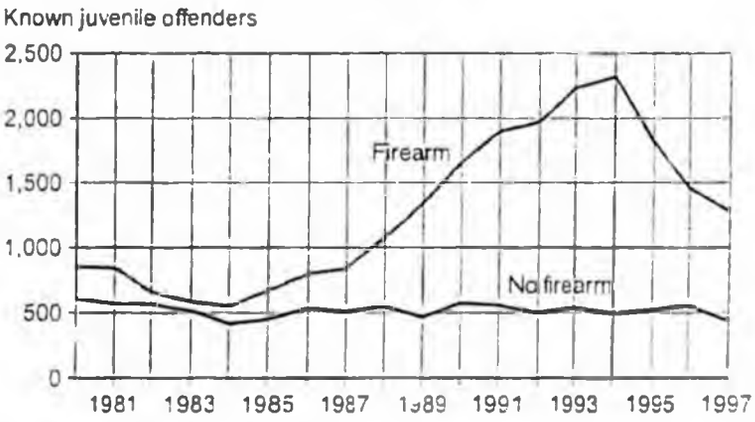
Between 1980 and 1986, there were roughly equal numbers of white and black juvenile homicide offenders; but after 1986, blacks have outnumbered whites



- While youth of all races contributed to the growth in homicides by juveniles, black youth were responsible for the majority of the increase between 1986 and 1994—and the majority of the decline thereafter.

Source: Authors' analyses of the FBI's *Supplementary Homicide Reports* for the years 1980–1997 [machine-readable data files]

All of the increase in homicides by juveniles between the mid-1980's and mid-1990's was firearm related



- Between 1980 and 1987, firearms were used in just over half (54%) of all homicides involving a juvenile offender. Then firearm-related homicides began to increase, so that, by 1994, most homicides by juvenile offenders (82%) involved the use of a firearm.
- The sharp decline in homicides by juveniles between 1994 and 1997 was attributable entirely to a decline in homicides by firearm.

Source: Authors' analyses of the FBI's *Supplementary Homicide Reports* for the years 1980–1997 [machine-readable data files]

Whom do juveniles kill?

Between 1980 and 1997, most victims in homicides involving juveniles were male (83%). Slightly more victims were white (50%) than black (47%). In 27% of homicides by juveniles, the victim was also a juvenile. Victims in 70% of homicides by juveniles were killed with a firearm. Of all victims killed by juveniles, 14% were family members, 55% were acquaintances, and 31% were strangers.

Who are the juvenile murderers?

Between 1980 and 1997, the large majority (93%) of known juvenile homicide offenders were male. More than half (56%) were black. Of known juvenile homicide offenders, 42% were age 17, 29% were age 16, and 17% were age 15; 88% of juvenile homicide offenders were age 15 or older.

Murders by the very young are rare

Annually between 1980 and 1997, fewer than 10 juveniles age 10 or younger were identified as participants in murders—a figure that has remained essentially constant over the time period. The majority of these young homicide offenders were male (88%), and more than half (54%) were black. In these cases, the victim was equally likely to be either a family member or an acquaintance (43%). A firearm was involved in 50% of the murders committed by these young offenders.

Boys and girls tend to kill different types of victims

Between 1980 and 1997, 54% of male juvenile homicide offenders killed an acquaintance, 37% killed a

stranger, and 9% killed a family member. In comparison, the victims of females were more likely to be family members (39%) and far less likely to be strangers (15%).

Between 1980 and 1997, about 1% of male offenders killed persons under age 6, while 18% of the female offenders killed young children. Because there were so many more male offenders than female offenders, however, roughly equal numbers of male and female juvenile offenders were involved in the murder of young children. Annually between 1980 and 1997, about 25 male and 25 female juvenile offenders were tied to the death of a child under age 6.

Males were far more likely than females to kill with a firearm. Between 1980 and 1997, 73% of male juvenile homicide offenders used a firearm, while 14% used a knife. In contrast, 41% of female juvenile homicide offenders used a firearm and 32% used a knife. While 27% of females used other means to kill (e.g., hands or feet, strangulation, drowning, or fire), only 13% of males killed by these means.

Black juveniles were more likely to commit murders with firearms than were youth of other races

In the U.S. in 1997, about 1 of every 16,000 youth between the ages of 10 and 17 was identified as participating in a homicide. This is a rate of 56 known offenders for every 1 million youth in the U.S. population ages 10–17. This rate was greater for black youth than youth of other races: black (194), Asian/Pacific Islanders (44), American Indians (34), and whites (30).

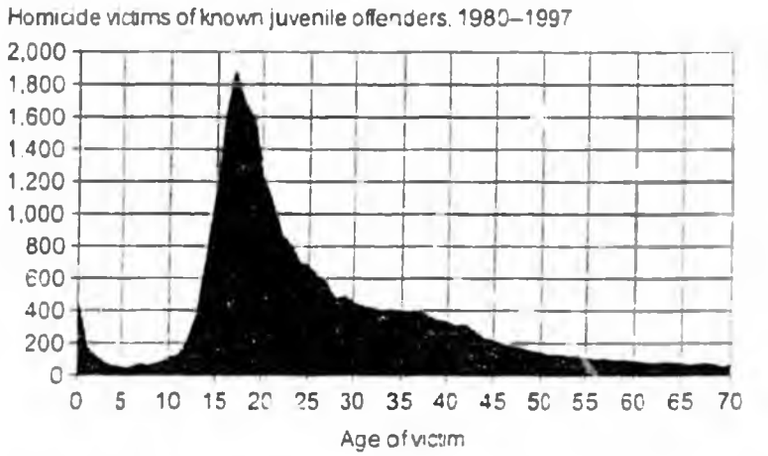
Between 1980 and 1997, 72% of black juvenile homicide offenders

In 1997, juvenile offenders were known to be involved in about 1,400 murders in the U.S.

- From the peak year of 1994, the number of murders known to involve juvenile offenders dropped 39%.
- Between 1980 and 1997, 28% of all murders involving a juvenile offender also involved an adult offender.

Source: Authors' analyses of the FBI's *Supplementary Homicide Reports* for the years 1980–1997 [machine-readable data files].

Between 1980 and 1997, about half (51%) the victims of juvenile homicide offenders were ages 13 through 24



- Of all persons murdered by juveniles, 6% were under age 13, 21% were ages 13–17, 30% were ages 18–24, and 10% were age 50 or older.

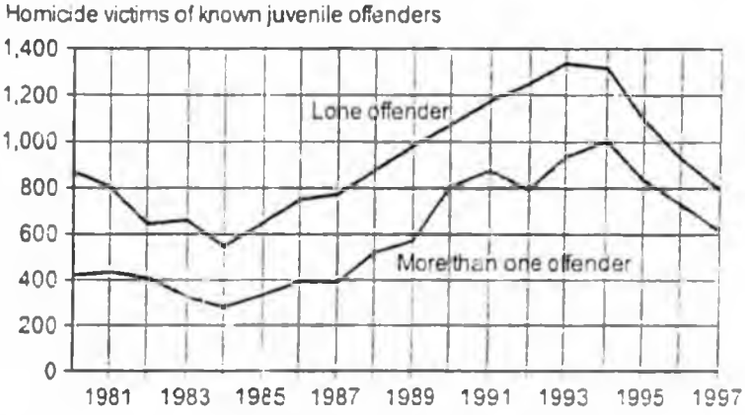
Source: Authors' analyses of the FBI's *Supplementary Homicide Reports* for the years 1980–1997 [machine-readable data files].

During the period from 1987 to 1994, while the total annual number of murders by juveniles doubled, murders of family members held constant

- Murder victims of juvenile offenders are more likely to be acquaintances than strangers. In 1997, 56% of juvenile murder victims were acquaintances and 34% were strangers.
- In 1997, the number of acquaintances and the number of strangers murdered by juveniles were the lowest since 1989.

Source: Authors' analyses of the FBI's *Supplementary Homicide Reports* for the years 1980–1997 [machine-readable data files].

Between 1980 and 1997, there were two or more offenders in 39% of all murders involving a juvenile



- The proportion of multiple-offender murders involving a juvenile offender increased from the 1980's (35%) to the 1990's (42%).

Source: Authors' analyses of the FBI's *Supplementary Homicide Reports* for the years 1980–1997 [machine-readable data files].

used a firearm in their crimes. This proportion was higher than that for Asian/Pacific Islander (67%), white (59%), or American Indian (48%) youth.

Youth were most likely to kill persons of their own race. Between 1980 and 1997, 81% of juvenile offenders were involved in murders of persons of their own race. Same race killing was most common for white youth (90%) and less common for blacks (76%), Asian/Pacific Islanders (58%), and American Indians (48%).

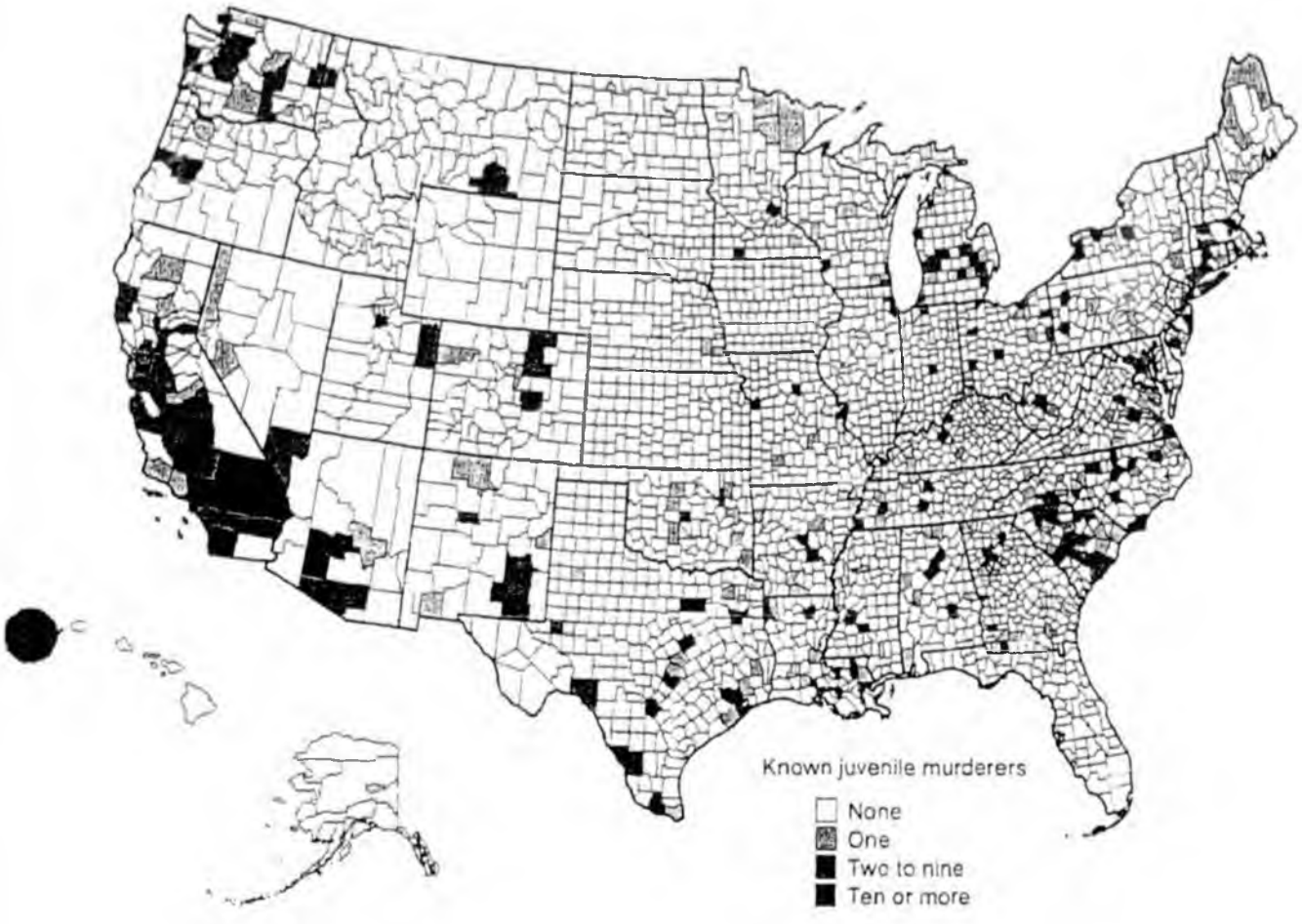
A greater proportion of white youth and American Indian youth killed family members than did youth of other races: American Indian (17%), white (16%), black (7%), and Asian/Pacific Islander (7%).

Older juveniles are more likely than younger juveniles to commit murders with other juveniles and with adults

Between 1980 and 1997, half of all juvenile homicide offenders acted alone, while half committed their acts with other juveniles or adults. Older offenders were more likely than younger offenders to commit their acts with adults.

	Percent of juvenile homicide offenders		
Age of offender	Acted alone	With juveniles	With adults
Total	50%	21%	29%
<10	86	11	3
10	72	13	15
11	75	16	9
12	68	20	12
13	58	25	17
14	50	28	22
15	49	25	27
16	49	22	29
17	50	16	34

More than 1 in 4 identified juvenile murderers in 1997 were in 8 of the Nation's more than 3,000 counties



Source: Authors' analyses of the FBI's *Supplementary Homicide Reports* for 1997 [machine-readable data files]

In 1997, the FBI's Supplemental Homicide Reporting (SHR) Program collected detailed information on 87% of all murder victims known to law enforcement. The map above presents an analysis of these data. Note that no data were reported for the States of Florida, Kansas, and New Hampshire. Many individual counties in other States also underreported. In addition, an offender was identified in just 62% of the reported homicides. Consequently, many juvenile homicide offenders are not represented on the map.

Based on SHR data, 88% of the more than 3,000 counties in the U.S. reported no juvenile murderers in 1997. Another 6% of the counties had just one identified juvenile homicide offender in 1997. In fact, more than 1 in 4 juvenile homicide offenders (26%) in 1997 were in eight counties. The major cities in these eight counties (beginning with the city in the county with the greatest number of identified juvenile homicide offenders) are Chicago, Los Angeles, Houston, New York, Baltimore, Detroit, Philadelphia, and Dallas. As these eight counties contain just 12% of the U.S. population, it is clear that homicide by juveniles is concentrated in a small portion of the U.S. geographic area.

A new self-report survey documents the deviant and delinquent behaviors of U.S. youth ages 12–16

A new survey will follow a cohort of youth as they make the transition from school to work

The first wave of the 1997 National Longitudinal Survey of Youth (NLSY97) interviewed a nationally representative sample of 9,000 youth who were between the ages of 12 and 16 at year-end 1996. The survey asked youth to report whether they had engaged in a variety of deviant and delinquent behaviors. Plans are to interview members of this cohort every 2 years to track changes in delinquent and criminal activity over the life course.

Youth who had ever used or sold drugs were more likely to engage in other problem behavior

One of the strengths of the survey is its ability to assess which delinquent behaviors cluster together. Members of the NLSY97 cohort were asked a variety of questions regarding drugs, guns, and gangs, including whether and how recently they had engaged in these activities. Analysis of these items demonstrates the connection between drug use or sale and other problem behaviors, such as carrying handguns, belonging to a gang, and consuming alcohol.

The proportion of youth engaging in deviant and delinquent behaviors varied significantly by age, sex, and race/ethnicity

Behavior	Total	Ages 12–13	Ages 14–15	Age 16	Male	Female	White	Nonwhite	Rural	Urban
Had sex										
Ever	29%	—	23%	43%	30%	28%	26%	37%	29%	30%
Last 12 months	21	—	16	32	22	21	19	27	21	22
Became pregnant										
Ever	6	—	4	10	—	6	5	9	5	7
Smoked cigarettes										
Ever	42	27	48	58	42	42	45	34	43	41
Last 30 days	20	10	23	33	20	20	22	14	21	19
Drank alcohol										
Ever	39	26	52	68	46	44	46	26	45	45
Last 30 days	21	8	25	37	21	21	23	16	20	21
Before or during school or work in the last 30 days	5	2	6	9	6	4	5	5	5	5
Used marijuana										
Ever	21	8	25	38	22	20	22	19	19	22
Last 30 days		4	11	17	10	9	10	8	8	10
Before or during school or work in the last 30 days	4	1	5	7	4	3	4	3	4	4
Ran away from home										
Ever	11	6	12	17	10	11	10	11	10	12
Carried a handgun										
Ever	10	8	11	12	16	3	10	9	11	9
Last 12 months	6	4	6	7	9	2	6	5	6	5
Last 30 days	3	2	3	3	5	1	3	3	3	3
To school in last 30 days	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Belonged to a gang										
Ever	5	3	6	6	6	3	4	7	5	5
Last 12 months	2	2	2	3	3	1	2	3	2	2
Purposely destroyed property										
Ever	28	25	31	30	37	20	30	25	29	28
Last 12 months	16	14	17	15	20	11	16	14	15	16
Stole something worth over $50*										
Ever	8	4	10	11	10	5	7	9	7	9
Last 12 months	5	3	6	7	7	3	5	6	4	6

- Youth who had ever used marijuana were more likely to have sold marijuana (24% vs. <1%), carried a handgun (21% vs. 7%), or been in a gang (14% vs. 2%) at some point than youth who never used marijuana.
- Youth who had ever sold marijuana were more likely to have sold hard drugs (i.e., cocaine, LSD, or heroin) (40% vs. 1%), carried a handgun (35% vs. 8%), or been in a gang (24% vs. 4%) than youth who never sold marijuana.
- Active marijuana users (i.e., youth who used marijuana during the month prior to the survey) were more likely to have consumed alcohol (78% vs. 11%) or carried a handgun (12% vs. 2%) during that period than youth who did not use marijuana.
- Youth who had carried a handgun in the last 12 months were also more likely to have been in a gang than youth who did not carry a handgun during this period (15% vs. 1%).

Behavior	Total	Ages 12–13	Ages 14–15	Age 16	Male	Female	White	Nonwhite	Rural	Urban
Stole a vehicle for use or sale										
Ever	1%	< 0.5%	2%	2%	2%	1%	1%	1%	1%	1%
Sold any drugs										
Ever	7	2	9	12	9	5	8	5	7	7
Last 12 months	5	2	7	9	7	4	6	4	5	6
Sold hard drugs (e.g., cocaine, LSD, or heroin)										
Ever	3	1	3	6	3	2	3	3	3	3
Sold marijuana										
Ever	5	2	7	10	7	4	6	4	5	6
Committed assault										
Ever	18	15	19	22	23	12	16	21	17	18
Last 12 months	12	10	13	13	16	8	11	14	12	12
Was arrested										
Ever	8	4	10	12	10	5	7	9	6	9
Number of times										
Once	5	2	6	7	6	3	4	5	4	5
2 or more	3	1	4	5	4	2	3	4	2	4

- Of all youth, 3% had carried a handgun in the month prior to the interview, and fewer than 1 in 100 had carried a handgun to school during that time.
- With a few exceptions, urban and rural youth reported participation in problem behaviors in equal proportions; however, urban youth were significantly more likely than rural youth to have run away from home (12% vs. 10%), ever used marijuana (22% vs. 19%), or ever been arrested (9% vs. 6%).
- Of all youth, 9% used marijuana in the last 30 days, and less than 4% used marijuana before or during school or work hours during this time. Similarly, 21% of all youth drank alcohol in the last 30 days, and 5% drank alcohol before or during school or work hours during this time.
- The proportion of youth who had ever used marijuana increased dramatically with age, from 8% of youth ages 12 and 13 to 25% of youth ages 14 and 15. The proportion of youth ages 14 and 15 who had ever used alcohol (52%) was double that of youth ages 12 and 13 (26%).

Note: Only youth 14 and older were asked about their sexual activity and pregnancy. Only females were asked about pregnancy.

* Includes stealing a vehicle for use or sale.

Source: Authors' analysis of the Bureau of Labor Statistics' *The National Longitudinal Survey of Youth 1997* [machine-readable data file].

Recent participation (i.e., within the last 12 months or 30 days prior to the interview) in delinquent and deviant acts varied by race and ethnicity for males and females

	Males ages 12–16			Females ages 12–16		
Behavior	White	Black	Hispanic	White	Black	Hispanic
Smoked cigarettes						
Last 30 days	22%	14%	19%	23%	9%	15%
Drank alcohol						
Last 30 days	23	13	22	23	13	20
Before or during school or work in last 30 days	6	4	6	4	3	6
Used marijuana						
Last 30 days	10	9	9	9	5	9
Before or during school or work in last 30 days	4	4	5	3	2	3
Carried a handgun						
Last 12 months	10	8	8	2	2	2
Last 30 days	5	5	4	1	1	1
To school in last 30 days	< 1	1	1	0	0	< 1
Had sex						
Last 12 months*	17	38	26	20	26	19
Belonged to a gang						
Last 12 months	2	6	5	1	2	2
Destroyed property						
Last 12 months	21	18	17	11	10	11
Stole something worth over $50						
Last 12 months	7	7	8	3	4	4
Committed assault						
Last 12 months	15	21	13	7	12	10

- Black males and females were significantly less likely to drink or smoke cigarettes in the month preceding the interview than their white and Hispanic peers.
- Among youth age 14 and older, a greater proportion of black males and females had sex in the 12 months before the survey than either white or Hispanic males and females.
- In the year preceding the interview, white males were less likely to have been in a gang than black and Hispanic males but more likely to have carried a gun.
- The proportion of youth who used marijuana in the last 30 days was the same for white, black, and Hispanic males, while black females were less likely to have used marijuana in the last month than their white and Hispanic peers.

*Only youth 14 and older were asked about their sexual activity.

Note: The white and black racial categories do not include youth of Hispanic ethnicity. Hispanic youth can be of any race.

Source: Authors' analysis of the Bureau of Labor Statistics' *The National Longitudinal Survey of Youth 1997* [machine-readable data file]

Less than one-tenth (8%) of youth ages 12–16 said they had ever been arrested

Of the 8% of youth who had ever been arrested, a substantial proportion (40%, or 3% of all youth) reported two or more arrests.

The proportion of youth ever arrested varied significantly by race and ethnicity for males but not for females

White males (9%) were less likely to have ever been arrested than black males (13%) or Hispanic males (12%). Further, a greater proportion of black males (7%) and Hispanic males (6%) than white males (4%) were arrested more than once.

Equal proportions of white (5%), black (6%), and Hispanic (7%) females had ever been arrested. In addition, white (2%), black (2%), and Hispanic (3%) females were equally likely to have been arrested more than once.

One-fifth (21%) of 16-year-olds who had been arrested were first arrested by the of age 12

One of the strengths of the NLSY is its ability to assess the age at which deviant and delinquent behaviors begin. Specifically, these data provide estimates of the proportion of youth who ever engaged in various deviant and delinquent behaviors at ages 12 and 16. Assuming that members of the cohort share common life experiences and that these experiences contribute to participation in specific acts of deviance and delinquency, then one can speculate about what proportion of 16-year-

olds who exhibited this behavior did so by the age of 12.

For example, nearly one-fourth (24%) of 12-year-olds and 30% of 16-year-olds had ever purposely destroyed property. Based on these data, it is estimated that more than three-fourths (79%) of 16-year-olds who had ever destroyed property did so for the first time by age 12.

Similar analyses show that some behaviors appear for the first time early in a youth's life, while others first appear later.

Behavior	Proportion of 16-year-olds engaging in behavior who did so by age 12
Purposely destroyed property	79%
Committed assault	63
Carried a handgun	60
Belonged to a gang	52
Smoked cigarettes	39
Ran away from home	34
Stole something worth over $50	34
Drank alcohol	31
Was arrested	21
Used marijuana	15
Sold hard drugs (cocaine, LSD, or heroin)	11
Sold any drugs	10

More than half of all 16-year-olds who had ever committed assault, carried a handgun, or belonged to a gang had done so for the first time by age 12. In contrast, less than one-fifth of all 16-year-olds who had ever used marijuana, sold any drugs, or sold hard drugs (i.e., cocaine, LSD, or heroin) had done so for the first time by age 12.

Employed and unemployed youth were equally likely to participate in most delinquent behaviors

	15-year-olds		16-year-olds	
Behavior	Unemployed	Employed	Unemployed	Employed
Smoked cigarettes				
Last 30 days	24%	30%	32%	34%
Drank alcohol				
Last 30 days	28	34	35	40
Before or during school or work in last 30 days	7	7	9	9
Used marijuana				
Last 30 days	13	15	18	16
Before or during school or work in last 30 days	5	6	7	6
Carried a handgun				
Last 12 months	5	8	7	6
Last 30 days	3	4	4	3
Had sex				
Last 12 months	21	19	32	32
Belonged to a gang				
Last 12 months	2	2	4	2
Destroyed property				
Last 12 months	16	16	15	15
Stole something worth over $50				
Last 12 months	7	9	8*	5
Committed assault				
Last 12 months	12	13	14	12

- Regardless of age, employed youth were significantly more likely to have smoked cigarettes and consumed alcohol during the last month than unemployed youth.
- Among 15-year-olds, employed youth were significantly more likely to have carried a gun in the last 12 months than unemployed youth.

Source: Authors' analysis of the Bureau of Labor Statistics' *The National Longitudinal Survey of Youth 1997* [machine-readable data file]

Serious violence by juveniles dropped 33% between 1993 and 1997—violence by adults was down 25%

Victims' survey captures information on violent crime

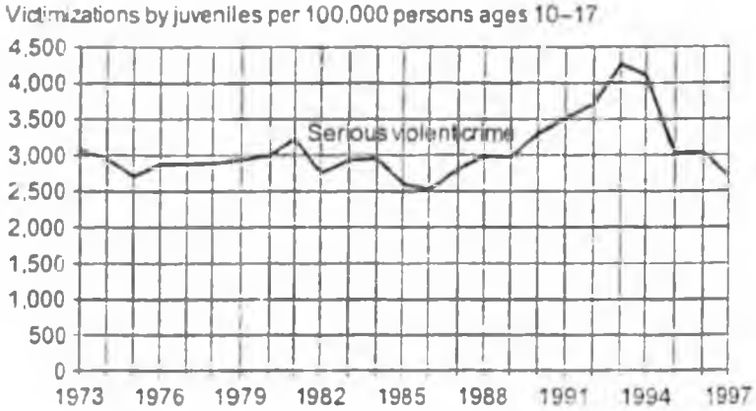
The Bureau of Justice Statistics' National Crime Victimization Survey (NCVS) asks a nationally representative sample of persons ages 12 and older about violent crimes in which they were the victim. Since 1973, the NCVS has been a national barometer of crime trends. In 1997, NCVS reported that just over 3 million serious violent crimes (rape/sexual assault, robbery, and aggravated assault) occurred in the U.S. while the FBI's Uniform Crime Reporting (UCR) Program estimated that 1.6 million such crimes were reported to law enforcement. Therefore, the NCVS provides a more complete picture of violent crime trends than the UCR Program, even though it excludes murder and violence against children younger than age 12.

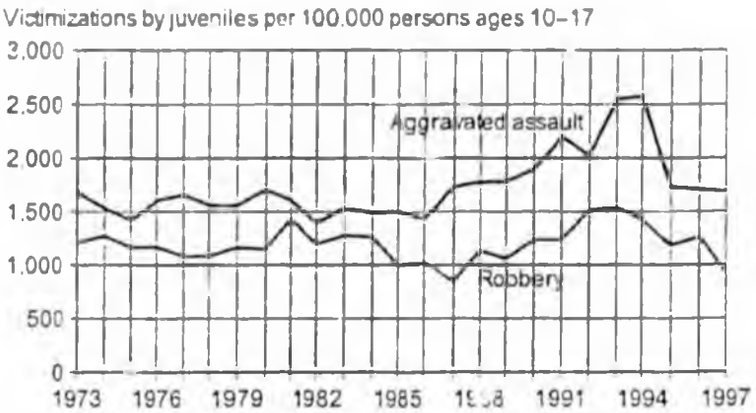
The drop in serious violence was led by reductions in victimizations by juveniles

According to the NCVS, in 1997 juveniles under age 18 were involved in 27% of all serious violent victimizations, including 14% of sexual assaults, 30% of robberies, and 27% of aggravated assaults.

Serious violent victimizations in the U.S. peaked in 1993 at 4.2 million, the highest level since the NCVS began in 1973. Between 1993 and 1997, the number of these victimizations dropped by 27%—to 3 million, the lowest level since the NCVS began. Between 1993 and 1997, the number of serious violent victimizations with at least one juvenile offender dropped 33%, from 1,230,000 to 830,000. Between 1993 and 1997, the number of serious violent victimizations in which all offenders were

The rate at which juveniles committed serious violent crimes changed little between 1973 and 1989, peaked in 1993, then declined to the lowest level since 1986





- The rate at which juveniles committed aggravated assaults declined 33% between 1994 and 1995 and remained relatively stable thereafter
- The rate of robberies by juveniles rose in 1981 and 1993, but by 1997, had dropped below the rates seen in the 1970's.

Note: Serious violent crime includes incidents involving rape and other sexual assaults, robbery, and aggravated assault. Data are collected through personal interviews with persons ages 12 and older; thus, murder is not included for obvious reasons. Data collected prior to 1992 were adjusted to be consistent with newer data collection procedures.

Source: Authors' analyses of the Bureau of Justice Statistics' *1973–1997 National Crime Victimization Survey data* [Web site data files].

On average, juveniles were involved in one-quarter of serious violent victimizations annually over the last 25 years

- Between 1973 and 1997, the juvenile proportion of robbery victimizations ranged from a low of 22% to a high of 37%.
- The juvenile proportion of aggravated assault victimizations peaked at 31% in 1994 before declining to 27% in 1997.

Note: Serious violent crime includes incidents involving rape and other sexual assaults, robbery, and aggravated assault. Data are collected through personal interviews with persons ages 12 and older; thus, murder is not included for obvious reasons. Data collected prior to 1992 were adjusted to be consistent with newer data collection procedures.

Source: Authors' analyses of the Bureau of Justice Statistics' *1973–1997 National Crime Victimization Survey data* [Web site data files]

adults dropped 25%, from 2,940,000 to 2,190,000.

Juvenile crime dropped more than adult crime between 1993 and 1997 in each of the three individual offense categories in NCVS's serious violence group: robberies (37% vs. 22%), aggravated assault (30% vs. 25%), and violent sexual assaults (45% vs. 37%).

Juveniles were twice as likely as adults to commit serious violent crimes in groups

In 1997, multiple offenders were involved in 1 in 2 violent victimizations by youth under age 18. In contrast, just 1 in 5 violent crimes by adults involved multiple offenders.

Type of victimization	Percent of serious violence involving multiple offenders	
	Juvenile	Adult
Serious violence	52%	21%
Rape	23	4
Robbery	60	29
Aggravated assault	49	19

Fewer than half of serious violent crimes by juveniles are reported to law enforcement

Many crimes are never reported to police and never become part of official crime statistics. The NCVS found that in 1997, 42% of the serious violent crimes committed by juveniles were ever reported to law enforcement. In 1997, law enforcement agencies learned about 51% of sexual assaults by juveniles, 40% of robberies by juveniles, and 42% of aggravated assaults by juveniles. These percentages have not changed appreciably in the last 20 years.

Juvenile violence peaks in the afterschool hours on school days and in the evenings on nonschool days

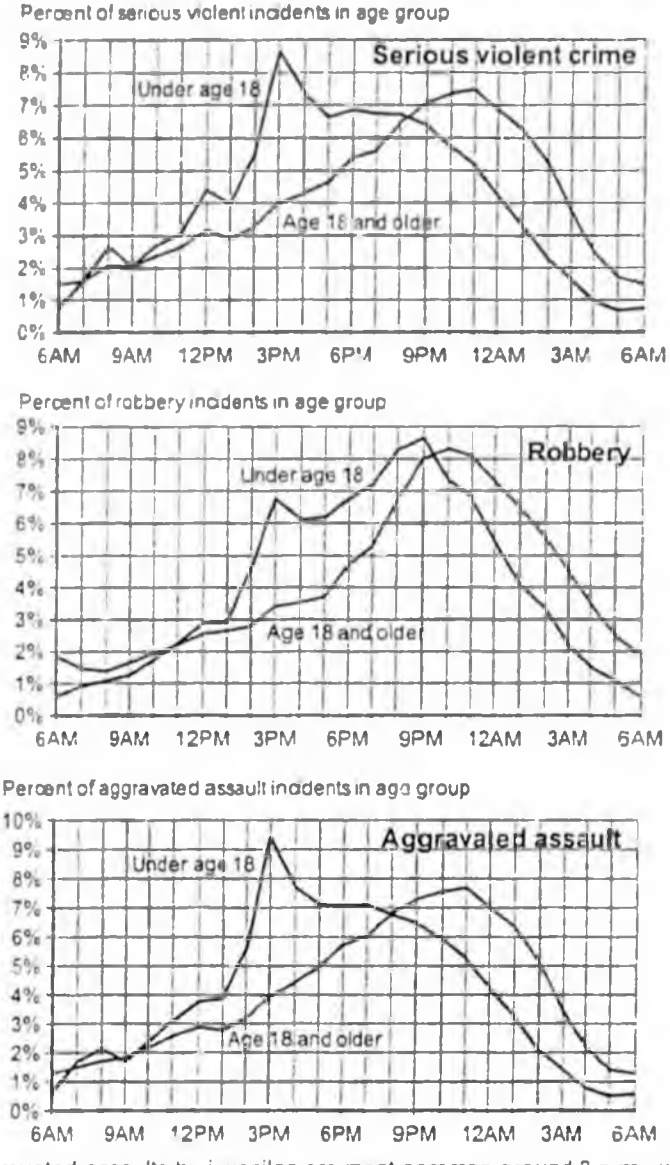
Juveniles commit crimes at different times than adults do

The FBI's National Incident-Based Reporting System (NIBRS) collects information on each crime reported to law enforcement agencies, including the date and time that the crime was committed. Analyses of these data document that the most likely time for committing a violent crime is different for juveniles and adults.

A new analysis of NIBRS data using the FBI's master files from 1991 through 1996 confirms earlier findings. In general, the number of violent crimes committed by adults increases hourly from 6 a.m. through the afternoon and evening hours, peaks at 11 p.m., and then drops sharply to a low point at 6 a.m. In stark contrast, violent crimes by juveniles peak in the afternoon between 3 p.m. and 4 p.m., the hour at the end of the school day.

The importance of this afterschool period in understanding the patterns of juvenile violence is confirmed when the days of the year are divided into two groups: school days (i.e., Monday through Friday, excluding holidays, in September through May) and nonschool days (all days in June through August, all weekends, and holidays). A comparison of the crime patterns for school and nonschool days finds that the 3 p.m. peak occurs only on school days. The time pattern of juvenile violent crimes on nonschool days is similar to that of adults, with a gradual increase during the afternoon and evening hours, a peak between 8 p.m. and 10 p.m., and a decline thereafter. Therefore, on both school and nonschool days, the level of juvenile violence is relatively high during the time period when juvenile curfew laws are in effect.

While adult robberies and aggravated assaults present similar temporal patterns, the juvenile patterns differ

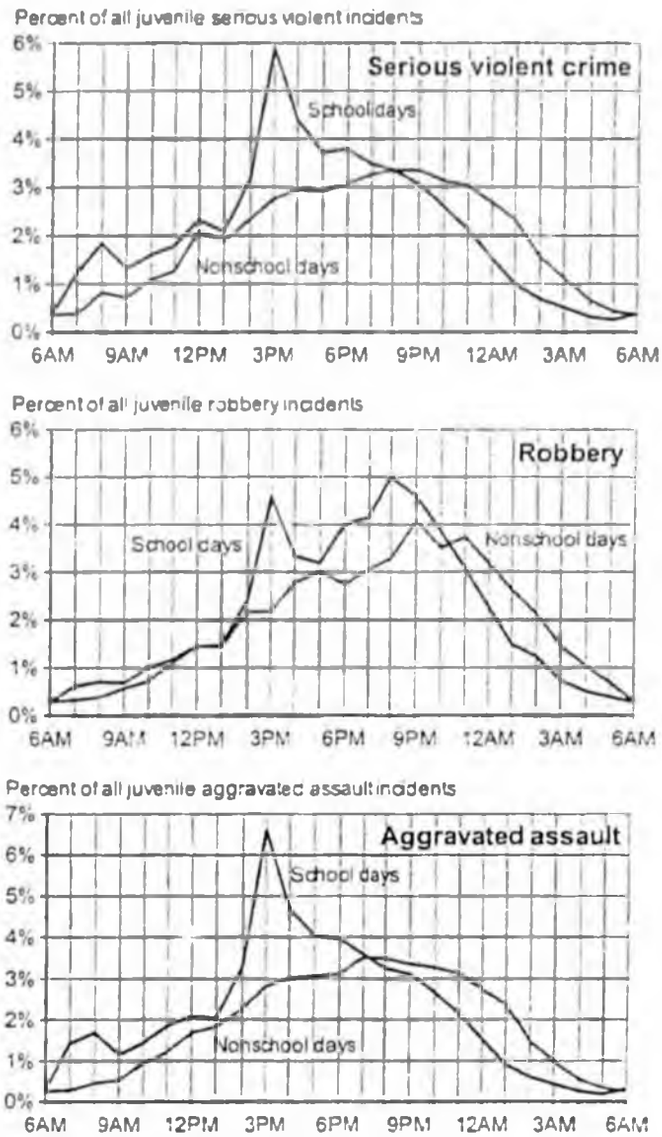


- Aggravated assaults by juveniles are most common around 3 p.m., while the number of juvenile robberies peaks around 9 p.m.
- About two-thirds of all serious violent crimes are aggravated assaults, so they control the overall temporal pattern of serious violent crime.

Note: Serious violent crimes include murder, violent sexual assault, robbery, and aggravated assault. Data are from 12 States (Alabama, Colorado, Idaho, Illinois, Iowa, Massachusetts, Michigan, North Dakota, South Carolina, Utah, Vermont, and Virginia).

Source: Authors' analyses of the FBI's *National Incident-Based Reporting System master files* for the years 1991–1996 [machine-readable data files].

Serious juvenile crimes cluster in the hours immediately after the close of school



- On school days, robberies and aggravated assaults by juveniles both peak at 3 p.m.; unlike aggravated assaults, robberies also peak at night.
- The temporal pattern of juvenile violence on nonschool days is similar to the overall pattern for adults; juvenile violence peaks at night on nonschool days.

Note: Serious violent crimes include murder, violent sex assaults, robbery, and aggravated assault. Data are from 12 States (Alabama, Colorado, Idaho, Illinois, Iowa, Massachusetts, Michigan, North Dakota, South Carolina, Utah, Vermont, and Virginia).

Source: Authors' analyses of the FBI's *National Incident-Based Reporting System master files* for the years 1991–1996 [machine-readable data files].

Afterschool programs have more crime reduction potential than juvenile curfews

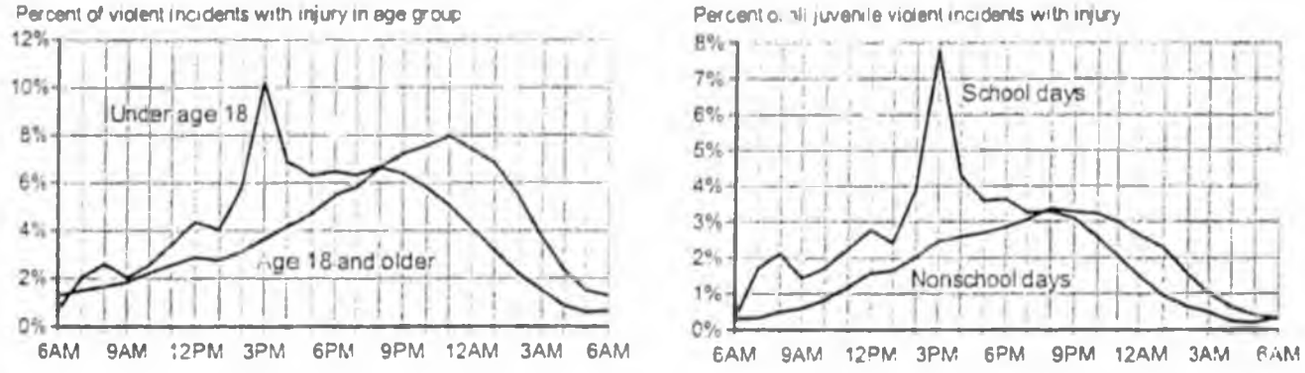
The number of school days in a year is essentially equal to the number of nonschool days in a year. Based on NIBRS data, 57% of all violent crimes by juveniles (i.e., murder, forcible rape, robbery, and aggravated and simple assault) occur on school days. In fact, 19% of all juvenile violent crimes occur in the 4 hours between 3 p.m. and 7 p.m. on school days. A similar proportion of juvenile violent crime (21%) occurs during the standard juvenile curfew hours of 10 p.m. to 6 a.m. However, the annual number of hours in the curfew period (i.e., 8 hours every day) is four times greater than the number of hours in the 3 p.m. to 7 p.m. period on school days (i.e., 4 hours on one-half of the days in the year). Therefore, the rate of juvenile violence in the afterschool period is four times the rate in the juvenile curfew period. This analysis suggests that the potential for reducing a community's juvenile violent crime rate is greater for efforts to reduce juvenile crime after school than for juvenile curfews.

Sexual assaults by juveniles peak in the hours after school

The most likely hour of a school day for a juvenile to commit a sexual assault is between 3 p.m. and 4 p.m. In fact, more than 1 in 7 sexual assaults by juveniles occur in the 4 hours between 3 p.m. and 7 p.m. on school days. Unlike other violent crimes, sexual assaults by juveniles on nonschool days are most likely to occur between noon and 1 p.m.

Juveniles injure more victims in the hours around the close of school than at any other time

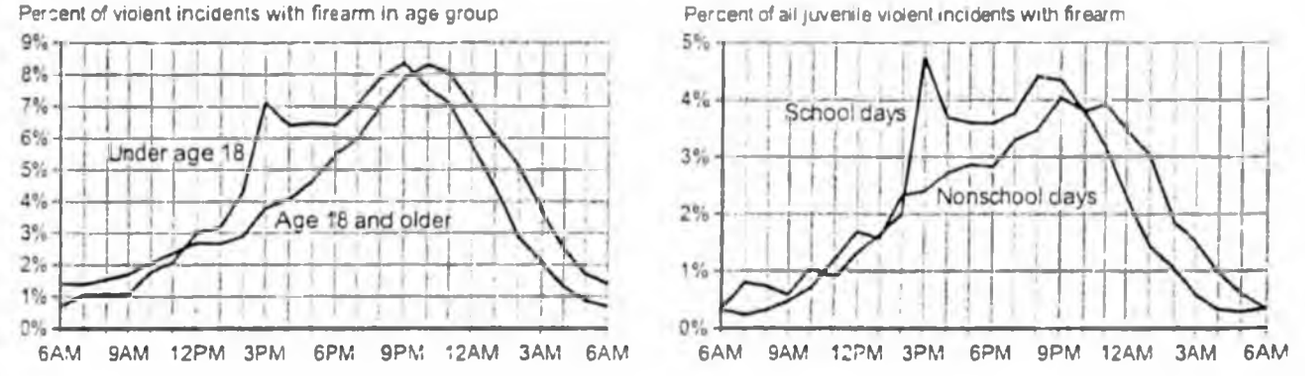
Violent crime with injury



- The number of persons injured by adult offenders increases through the afternoon and evening hours and peaks around 11 p.m.

In general, the temporal pattern of violent crimes committed by juveniles with firearms is similar to the adult pattern, except for the high proportion of juvenile firearm-involved crimes that occur immediately after school on school days

Violent crime committed with a firearm



Note: Violent crime includes murder, violent sexual assault, robbery, aggravated assault, and simple assault. Data are from 12 States (Alabama, Colorado, Idaho, Illinois, Iowa, Massachusetts, Michigan, North Dakota, South Carolina, Utah, Vermont, and Virginia)

Source: Authors' analyses of the FBI's *National Incident -Based Reporting System master files* for the years 1991–1996 [machine-readable data files]

School crime was not uncommon, but fear kept few high schoolers home during a typical month in 1997

Nearly 4 in 10 high school students were in a physical fight—4 in 100 were injured

According to the Centers for Disease Control and Prevention's 1997 Youth Risk Behavior Surveillance System, 37% of high school students said they had been in one or more physical fights during the past 12 months. Males were more likely than females to engage in fighting regardless of grade level or race/ethnicity. Males and females in grades 9 and 10 were significantly more likely to fight than those in grade 12.

Percent who were in a physical fight in the past 12 months

	Total	Male	Female
Total	37%	46%	26%
9th grade	45	56	32
10th grade	40	48	30
11th grade	34	44	23
12th grade	29	37	19
White	34	43	21
Black	43	49	38
Hispanic	41	50	30

Hispanics and non-Hispanic blacks were more likely than non-Hispanic whites to fight. This was especially true for females.

Although physical fighting was fairly common among high school students, the proportion of students injured and treated by a doctor or nurse was relatively small (4%).

Percent who were injured in a physical fight in the past 12 months

	Total	Male	Female
Total	4%	5%	2%
9th grade	5	7	3
10th grade	4	5	3
11th grade	3	4	2
12th grade	3	4	2
White	3	3	1
Black	6	7	4
Hispanic	4	6	2

Males were more likely than females to have been injured in a fight. Black and Hispanic students were more likely than white students to suffer fight injuries.

Fights at high school are fairly common—especially for minority males

Nationwide, 15% of high school students had been in a physical fight on school property one or more times in the 12 months preceding the survey. Male students were substantially more apt to fight at school than female students at all grade levels. Males and females in grades 9 and 10 were significantly more likely to fight than those in grade 12.

Percent who were in a physical fight at school in the past 12 months

	Total	Male	Female
Total	15%	20%	9%
9th grade	21	29	12
10th grade	17	22	11
11th grade	13	18	6
12th grade	10	13	5
White	13	19	6
Black	21	25	17
Hispanic	19	25	12

Hispanic and black students were more likely than white students to fight at school. This was especially true for females.

One-third of high school students had property stolen or vandalized at school

High school students were more likely to experience property crime than fights at school. One-third said they had property such as a car, clothing, or books stolen or deliberately damaged on school property one or more times during the past 12 months. A greater proportion of male than female students reported such property crimes at school. Students' reports of school property crime did not vary significantly across grade or racial/ethnic groups.

Percent who had property stolen or deliberately damaged at school in the past 30 days

	Total	Male	Female
Total	33%	36%	29%
9th grade	37	40	34
10th grade	35	40	30
11th grade	32	36	28
12th grade	28	30	25
White	33	36	29
Black	34	38	31
Hispanic	32	33	31

Fear of school-related crime kept 4 in 100 high schoolers home at least once in the past month

Nationwide, 4% of high school students missed at least 1 day of school in the past 30 days because they felt unsafe at school or when traveling to or from school.

Males and females in grade 9 were more likely than those in grade 12 to have felt too unsafe to go to school. Hispanic and black students were more likely than white students to have missed school because they felt unsafe.

Percent who felt too unsafe to go to school in the past 30 days

	Total	Male	Female
Total	4%	4%	4%
9th grade	6	5	6
10th grade	4	4	4
11th grade	4	5	3
12th grade	3	2	3
White	2	2	3
Black	7	8	6
Hispanic	7	7	8

Half of high school students who said they carried a weapon said they took that weapon to school

9% of high school students carried a weapon on school property in the past month

The 1997 Youth Risk Behavior Surveillance System found that 9% of high school students said that in the past 30 days they had carried a weapon (e.g., gun, knife, or club) on school property. This was half the proportion of students (18%) who said they had carried a weapon anywhere in the past month. Males were more likely than females to say they carried a weapon at school.

Percent who had carried a weapon on school property in the past 30 days

	Total	Male	Female
Total	9%	13%	4%
9th grade	10	15	5
10th grade	8	11	4
11th grade	9	15	3
12th grade	7	10	3
White	8	12	2
Black	9	11	8
Hispanic	10	16	4

In a year, 7% of high school students were threatened or injured with a weapon at school

The vast majority of students did not report weapon-related threats or injuries during the 12 months prior to the survey. Overall, 7% had been threatened or injured with a weapon on school property, including 4% of females and 10% of males.

Percent threatened or injured with a weapon at school in the past year

	Total	Male	Female
Total	7%	10%	4%
9th grade	10	14	6
10th grade	8	10	5
11th grade	6	9	2
12th grade	6	8	3
White	6	8	4
Black	10	14	6
Hispanic	9	13	5

Across States, the proportion of high school students carrying weapons to school in 1997 ranged from 5% to 17%

	Percent reporting they carried a weapon on school property in the past 30 days			Percent reporting they were threatened or injured with a weapon on school property in the past year		
Reporting States	Total	Male	Female	Total	Male	Female
U.S. total*	9%	13%	4%	7%	10%	4%
Alabama	11	17	5	8	10	5
Arkansas	12	18	6	8	11	6
California#	**7**	**12**	**3**	**7**	**11**	**4**
Los Angeles	6	9	3	9	13	5
Colorado	**11**	**19**	**4**	**9**	**11**	**6**
Connecticut	7	10	3	6	8	5
Delaware	**9**	**13**	**4**	**8**	**9**	**6**
Dist. of Columbia	17	19	13	13	16	9
Florida	**8**	**12**	**3**	**8**	**10**	**6**
Hawaii	6	9	3	6	8	5
Iowa	9	14	3	7	10	4
Kentucky	15	27	4	7	10	4
Louisiana	7	11	4	8	9	5
Maine	11	19	3	8	9	5
Massachusetts	8	12	4	8	10	4
Michigan	8	13	4	9	13	5
Mississippi	10	15	5	9	13	6
Missouri	10	16	3	8	11	4
Montana	12	19	5	7	9	6
Nevada	10	15	5	9	11	6
New Hampshire	**7**	**13**	**2**	**7**	**10**	**4**
New Jersey	**8**	**13**	**3**	**7**	**9**	**5**
New York	9	14	4	7	10	4
North Carolina	**8**	**13**	**3**	**8**	**10**	**6**
North Dakota	8	15	2	6	8	4
Ohio	8	13	3	7	9	5
Rhode Island	8	11	4	8	11	6
South Carolina	10	14	5	9	11	7
South Dakota	9	15	2	5	8	3
Tennessee	**11**	**19**	**4**	**7**	**8**	**6**
Utah	11	18	3	8	11	4
Vermont	12	19	5	7	10	4
West Virginia	11	19	3	8	10	6
Wisconsin	5	8	3	8	9	6
Wyoming	13	22	4	7	11	4

*U.S. total is based on a national sample.

#Data do not include students from the Los Angeles Unified School District.

Note: Bold indicates data are unweighted because the overall response rate was less than 60%. Thus, data apply only to respondents.

Source: Authors' adaptation of Kann et al.'s Youth risk behavior surveillance—United States, 1997. *Morbidity and Mortality Weekly Report*, 47(SS-3).

1 in 5 juvenile arrestees carried a gun all or most of the time

Gun use and crime among male arrestees/detainees is studied

The National Institute of Justice interviewed a sample of arrested and/or detained individuals during the first 6 months of 1995 to learn about gun acquisition and use. Seven of eleven study sites provided data on juvenile males: Denver, District of Columbia, Indianapolis, Los Angeles, Phoenix, St. Louis, and San Diego.

Although sites varied, the juvenile males studied were disproportionately black or Hispanic, and most were age 15 or older. Because 5 of the 7 sites limited the study to juveniles in detention rather than all juveniles arrested, the offense profile for juveniles studied was skewed to more serious offenses (crimes against persons ranged from 15% to 29%). Also, the proportion of juveniles who admitted to current membership in a gang ranged from 2% to 41%.

Juveniles are more likely than arrestees overall to commit a crime with a gun

The proportion of respondents who were charged with a weapons offense ranged from 1% to 12%. Among the juvenile males interviewed, however, 20% said they carried a gun all or most of the time, compared with 14% of arrestees overall.

Juvenile arrestees were nearly twice as likely as arrestees overall to say they had stolen a gun (25% vs. 13%). Gang members and drug sellers were also more likely than other arrestees to have stolen a gun (each about 30%).

Overall, 23% of arrestees who owned a gun had used one in a crime. The proportion was higher for juveniles (33%) and higher still for drug sellers (42%) and gang members (50%).

Arrestees were often the victims of gun violence

Juvenile males and gang members were more likely than arrestees overall to have been shot at. The proportion who said they had been shot at was about 4 in 10 overall, compared with about 5 in 10 for juvenile males and about 8 in 10 for gang members.

Although juveniles were more likely than adults to be shot at, they were not more likely to suffer gunshot injury. Overall, 16% of arrestees reported gunshot injuries.

Arrestees say they carry guns for protection and respect

Two-thirds of respondents said they had a gun for protection/self-defense. Almost one-third of arrestees agreed that, "Your crowd respects you if you have a gun." Among drug sellers and gang members, the proportion agreeing was higher (4 in 10). When asked when using a gun was appropriate, 9% of arrestees agreed that, "It is okay to shoot someone who disrespected you." Among juveniles, the proportion agreeing was double (18%). Among drug sellers, 21% agreed; among gang members, 34% agreed.

More crime guns were recovered from youth ages 16 and 17 than from adults of any age over 26

In 1996, the Bureau of Alcohol, Tobacco and Firearms established the Youth Crime Gun Interdiction Initiative to trace crime guns (i.e., any firearm illegally possessed, used in a crime, or suspected to have been used in a crime) recovered by law enforcement. More than 76,000 crime guns were traced from 27 cities during a 1-year period between 1997 and 1998. Almost one-half (44%) of crime guns were recovered from persons under the age of 25; 11% were recovered from youth age 17 or younger.

Age	Percent of crime guns
All	100%
17 or younger	11
18–24	32
25 or older	56

Note: Detail may not total 100% because of rounding.

4 in 5 recovered firearms were handguns

A handgun was the most common type of recovered firearm traced by law enforcement. Of these, a semiautomatic pistol was the most frequently possessed handgun among all age groups (52%). Semiautomatic pistols were more common among youth under age 18 (58%) and those ages 18–24 (60%) than among persons age 25 or older (47%).

	Age		
Type of gun	17 or younger	18–24	25 or older
Total	100%	100%	100%
Semiautomatic pistol	58	60	47
Revolver	29	24	27
Long gun	12	15	25

Note: Detail may not total 100% because of rounding.

More than half of high school seniors have used an illicit drug at least once—more have used alcohol

The Monitoring the Future Study tracks the drug use of secondary school students

In 1998, the Monitoring the Future (MTF) Study asked a nationally representative sample of nearly 50,000 secondary school students in public and private schools to describe their drug use patterns through self-administered questionnaires. Surveying seniors annually since 1975, the study expanded in 1991 to include 8th and 10th graders. By design, MTF excludes dropouts and institutionalized, homeless, and runaway youth.

More than half of seniors in 1998 said they used illicit drugs

In 1998, 54% of all seniors said they had at least tried illicit drugs. Marijuana was by far the most commonly used illicit drug: in 1998, 49% of high school seniors said they had tried marijuana. About half of those who said they had used marijuana (or 25% of all seniors) said they had not used any other illicit drug. About 3 in 10 seniors (29%) (or slightly more than half of seniors who used illicit drugs) had used an illicit drug other than marijuana. While almost half of high school seniors used marijuana at least once, 37% said they had used it in the past year, and 23% said they used it in the previous month. A large number of seniors used marijuana on nearly a daily basis. MTF asked students if they had used marijuana on 20 or more occasions in the previous 30 days. In 1998, 6% of high school seniors said they used marijuana that frequently.

Sixteen percent (16%) of high school seniors reported using stimulants, making stimulants the second most prevalent illicit drug after marijuana. Inhalants were the next most prevalent drug: 15% of seniors reported they had used inhalants. Stimulants also ranked second to marijuana in terms of current use.

In 1998, almost 1 in 10 seniors (9%) said they had used cocaine. More than half of this group (6%) reported that they used it in the previous year, and about one-quarter of users (2% of seniors) had used it in the preceding 30 days. About 1 in 20 seniors reported previous use of crack cocaine: about 1 in 40 in the previous year and about 1 in 100 in the previous month.

Heroin was the least commonly used illicit drug, with 2.0% of seniors reporting they had used it at least once. MTF found that a greater proportion of younger students (2.3% each for 8th and 10th graders) reported heroin use. These higher rates for younger age groups may reflect the fact that heroin users are more likely than other students to drop out of school before their senior year.

Alcohol and tobacco use is more widespread than use of any illicit drug

In 1998, 4 in 5 high school seniors said they had tried alcohol at least once; half said they had used it in the previous month. Even among 8th graders, the use of alcohol was high: one half had tried alcohol, and almost one-quarter had used it in the month prior to the survey.

More high school seniors use marijuana on a daily basis than drink alcohol daily

	Proportion of seniors who used			
	in lifetime	in last year	in last month	daily*
Alcohol	81.4%	74.3%	52.0%	3.9%
Been drunk	62.4	52.0	32.9	–
Cigarettes	65.3	–	35.1	22.4
Marijuana/hashish	49.1	37.5	22.8	5.6
Stimulants	16.4	10.1	4.6	0.3
Inhalants	15.2	6.2	2.3	0.2
LSD	12.6	7.6	3.2	0.1
Cocaine, not crack	9.3	5.7	2.4	0.2
Tranquilizers	8.5	5.5	2.4	0.1
MDMA (ecstasy)	5.8	3.6	1.5	0.2
Crack cocaine	4.4	2.5	1.0	0.1
PCP	3.9	2.1	1.0	0.3
Steroids	2.7	1.7	1.1	0.3
Heroin	2.0	1.0	0.5	0.1

■ More than 1 in 5 high school seniors smoked cigarettes on a regular basis, with more than 1 in 10 smoking half a pack or more per day.

*Used on 20 or more occasions in the last 30 days.

–Not included in survey

Source: Authors' adaptation of Johnston, O'Malley, and Bachman's *Drug use by American young people begins to turn downward.*

Perhaps of greater concern are the juveniles who indicated heavy drinking (defined as five or more drinks in a row) in the preceding 2 weeks. 31% of seniors, 24% of 10th graders, and 14% of 8th graders reported this behavior.

Tobacco use was less prevalent than alcohol use. In 1998, 65% of 12th graders and 46% of 8th graders had tried cigarettes, and 35% of seniors and 19% of 8th graders had smoked in the preceding month. Of more concern is the fact that 22% of seniors, 16% of 10th graders, and 9% of 8th graders were currently smoking cigarettes on a regular basis.

Males were more likely than females to drink alcohol and to use drugs

Males were more likely than females to drink alcohol at all or to drink heavily. Alcohol use in the past 30 days was reported by 57% of males and 47% of females. Almost 2 in 5 males and more than 1 in 4 females had five or more drinks in a row in the previous 2 weeks.

Males were more likely than females to have used marijuana in the previous year (42% vs. 33%), but the proportions of male and female high school seniors using illicit drugs other than marijuana in the previous year were more similar (22% vs. 18%). Males had higher annual use rates for inhalants, LSD, crack, cocaine, steroids, and heroin. Annual use rates were similar for males and females for stimulants, barbiturates, and tranquilizers.

Blacks had lower drug, alcohol, and tobacco use rates than whites

In 1998, 42% of white seniors said they had smoked in the past 30 days, compared with 15% of blacks. More than one-half of white seniors reported alcohol use in the past 30 days, compared with one-third of black seniors. Whites were three times more likely than blacks to have had five or more drinks in a row in the previous 2 weeks (36% vs. 12%).

The same general pattern held for illicit drugs. The proportion of seniors who reported using marijuana in the past year was lower among blacks than whites (30% vs. 40%).

Whites were seven times more likely than blacks to have used cocaine in the previous year. White seniors were also three times as likely as blacks to have tried heroin at least once and nine times as likely to have tried LSD.

Fewer than 1 in 10 high school students used alcohol or marijuana at school

According to the Centers for Disease Control and Prevention's 1997 Youth Risk Behavior Surveillance Survey, 6% of high school students said they had had at least one drink of alcohol on school property in the past month. Similarly, 7% said they had used marijuana on school property during the same time period.

Drug use was more common among males than females, and among whites than blacks

	Proportion of seniors who used in previous year				
	Male	Female	White	Black	Hispanic
Alcohol*	57.3%	46.9%	57.7%	33.3%	49.8%
Been drunk*	39.0	26.6	39.3	13.8	25.9
Marijuana/hashish	41.7	33.0	39.9	30.0	37.2
Cigarettes*	36.3	33.3	41.7	14.9	26.6
Stimulants	10.3	9.8	12.1	2.8	7.0
Inhalants	7.5	5.1	7.9	1.7	4.5
LSD	9.3	5.7	9.5	1.1	5.9
Cocaine, not crack	6.8	4.5	6.3	0.9	6.7
Barbiturates	6.3	4.8	6.5	1.4	3.3
Tranquilizers	6.3	4.7	6.2	1.0	3.3
Crack cocaine	3.1	2.0	2.6	0.3	3.9
Steroids	2.8	0.3	1.5	0.9	2.4
Heroin	1.4	0.7	1.2	0.4	0.8

Note: Race proportions include data for 1997 in addition to 1998, to increase subgroup sample size and provide more stable estimates.

*Alcohol and cigarette proportions are based on use in the prior 30 days.

Source: Authors' adaptation of Johnston, O'Malley, and Bachman's *National survey results on drug use from the Monitoring the Future Study, 1975–1998. Volume I: Secondary school students*.

Overall, males were more likely than females to drink alcohol or use marijuana at school. This was true for all grades and all racial/ethnic groups. Only females showed significant variation across grade levels, with a greater proportion of 9th graders drinking alcohol or using marijuana at school than 12th graders. Hispanic students were more likely than non-Hispanic white students to drink alcohol or use marijuana at school.

	Percent who had used on school property in the past 30 days		
	Total	Male	Female
Alcohol			
Total	6%	7%	4%
9th grade	6	6	5
10th grade	5	6	3
11th grade	6	8	4
12th grade	6	9	2
White	5	6	3
Black	6	7	4
Hispanic	8	9	8
Marijuana			
Total	7%	9%	5%
9th grade	8	10	7
10th grade	6	8	4
11th grade	8	10	5
12th grade	6	8	3
White	6	7	4
Black	9	13	5
Hispanic	10	14	6

High school students were three times more likely to use alcohol than to use marijuana before age 13

	Percent who had used before age 13					
	Alcohol			Marijuana		
	Total	Male	Female	Total	Male	Female
Total	31%	36%	26%	10%	12%	7%
9th grade	42	45	39	15	19	11
10th grade	32	36	28	10	12	8
11th grade	30	35	23	8	11	5
12th grade	23	29	15	6	8	4
White	29	33	24	8	9	6
Black	33	39	27	11	16	7
Hispanic	38	43	32	13	17	8

- Nearly one-third of high school students said they had drunk alcohol (more than just a few sips) before they turned 13; marijuana use before age 13 was reported by 1 in 10 students, and cocaine use before age 13 was reported by 1 in 100.
- Females were less likely than males to have used alcohol or marijuana before age 13. Males and females in grade 9 were more likely than those in grade 12 to have tried alcohol and marijuana before age 13.
- Compared with non-Hispanic white students, a greater proportion of Hispanic students had tried alcohol or marijuana before age 13.

Source: Authors' adaptation of Kann et al.'s Youth risk behavior surveillance—United States, 1997, *Morbidity and Mortality Weekly Report*, 47(SS-3).

One in three high school students said they had been offered, sold, or given an illegal drug on school property at least once during the past 12 months. For all grades and all racial/ethnic groups, males were more likely than females to say they had been offered, sold, or given illegal drugs at school. Hispanic students were more likely than white or black students to report being offered, sold, or given illegal drugs at school.

	Percent who had been offered, sold, or given an illegal drug on school property in past 12 months		
	Total	Male	Female
Total	32%	37%	25%
9th grade	31	35	28
10th grade	33	40	25
11th grade	33	39	26
12th grade	29	36	20
White	31	36	25
Black	25	35	17
Hispanic	41	47	34

Across States, the proportion of high school students who had been offered, sold, or given an illegal drug on school property during the year ranged from 15% to 42%

	Percent who had used alcohol on school property in the past 30 days			Percent who had used marijuana on school property in the past 30 days			Percent who had been offered, sold, or given an illegal drug on school property in the past year		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
U.S. Total	6%	7%	4%	7%	9%	5%	32%	37%	25%
Alabama	6	8	5	5	8	2	29	36	23
Arkansas	6	7	4	8	11	4	26	31	21
California*	**7**	**8**	**6**	**8**	**13**	**5**	**37**	**46**	**30**
Los Angeles	9	9	8	10	13	7	36	42	31
Colorado	**7**	**9**	**5**	**8**	**10**	**7**	**30**	**35**	**27**
Connecticut	7	8	6	8	10	6	29	33	26
Delaware	**6**	**8**	**5**	**8**	**10**	**5**	**39**	**45**	**33**
Dist. of Columbia	12	17	7	14	18	9	25	29	20
Florida	**4**	**5**	**4**	**7**	**9**	**4**	**36**	**42**	**29**
Hawaii	9	9	8	13	15	10	41	47	35
Iowa	4	6	3	5	6	3	23	27	18
Kentucky	7	7	6	8	11	4	34	40	28
Louisiana	5	7	4	5	7	3	28	33	23
Maine	6	7	5	10	12	6	41	45	36
Massachusetts	6	8	5	10	13	7	42	47	38
Michigan	7	8	6	9	12	6	36	43	30
Mississippi	7	9	5	5	9	2	24	30	19
Missouri	5	7	4	9	12	5	26	31	20
Montana	8	10	7	9	11	7	35	38	31
Nevada	8	8	8	10	11	8	38	42	33
New Hampshire	**5**	**6**	**5**	**8**	**10**	**6**	**35**	**39**	**31**
New Jersey	**5**	**7**	**3**	**6**	**8**	**3**	**28**	**34**	**22**
New York	6	8	5	8	10	5	27	33	22
North Carolina	**6**	**8**	**5**	**7**	**10**	**4**	**31**	**38**	**26**
North Dakota	7	8	6	8	8	7	29	31	27
Ohio	4	5	3	7	9	5	28	33	23
Rhode Island	7	9	6	9	12	7	29	34	25
South Carolina	6	8	4	7	10	3	–	–	–
South Dakota	8	11	5	5	8	2	30	34	26
Tennessee	**5**	**6**	**3**	**5**	**9**	**2**	**28**	**34**	**23**
Utah	5	6	4	5	6	3	27	29	25
Vermont	6	8	4	11	14	7	40	46	34
West Virginia	7	9	4	9	14	5	34	39	29
Wisconsin	4	5	3	8	10	5	28	31	25
Wyoming	7	9	6	8	10	6	32	36	27

*Data do not include students from the Los Angeles Unified School District

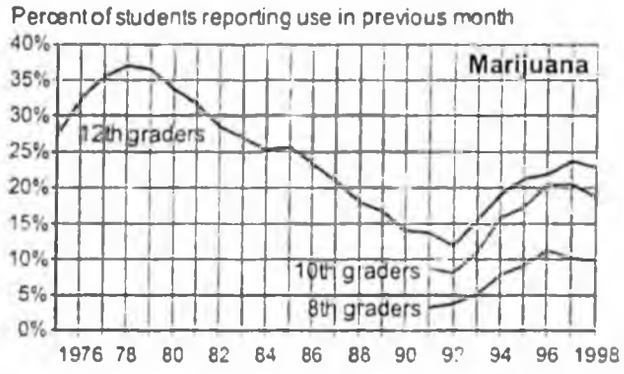
–Data not available

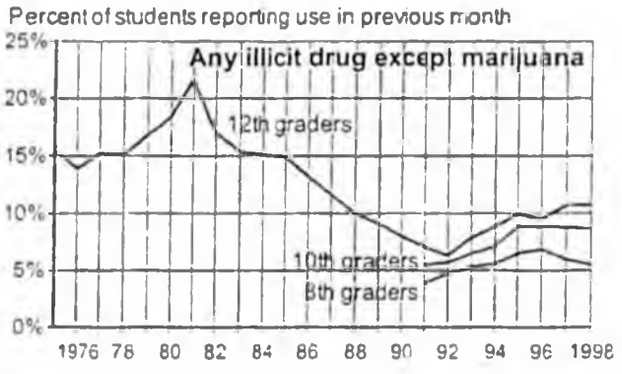
Note: Bold indicates data are unweighted because the overall response rate was less than 60%. Thus, data apply only to respondents.

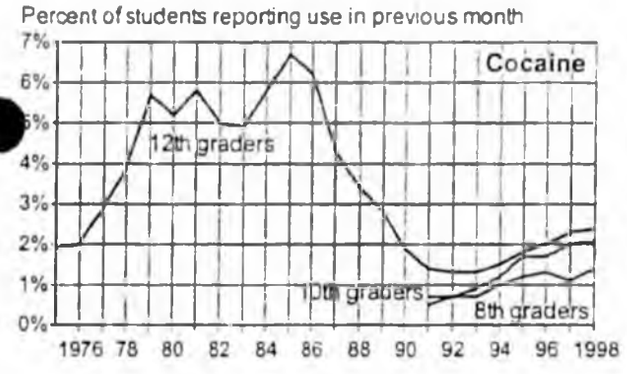
Source: Authors' adaptation of Kann et al.'s Youth risk behavior surveillance—United States, 1997, *Morbidity and Mortality Weekly Report* 47(SS-3)

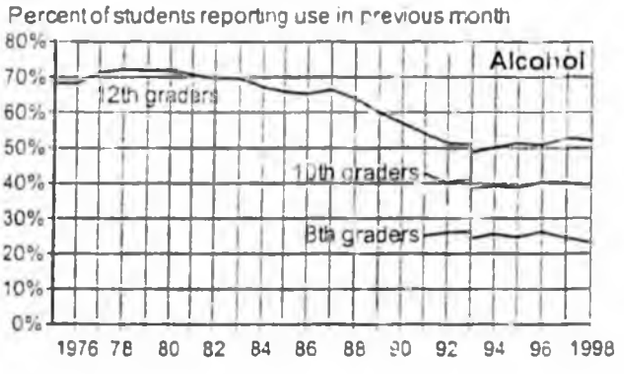
Illicit drug use by juveniles declined during the 1980's but has increased since 1992

In 1998, the proportion of high school seniors who reported they had used illicit drugs in the previous month, while above the 1992 levels, was well below the levels reported in the early 1980's









- After years of continuous decline, reported drug use by high school seniors grew in several categories after 1992. Similar increases in drug use were reported by 8th and 10th graders, although their levels of use were below those of 12th graders.
- In recent years, the proportion of students reporting use of illicit drugs during the 30 days prior to the survey appears to have stabilized for some categories of drug use. There was a statistically significant decline in reported marijuana use among 10th graders between 1997 and 1998.
- In 1998, the proportion of seniors who said they had used marijuana in the past month was more than double the proportion who reported past-month use of illicit drugs other than marijuana (23% vs. 11%) but less than half the proportion who reported past-month alcohol use (52%).
- Past-month cocaine use among seniors peaked in 1985 at nearly 7%. Although use levels for cocaine have increased recently, the 1998 level is slightly above 2%.
- Between 1997 and 1998, alcohol use among 8th and 10th graders remained unchanged.

Note: The survey question on alcohol use was revised in 1993 to indicate that a "drink" meant "more than a few sips." In 1993, half the sample responded to the original question and half to the revised question. In 1994 through 1998, all respondents were asked the revised question.

Source: Authors' adaptation of Johnston, O'Malley, and Bachman's *Drug use by American young people begins to turn downward*

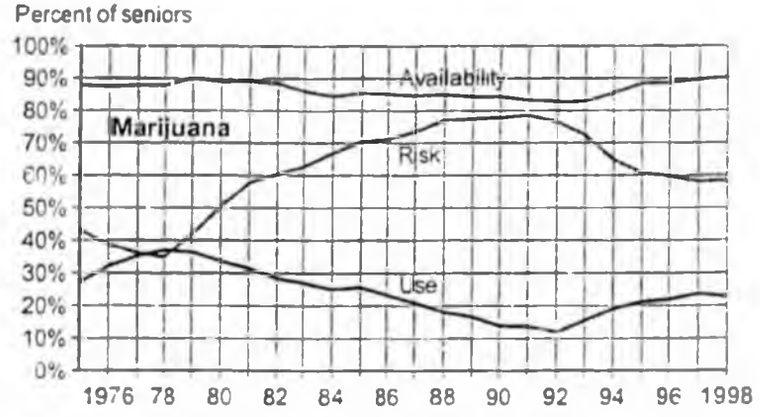
Change in students' use of marijuana and alcohol is tied to their perception of possible harm from use

The annual Monitoring the Future Study, in addition to collecting information about students' use of illicit drugs, alcohol, and tobacco, also collects data on students' perceptions regarding the availability of these substances and the risk of harm from using them.

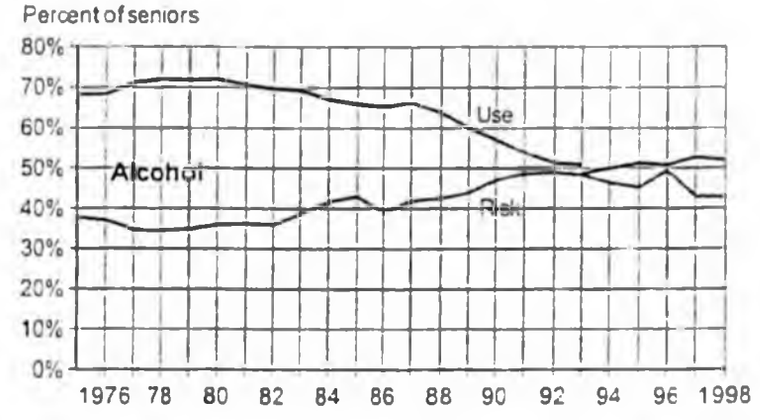
Between 1975 and 1998, the proportion of high school seniors reporting use of marijuana in the 30 days prior to the survey fluctuated, peaking in 1978 and then declining consistently through 1992. Since then, reported use has increased, but the 1998 rate was still far below the peak level of 1978. When the perceived risk of "great harm" from either regular or occasional use of marijuana increased, use declined; when perceived risk declined, use increased. The perception that obtaining marijuana was "fairly easy" or "very easy" remained relatively constant between 1975 and 1998.

Students' reported use of alcohol also shifted from 1975 to 1998. After 1978, alcohol use declined through 1993. Alcohol use fluctuated within a limited range thereafter, but the 1998 rate was far lower than the 1978 rate. As with marijuana, when the perceived risk of "great harm" from either weekend "binge" drinking or daily drinking increased, use declined; when perceived risk declined, use increased.

Over the past 20 years, while availability remained constant, changes in marijuana and alcohol use reflected changes in perceived harm



Availability: Percent saying fairly easy or very easy to get
Risk: Percent saying great risk of harm in regular use
Use: Percent using once or more in the past 30 days



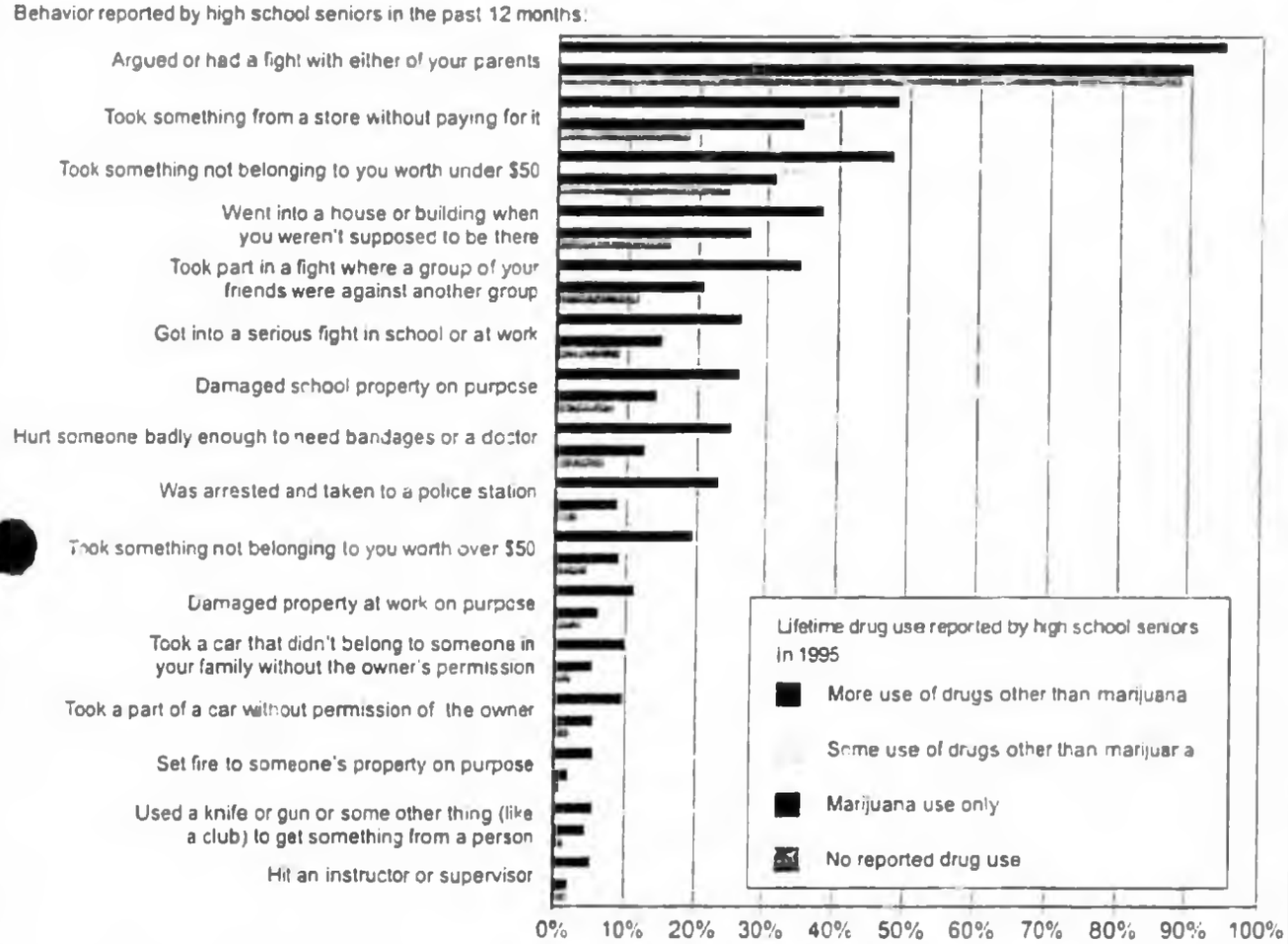
Risk: Percent saying great risk of harm in having five or more drinks once or twice each weekend.
Use: Percent using once or more in the past 30 days.

Note: The survey question on alcohol use was revised in 1993 to indicate that a "drink" meant "more than a few sips." In 1993, half the sample responded to the original question. In 1994 through 1998, all respondents were asked the revised question.

Source: Authors' adaptation of Johnston, O'Malley, and Bachman's *Drug use by American young people begins to turn downward.*

The proportion of seniors who reported breaking the law was greater among drug users than nonusers

Nearly all high school seniors said they had argued with their parents, and substantial proportions reported breaking the law—law-violating behavior was more common for those who used drugs



- Half of seniors (50%) reported no drug use; 21% reported using only marijuana (or hashish); 11% said they had used drugs other than marijuana (LSD/psychedelics, cocaine, amphetamines, tranquilizers, methaqualone, barbiturates) but had never used any one class of them more than twice and had never used heroin; 14% said they had used drugs other than marijuana three or more times and had never used heroin; and 2% said they had used heroin at least once.
- Nearly 2 in 10 seniors who said they had never used illicit drugs reported that in the past year they had taken something from a store without paying. Among those who had used marijuana only, the figure was more than 3 in 10; for those reporting some use of other drugs, the figure was nearly 4 in 10; for those reporting more use of other drugs, it was nearly 5 in 10.
- Of seniors who said they had used drugs other than marijuana three or more times, 35% reported that in the past year they had taken part in a fight where a group of their friends was against another group, the proportion for those in the "some use" and "marijuana only" categories was 21%; among seniors reporting no drug use the proportion was 12%.

Note: Detailed data for those reporting heroin use are not presented because there were too few cases.

Source: Graph developed from data presented in Johnston, Bachman, and O'Malley's *Monitoring the Future, questionnaire responses from a Nation's high school seniors, 1995.*

Gang problems now affect more jurisdictions than before—including rural and suburban areas

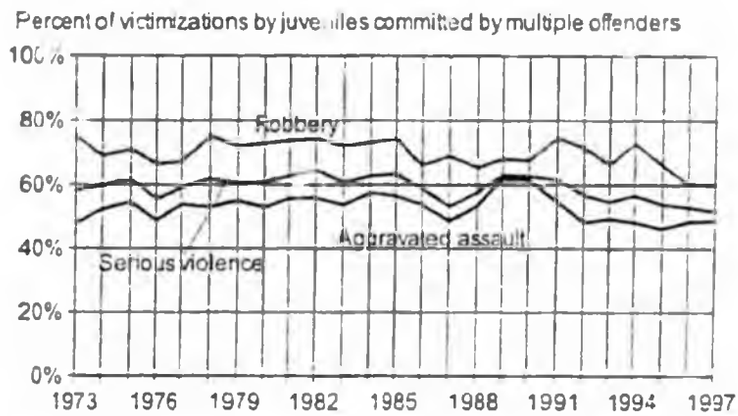
Information about gangs in the U.S. has increased markedly, but forming an accurate national picture remains difficult

Until recently, no national level data were collected on the number of gangs or gang members, the juvenile proportion of gang members, or the volume of gang crime. This has begun to change in the past few years. A National Youth Gang Survey is now conducted annually for the Office of Juvenile Justice and Delinquency Prevention by the National Youth Gang Center. The survey gathers basic data on gangs from police and sheriffs' departments across the country. The 1996 survey, which collected information for the year 1995 from a nationally representative sample of 2,629 law enforcement agencies, was extensive enough to shed considerable light on the scope of youth gang activity nationwide. In addition, analyses of several large-scale youth surveys have yielded insight into the dynamics of gang involvement and patterns of gang membership and gang crime.

Nevertheless, it remains difficult to form a clear statistical picture of youth gangs in America. While most youth gang definitions share a handful of common elements—a self-formed, recurrently interacting group, a common involvement in crime, communication through symbols, control of a particular territory or enterprise—there are no universally agreed-upon criteria for identifying gangs and gang members. Crucial distinctions between active core members, fringe members, and mere "wannabes" are typically lost in gang membership statistics. Since there is no uniform procedure for purging the files of no-longer-active gang members, law enforcement agencies' estimates of the number and age range of gang members in their jurisdictions may be artificially inflated. Also, political pressures to deny or minimize local gang problems—not to mention monetary incentives to exaggerate them—undoubtedly play a role in distorting gang membership statistics.

Estimating the volume of gang crime is also difficult. Some jurisdictions that acknowledge gang problems—even some that maintain files on gangs and gang members—do not keep track of gang-related criminal activity as such in their records. Some do so only for certain kinds of incidents, such as gang-related homicides. Even the definition of "gang crime" varies from place to place. In some cities, gang crime is member defined—all offenses involving gang members as perpetrators or victims, alone or in groups, are counted as gang crimes. In others, gang crime is motive defined—only offenses committed on behalf of the gang, such as crimes committed in defense of territory, retaliations, intimidation of witnesses, and graffiti, are counted.

The proportion of juvenile crime committed in groups did not change appreciably between 1973 and 1997



Note: It is improper to use these data to estimate the proportion of juvenile crime that is gang crime. Most juvenile crime has been committed in groups over the entire time period represented. It is, however, interesting to note that the large reported increase in juvenile gang activity in the late 1980's and early 1990's did not result in any apparent increase in the proportion of juvenile crime committed in groups.

Source: Authors' analyses of the Bureau of Justice Statistics' *1973–1997 National Crime Victimization Survey data* [Web site data files]

The Nation's youth gang problem is substantial and affects all sorts of communities

The 1996 National Youth Gang Survey indicates that an estimated 31,000 gangs were operating in close to 4,800 U.S. cities in 1995. These gangs had more than 846,000 members, half of whom were under age 18. These estimates are higher than those emerging from most previous gang studies. Regardless of whether this reflects actual growth in gang membership, more comprehensive

surveying, or other factors, the 1996 survey makes clear that gang problems now affect more jurisdictions than before, including many smaller cities and rural and suburban areas with no previous gang experience. Proportionally more big-city police departments (population 25,000 or more) responding to the survey reported an active gang presence in their jurisdictions in 1995 than did departments in other types of jurisdictions. However, substantial proportions of the police and sheriffs' departments in suburbs, smaller towns (population between 2,500 and 25,000), and even rural counties reported active gangs in 1995.

Type of jurisdiction	Percent reporting active gangs	Average year of gang problem onset
Big cities	74%	1989
Suburbs	57	1990
Small cities	34	1992
Rural areas	25	1993

Gang problems have emerged more recently in rural areas and small towns than in big cities and suburbs.

The spread of gang problems is not due to gang migration

While it is true that gangs have proliferated in recent years and that the problem has spread from large cities to small towns and rural areas, this does not mean that the physical migration of gang members is the cause. Most studies have concluded that, while such migration does occur, it does not play a major role in gang proliferation. Some exceptionally well-organized gangs are thought to be engaged in interstate drug trafficking and to be deliberately expanding their reach through member relocation. But overall, migrating gang members are relatively few, and their movements are attributable to normal residential relocation. Most law enforcement agencies regard their local gang problems as "home grown."

Gang demographics are changing as gangs emerge in new areas

Law enforcement agencies surveyed were asked to report the ages and racial and ethnic backgrounds of gang members in their jurisdictions.

	Demographic profile of gang members, 1995
Total number	846,000
	100%
Sex	
Male	90%
Female	10
Race/ethnicity	
Hispanic	44%
Black	35
White	14
Asian	5
Other	2
Age	
14 or younger	16%
15–17	34
18–24	37
25 or older	13

A comparison between these figures and those emerging from previous surveys suggests that white participation in gangs is on the rise. The change may be associated with the proliferation of gangs in rural counties and small cities, where the white proportion of gang membership (reported at 32% and 31%, respectively) is much higher than in large cities.

The proportion of female gang members, while small, may also be increasing. While respondents reported that in 1995 about 10% of gang members were female, the best estimate of female gang participation emerging from a similar 1992 survey was only 6%. Here again, part of this change may be associated with the emergence of new gangs in smaller cities, where female gang participation is higher. The change may also be associated with the fact that the percentage of female gang members also increased in nearly three-quarters of the 55 cities that reported female gang members in both the 1992 and 1996 surveys.

It should be noted that there are some marked differences between gang demographic profiles based on law enforcement records (like those described above) and those emerging from youth surveys. Most notably, those who identify themselves as gang members in response to youth surveys tend to include many more females and many more nonminority males than are found in law enforcement records on gangs. For example, in a survey of nearly 6,000 8th graders completed in 1995 as part of a national evaluation of the Gang Resistance Education and Training (G.R.E.A.T.) program, 25% of self-reported gang members were white and 38% were female.

The criminal activities of gang members are extensive and varied

Crimes that are designated "gang-related" in law enforcement agencies' records tend to be overwhelmingly violent. In 93 cities that kept data on gang-related criminal activity in 1992, homicides and other violent crimes accounted for more than half of the recorded gang crimes, while property crimes accounted for less than 15% and drug crimes only about 10%. But this is not necessarily an accurate reflection of

gang members' criminal activities. Law enforcement agencies responding to the 1996 National Youth Gang Survey reported significant youth gang involvement in a range of nonviolent crimes in their jurisdictions in 1995, especially larceny, burglary, and auto theft. The types of crimes in which youth gangs were involved varied according to locality, however. Large-city and suburban youth gangs were more prone to aggravated assault and robbery than were those in small towns and rural areas. Gang involvement in burglary was more common in suburban and rural areas than in small and large cities.

In any case, self-report studies indicate that youth gang members are responsible for a disproportionate share of all offenses, violent and nonviolent. For example, in a large-scale survey of Rochester, NY, youth by Thornberry and Burch, gang members making up less than a third of the sample accounted for 69% of the violent acts, 68% of the property crimes, and 70% of the drug sales reported in interviews. Surveys in other cities have yielded even more disproportionate results. Even when compared with similarly situated (that is, comparably at risk) young people—including those who associate to the same extent with delinquent peers—gang members commit crimes at considerably higher rates than nonmembers. Also, individual gang members tend to be more deeply involved in crime while active in gangs than either before joining or after leaving. These findings strongly suggest that a gang is much more than a mere association of criminally inclined young people and that the gang structure itself may encourage, facilitate, or even demand a heightened level of criminality among members.

The typical gang member's progress from "wannabe" status to serious crime is gradual

According to data compiled by Huff from confidential gang interviews in selected urban and suburban communities in Colorado, Florida, and Ohio, the median age for beginning to associate with gangs was 13, while the median age for actually joining—as well as the median age for first arrest—was 14. A companion study tracking the arrest histories of 83 gang members in Columbus, OH, found a clear progression in offense seriousness, beginning with property crimes and moving, within about 1.5 to 2 years, to violent crimes and drug crimes.

The extent of organized gang involvement in drug trafficking is difficult to gauge

On average, law enforcement agencies canvassed in the 1996 survey reported that gangs were involved in 43% of the illegal drug sales in their jurisdictions. While this percentage is remarkably high, it may be indicative only of the activities of individual gang members or drug-selling cliques within gangs, rather than the gangs themselves. Generally, researchers have concluded that, with some notable exceptions, street gang structures do not organizationally support drug distribution.

Gang presence in schools is increasing

While the overall amount of school crime reported by students showed no significant increase between 1989 and 1995, the proportion of those students who reported the presence of gangs in their schools increased from 15% to 28%. Moreover, the violent victimization rate for students in schools where gangs were reported was 7.5%, considerably higher than the 2.7% rate for students in schools with no reported gang presence.

54% of males and 73% of females who enter the juvenile justice system never return on a new referral

Official records can highlight gender differences in law-violating behavior

Information on the delinquent behavior of youth captured in the official records of law enforcement agencies and juvenile courts forms the picture of juvenile offenders available to the juvenile justice system. Self-report surveys of offending certainly yield more (and more varied) law-violating behavior. Official records, however, can highlight differences in the behaviors of various categories of juveniles—for example, differences in the law-violating behaviors of males and females.

To investigate gender differences in law-violating behavior, the records of the Maricopa County Juvenile Court (in Phoenix, AZ) were studied. Maricopa County is a large, urban area with a total population of nearly 2.5 million in 1995. The court's automated information system contains a description of each referral made to court intake since 1969. Records studied capture the complete juvenile court careers of more than 150,000 youth born between 1962 and 1977—youth who reached age 18 (and therefore were outside the original jurisdiction of the juvenile court) between 1980 and 1995.

During these years, there was a standing policy in the county that all youth arrested be referred to juvenile court for screening. Therefore, the court records actually provide a complete history of a youth's official contacts with the juvenile justice system.

3 in 10 youth with official delinquent careers are female

In this community, 31% of the youth with an official record of delinquency were female. This means that for every two males with an official delinquency record, there was one female whose behavior brought her to the attention of the juvenile justice system.

Males who came to the attention of the justice system were likely to have substantially more court contacts before they became an adult than were females: 46% of males referred to court intake in Maricopa County for the first time were referred at least one more time, compared with only 27% of females. In fact, 19% of males eventually accrued four or more referrals, compared with only 5% of females.

A smaller proportion of female careers contained a serious offense

Serious offenses include murder and nonnegligent manslaughter, kidnaping, violent sexual assault, robbery, aggravated assault, burglary, serious larceny, motor vehicle theft, arson, weapons offenses, and drug trafficking. Female careers were less likely to include a serious crime than were male careers. 16% of female careers and 42% of male careers included at least one serious offense referral. Even for youth with four or more referrals in their careers, a smaller proportion of female (62%) than male (86%) careers included a serious referral. Violent referrals were also found in a smaller proportion of female than male careers (3% vs. 10%), even in those careers with four or more total referrals (18% vs. 30%).

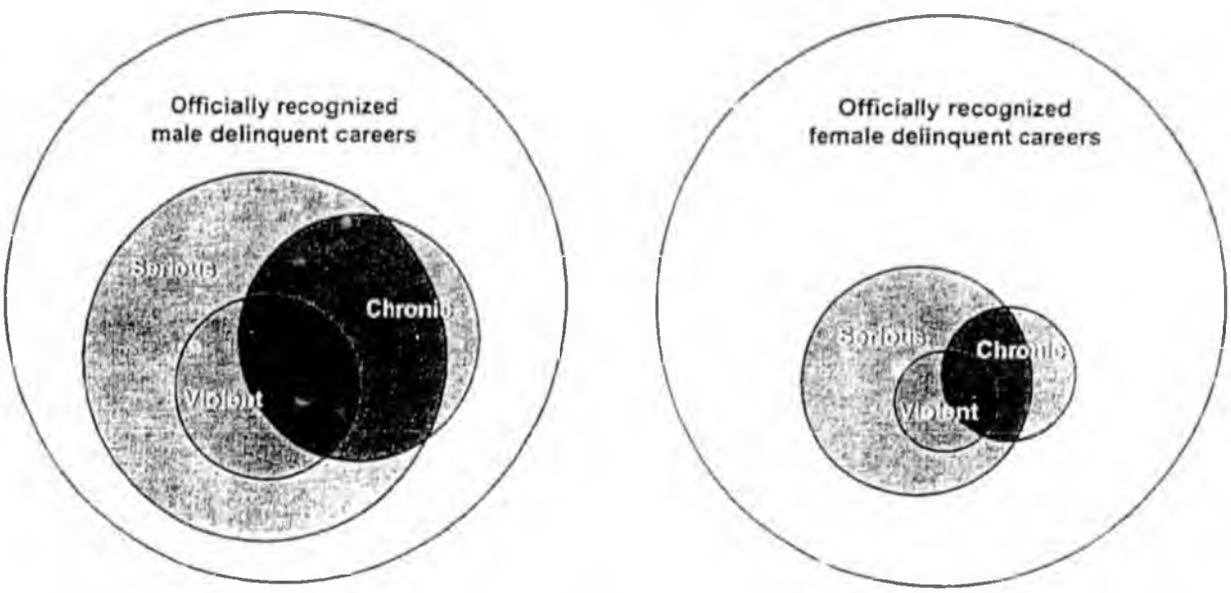
A chronic offender is defined as a youth with four or more referrals to court intake. Male chronic offenders were responsible for 52% of all male delinquency referrals, 62% of all male serious referrals, and 63% of all male violent referrals. In contrast, female chronic offenders were responsible for just 19% of all female delinquency referrals, 32% of all female serious referrals, and 33% of all female violent referrals.

About 1 in 4 males and females with delinquency records was first referred before age 14

The ages at which females and males enter the juvenile justice system were similar: 28% of males and 23% of females who would eventually have an official juvenile delinquency record were referred for the first time before age 14. A similar proportion of males (21%) and females (19%) had their first referral at age 17.

Youth who were known to the juvenile justice system by age 13 were responsible for a disproportionate share of the serious and the violent careers: 40% of all males with a violent career and 34% of all females with a violent career had been seen by the justice system by age 13. These early-onset offenders were also more likely to have long careers. Of chronic offenders, 52% of males and 53% of females had their first referral by age 13.

10% of males and 3% of females who had contact with the juvenile justice system for a delinquent offense were charged with at least one violent offense by the time they reached age 18



- The portion of the large circle not covered by the circles for serious, chronic, and violent offenders represents offender careers with fewer than four referrals and no referrals for a serious offense. Overlaps represent careers with multiple attributes. The circles and their overlaps are drawn in proportion to the number of careers with those attributes.
- **Violent offenses** include murder and nonnegligent manslaughter, kidnaping, violent sexual assault, robbery, and aggravated assault.
- **Serious offenses** include the violent offenses plus burglary, serious larceny, motor vehicle theft, arson, weapons offenses, and drug trafficking.
- **Chronic offenders** are youth with four or more referrals to the juvenile justice system.
- The delinquency careers of 1,000 typical males with officially recognized delinquent behavior prior to age 18 had the following characteristics: 557 careers involved fewer than four referrals, with no referrals for a serious offense; 188 careers involved four or more referrals; 416 careers involved a referral for a serious offense; 103 careers involved at least one referral for a violent offense; and 57 careers involved at least four referrals, with at least one for a violent crime.
- The delinquency careers of 1,000 typical females with officially recognized delinquent behavior prior to age 18 had the following characteristics: 821 careers involved fewer than four referrals, with no referrals for a serious offense; 55 careers involved four or more referrals; 158 careers involved a referral for a serious offense; 32 careers involved at least one referral for a violent offense; and 10 careers involved at least four referrals, with at least one for a violent crime.

Note: The data supporting this presentation capture the court careers of all 150,000 youth born between 1962 and 1977 (i.e., youth who turned age 18 between 1980 and 1995) who were referred to the Maricopa County Juvenile Court in Phoenix, AZ, for a delinquent act. Of these youth, 69% were male and 31% were female. The figures above represent the male and female cohorts with circles of equal size for ease of reading. If the two circles were drawn in proportion to the number of youth in each cohort, the male circle would have more than twice the area of the female circle.

Source: Authors' analysis of data supplied to the National Center for Juvenile Justice's *National Juvenile Court Data Archive: Maricopa County Juvenile Court case records, birth cohort 1962–1977* [machine-readable data file].

Allowing one youth to leave high school for a life of crime and drug abuse costs society $1.7–$2.3 million

A 1998 study by Mark Cohen estimated the external marginal costs imposed on society by the average career criminal, heavy drug abuser, and high school dropout. Though necessarily somewhat speculative, cost estimates of this kind help to convey a sense of the actual "waste" involved in a wasted life—as well as the substantial potential benefits to be expected from even modestly successful prevention efforts aimed at high-risk youth.

The portion of the study that focused on crime costs was based on estimates of the number and range of crimes committed by the average career criminal (68–80 crimes of various levels of seriousness, over an active career of about 10 years, including 4 as a juvenile), the tangible and intangible costs that such crimes impose on their victims; the expenses borne by the criminal justice system in connection with investigation, processing, and punishment; and productivity losses caused by incarceration. Discounted to a present-value dollar amount, the total crime costs imposed by a single lifetime of crime were estimated at $1.3–$1.5 million.

Note that these are *external* costs borne by those other than the perpetrator—victims, fellow citizens, and taxpayers. About half are intangible costs—pain, suffering, and diminished quality of life—imposed on victims alone and monetized according to widely accepted techniques developed by economists for

Invoice

To: American public
For: One lost youth

Description	Cost
Crime:	
Juvenile career (4 years @ 1–4 crimes/year)	
Victim costs	$62,000–$250,000
Criminal justice costs	$21,000–$84,000
Adult career (6 years @ 10.6 crimes/year)	
Victim costs	$1,000,000
Criminal justice costs	$335,000
Offender productivity loss	$64,000
Total crime cost	**$1.5–$1.8 million**
Present value*	**$1.3–$1.5 million**
Drug abuse:	
Resources devoted to drug market	$84,000–$168,000
Reduced productivity loss	$27,600
Drug treatment costs	$10,200
Medical treatment of drug-related illnesses	$11,000
Premature death	$31,800–$223,000
Criminal justice costs associated with drug crimes	$40,500
Total drug abuse cost	**$200,000–$480,000**
Present value*	**$150,000–$360,000**
Costs imposed by high school dropout:	
Lost wage productivity	$300,000
Fringe benefits	$75,000
Nonmarket losses	$95,000–$375,000
Total dropout cost	**$470,000–$750,000**
Present value*	**$243,000–$389,000**
Total loss	**$2.2–$3 million**
Present value*	**$1.7–$2.3 million**

* Present value is the amount of money that would need to be invested today to cover the future costs of the youth's behavior.

Source: Authors' adaptation of Cohen's The monetary value of saving a high-risk youth, *Journal of Quantitative Criminology, 14*(1).

purposes of cost-benefit analysis. The analysis, however, includes only marginal cost items—those associated with adding a single individual to the pool of career criminals. No attempt was made to gauge a single criminal's share of *aggregate* crime costs (expenses incurred because of the fear of crime generally, for example), which would have yielded a much higher figure.

Drug abuse and lack of education impose heavy costs on society as well

The study calculated external marginal costs associated with the average lifetime of heavy cocaine or heroin abuse on the basis of estimated drug treatment and rehabilitation costs, emergency and other medical costs, lost productivity costs, criminal justice costs incurred in connection with drug possession and other drug-defined crime, and the cost of resources diverted away from productive uses and into the drug market itself. The present-value total of all such costs for the average heavy drug abuser was estimated at $150,000–$360,000. (This figure does not include costs associated with additional drug-motivated and drug-related crime, which were estimated at $283,000–$781,000, or $220,000–$606,000 discounted to present value.)

The external marginal costs imposed by the average high school dropout were estimated largely on the basis of productivity losses and other "nonmarket" educational benefits foregone. Discounted to present value, the total loss suffered by society over the lifetime of the average high school dropout came to $243,000–$388,000.

Quantitative analysis of this kind suggests the practical wisdom of early investment in high-risk youth

Adding all of these marginal cost estimates together produces an estimate of the present value of preventing a single youth from leaving school and turning to drugs and crime as a way of life: $1.7–$2.3 million.

Obviously, it is not possible to arrive at an estimate of this kind without making a number of assumptions, including some about matters that are at least controversial, if not unknowable. The figures do, however, serve to illustrate that, under almost any reasonable set of assumptions, intervention efforts that are narrowly focused on high-risk youth and that succeed at least some of the time are likely to pay for themselves many times over.

What is present value?

To determine the savings produced by an action, economists employ the concept of *present value*. Present value is the amount that would have to be set aside today to pay for a related series of events that occur now and in the future. From this pool of funds, amounts can be deducted as expenses are realized. For the case of a criminal career, some expenses occur early in the career (e.g., the costs associated with the first referral to juvenile court). These expenses would be subtracted from the *present value* amount, while the remaining funds accrue interest before they are expended. As a result, the present value of a savings is somewhat less than the total amount of the savings realized by diverting a person from a criminal career.

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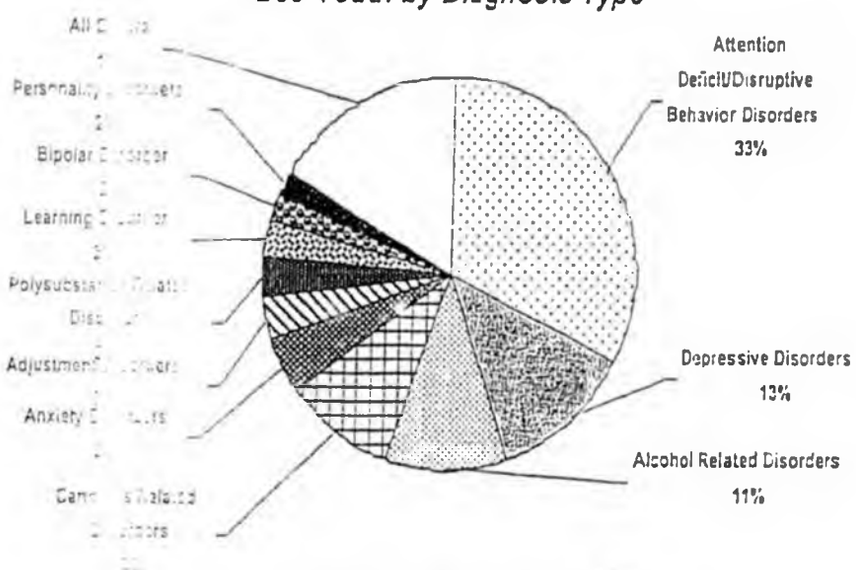
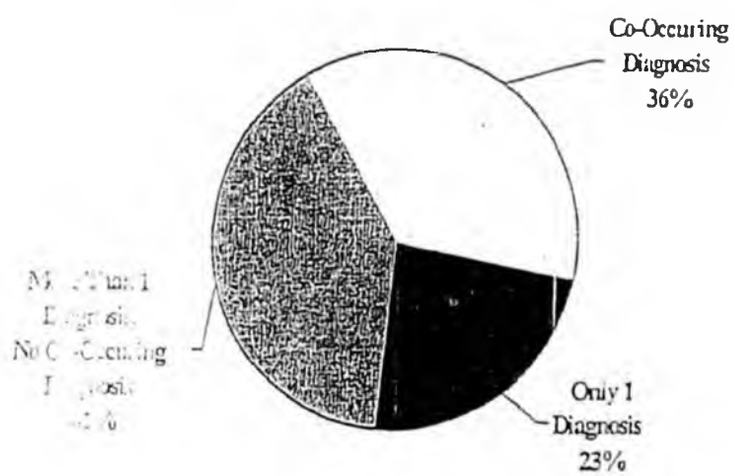
The graphs below display the results of a DSM IV survey done on all of the youth in the state juvenile justice system in FY 99. The DJJ expectation is to see a population with a high incidence of co-occurring substance abuse disorders. A co-occurring diagnosis is a substance-related disorder along with a clinical mental health order. Survey as of January 2000.

DJJ Youth by Diagnosis Type



This count represents the diagnoses of 459 youth.

DJJ Youth With a Co-Occuring Diagnoses



The next four questions ask about marijuana use. Marijuana is also called grass or pot.

69. How old were you when you tried marijuana for the first time? n=285

7%	I have never tried marijuana
20%	8 years old or younger
20%	9 or 10 years old
28%	11 or 12 years old
19%	13 or 14 years old
6%	15 or 16 years old
1%	17 years old or older

70. During your life, how many times have you used marijuana? n=285

7%	0 times
3%	1 or 2 times
4%	3 to 5 times
6%	10 to 19 times
6%	20 to 39 times
8%	40 to 99 times
67%	100 or more times

71. During the last 30 days, how many times did you use marijuana? n=285

39%	0 times
7%	1 or 2 times
9%	3 to 5 times
7%	10 to 19 times
10%	20 to 39 times
29%	40 or more times

72. During the last 30 days, how many times did you use marijuana on school property? n=285

63%	0 times
7%	1 or 2 times
11%	3 to 5 times
9%	10 to 19 times
6%	20 to 39 times
5%	40 or more times

Gender Differences in Juvenile Arrestees' Drug Use, Self-Reported Dependence, and Perceived Need for Treatment

Julia Yun Soo Kim, Ph.D.
Michael Fendrich, Ph.D.

Objectives: The authors examined gender differences in drug use, self-reported dependence, and perceived need for treatment in a national sample of juvenile arrestees and detainees between the ages of nine and 18 years. *Methods:* A sample of 4,644 boys and girls, drawn from the Juvenile Drug Use Forecasting Survey from 1992 to 1995, was matched by sex within each of seven sites by survey year. In anonymous interviews, respondents were asked about their living arrangements, drug use, and need for drug treatment. Questions about drug use covered marijuana, cocaine, crack, heroin, crystal methamphetamine, amphetamines, and phencyclidine (PCP). Logistic regression was used to identify significant predictors of drug dependence and perceived need for treatment. *Results:* Girls were significantly more likely than boys to report dependence but were no more likely to report a need for treatment. Among those who reported current, frequent drug use, girls were significantly less likely than boys to report a need for treatment. Girls who reported having more severe drug problems were more likely than their male counterparts to report dependence and a need for treatment. *Conclusions:* The ways in which juvenile arrestees report drug dependence and need for treatment differ by gender. Clinicians should assess and reduce barriers to treatment perceived by girls in particular to engage them in services before their drug use escalates. (*Psychiatric Services* 53:70–75, 2002)

The most common psychiatric problem among women in the criminal justice system is drug abuse and dependence (1). Women have more severe drug-related and other mental health problems than men and are more likely to identify their drug use as a problem (2). Studies have found that women who are involved with the criminal justice system are no more likely than their male counterparts to report a need for treatment (3,4). In fact, women with substance use problems are less likely than their male counterparts to participate in treatment (5,6).

It is unknown whether similar gender differences in self-reported dependence and need for treatment exist among juvenile arrestees or detainees. In this study we evaluated gender differences in self-reported drug use, dependence, and perceived need for treatment in a sample of juvenile arrestees. (Throughout this article, "arrestees" will be used to refer to both arrestees and detainees.)

Factors hypothesized to be associated with participation in treatment include predisposing variables, such as gender and need, that influence an individual's inclination to use health services (7–10). Need for treatment refers to health status, symptoms, or degree of illness and can be assessed professionally—with clinical criteria—or subjectively—by self-appraisal.

More women than men report symptoms, seek help, and use health care services in general (11). In the juvenile justice system, girls and boys differ significantly in the type and degree of their problems. Delinquent girls are more likely than their male counterparts to have experienced severe neglect (12), out-of-home placement (13,14), and sexual or physical abuse (6,15). Given these differences, the degree and type of drug involvement and attitudes toward help-seeking are expected to differ by gender.

Perceived need for treatment is a subjective self-assessment of problem severity (10). It can be measured indirectly by an individual's own admission of dependence on a drug or directly by a self-reported need for professional help. In a study of adult arrestees by Longshore and colleagues (3), self-reported dependence was the strongest predictor of perceived need for treatment, indicating that these two variables are highly correlated.

However, admitting dependence is not the same as expressing a desire

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for treatment. Some people who acknowledge dependence on drugs may not consider their dependence a problem that is serious enough to warrant professional intervention. Others may be reluctant to admit a need for treatment because of perceived barriers to treatment. For example, a lack of sensitivity to women's particular needs and concerns among treatment providers has been cited as one barrier to women's seeking treatment (16,17).

Unlike perceived need, evaluated need for treatment is measured objectively according to clinical judgment and criteria. Clinical interviews or self-administered instruments are used to assess the severity of an individual's drug problem according to established standards, such as those in the *Diagnostic and Statistical Manual of Mental Disorders* (18). The magnitude of a drug problem is indicated by criteria such as age at first use, frequency of use, polydrug use, and number of years of regular drug use (19). An individual's admission of problematic behaviors according to these indicators alone, even in the absence of self-reported dependence or need for treatment, informs clinicians of the degree of the need for treatment. Both evaluated and perceived need for treatment are influenced by the degree of drug use problems. In a study of adult arrestees by Fiorentine and Anglin (4), the severity of drug use was one of the strongest predictors of perceived need for treatment.

In our study, measures of drug use problems were included as predictors of self-reported dependence and perceived need for treatment. We hypothesized that the severity of drug problems and current use—that is, evaluated need for treatment—would be greater among girls than boys. In terms of perceived need for treatment, we predicted that girls would be more likely than boys to identify their drug use as problematic and therefore would report more dependence. However, we did not expect boys and girls to differ significantly in their self-reported need for treatment. Further, we hypothesized that the severity of the drug problem and frequent current use would interact with gender in predicting self-reported dependence and perceived need for treatment.

Methods

Sample and procedures

The sample was drawn from the National Institute of Justice Drug Use Forecasting Program, which has since been converted to the Arrestee Drug Use Monitoring Program. In selected cities throughout the United States, locally trained nonuniformed staff are contracted by the National Institute of Justice to conduct anonymous interviews and drug screenings among juvenile arrestees within two days of their arrival at a booking facility. Consenting youths are asked questions about their current living arrangements, drug use, and perceived need for drug treatment. Response rates for adult arrestees have been consistently high: more than 90 percent of potential participants consent to be interviewed, and more than 80 percent agree to provide a urine specimen (20).

Data from the survey years 1992 to 1995 were combined across seven program sites that included juvenile females in all four years—Birmingham, Denver, Indianapolis, Phoenix, Portland, San Antonio, and San Jose. The sample of 11,186, which was restricted to participants between the ages of nine and 18 years, comprised 5,864 boys (79.2 percent) and 2,322 girls (20.8 percent). To produce an even sex ratio, respondents were matched by sex within each site by survey year, producing 28 stratified groups. Overall, about 26 percent of the male sample was randomly selected, resulting in a matched group of 2,325 boys, for a total sample of 4,644.

Variables

This study focused on seven drugs for which perceived need for treatment was measured: marijuana; cocaine; crack; heroin, including black tar heroin; crystal methamphetamine; amphetamines; and phencyclidine (PCP). Respondents who answered that they could use treatment for drug use, with or without treatment for alcohol use, were asked to specify the drug for which they could use treatment. Participants were then asked whether they had used each drug during their lifetime, during the previous month, and during the previous 72 hours. They were also asked the age at which they first used each drug and whether they had ever felt dependent on the drug. Self-reported dependence and perceived need for treatment were coded 1 for an affirmative response in relation to any one of the seven drugs and 0 for a negative response.

Drug use problems were measured by five dichotomous indicators: first use before the age of 14; polydrug use, defined as ever having tried three or more drugs; injection drug use, defined as ever having injected a drug; recent drug use, measured by a positive urinalysis for marijuana, cocaine, opiates, amphetamines, or PCP; and highly frequent drug use, defined as use of marijuana six or more times or any of the "hard" drugs three or more times in the previous month.

The five drug use indicators were entered into a principal components factor analysis with a varimax rotation. This procedure yielded a two-factor solution that accounted for 56.5 percent of the variance. The first factor comprised injection drug use, polydrug use, and early age at first use. This factor was used to create a scale called "severity," which had a range of 0 to 3. The items that loaded on the second factor, urinalysis results and frequency of drug use over the previous month, were used to create a second scale, labeled "current use," which ranged from 0 to 2.

Lifetime prevalence of use by gender for each of the seven drugs was estimated on the basis of self-report. Gender differences were examined on a bivariate level for each of the five drug problem indicators, drug problem severity and current use indexes, self-reported dependence, and perceived need for treatment. Logistic regression models were run separately for dependence and perceived need for treatment to examine the effect of gender while controlling for drug problem severity, current use, and key demographic variables.

After evaluating main effects, we included two-way interactions between gender and drug problem severity and between gender and current use to examine how drug-related problems interact with gender to predict self-perceptions of drug dependence and need for treatment. The survey site was included in the logis-

Table 1

Characteristics of 4,644 boys and girls from the Drug Use Forecasting Survey sample between 1992 and 1995, matched by sex and site

Variable	Boys (N=2,325) N	Boys (N=2,325) %	Girls (N=2,319) N	Girls (N=2,319) %	χ^2	df
Age group (years)					36.72*	3
9 to 11	34	1.5	31	1.3		
12 to 14	790	34	967	41.7		
15 or 16	1,095	47.1	1,022	44.1		
17 or 18	406	17.5	299	12.9		
Race or ethnicity					30.49*	4
Black	800	34.4	715	30.8		
Hispanic	763	32.8	664	28.6		
White	669	28.8	823	35.5		
Other	71	3.1	86	3.7		
Data not obtained	22	.9	31	1.3		
Family living situation					26.71*	2
No parent or stepparent	507	21.8	657	28.4		
One parent or stepparent	1,087	46.8	986	42.6		
Two parents or stepparents	730	31.4	671	29		
Most serious arrest charge					83.73*	3
Violent offense	506	21.8	377	16.3		
Property offense	731	49.9	733	31.6		
Drug-related offense	193	8.3	85	3.8		
Other offense	891	38.4	1,116	48.3		
Drug treatment experience	300	12.9	300	12.9		
Interview year						
1992	497	21.4	509	21.9		
1993	673	28.9	675	29.1		
1994	720	31	724	31.2		
1995	435	18.7	411	17.7		
Site						
Birmingham	270	11.6	266	11.5		
Denver	364	15.7	381	16.4		
Indianapolis	409	17.6	433	18.7		
Phoenix	382	16.4	374	16.1		
Portland	259	11.1	226	9.7		
San Antonio	53	19.5	431	18.6		
San Jose	188	8.1	205	9		

*p< .001, statistical data not shown for nonsignificant comparisons

Table 2

Lifetime drug use in a sample of 4,644 boys and girls from the Drug Use Forecasting Survey sample between 1992 and 1995

Drug	Boys (N=2,325) N	Boys (N=2,325) %	Girls (N=2,319) N	Girls (N=2,319) %	χ^2[1]
Any of seven drugs	1,684	72.4	1,617	69.7	4.12*
Marijuana	1,669	71.8	1,601	69	4.2*
Cocaine	409	17.6	453	19.5	2.9
Crack	146	6.3	208	9	11.93***
Amphetamines	215	9.2	277	11.9	8.92**
Heroin, including black tar heroin	50	2.2	89	3.8	11.38***
Crystal methamphetamine	197	8.5	288	12.4	19.33***
Phencyclidine (PCP)	64	2.8	97	4.2	7.10**

[1]df=1

*p< .05

**p< .01

***p< .001

tic regressions for cluster adjustment. We addressed potential clustering of observations within a site by using a robust variance estimator through the STATA statistical software program (21). According to the STATA manual, this procedure is a variant of the procedure outlined by Huber (22) and White (23,24). The use of this procedure limits the generalizability of the results to the study sites.

Results

Demographic and other characteristics of the sample are summarized in Table 1. The mean±SD age of the boys and girls in the sample was 14.9±1.53 years. Black, white, and Hispanic youths each made up about a third of the overall sample. Older adolescents, blacks, and Hispanics were overrepresented among boys, who were more likely than girls to be arrested for violent, property, and drug-related offenses. Girls were significantly more likely than boys to be arrested for status offenses, such as running away and truancy, and to be living with no parents or stepparents. No significant gender difference in drug treatment experience was found.

The estimates of lifetime prevalence of drug use by gender are listed in Table 2. For all drugs except cocaine, significant differences between boys and girls were found. Marijuana was the only drug for which the prevalence of use was higher among boys. More girls than boys reported trying crack, heroin, amphetamines, crystal methamphetamine, and PCP.

Significant gender differences were found for four of the five drug problem indicators, as can be seen in Table 3. Nearly 16 percent of girls, compared with 11 percent of boys, were classified as polydrug users. One percent of boys and 5 percent of girls reported ever having injected drugs. A high frequency of drug use in the previous month and a positive urinalysis result were significantly more common among boys than girls. About 24 percent of boys and 20 percent of girls were classified as high-frequency drug users. A positive urinalysis result was reported for 34 percent of the boys, compared with 18 percent of the girls. Age at first use did not differ significantly between girls and boys. Girls

had a significantly higher mean score on the severity index, and boys had a significantly higher mean score on the current use composite.

Data on self-reported dependence and perceived need for treatment are presented in Table 4. Nearly 10 percent of the girls and 8 percent of the boys reported that they had ever felt dependent on at least one of the seven drugs. Girls reported significantly higher rates of dependence on cocaine, amphetamines, and crystal methamphetamine. However, girls were no more likely than boys to report a need for treatment for drug abuse overall. About 6 percent of boys and girls stated that they could use treatment for any one of the seven drugs. Of those who reported a need for treatment, more girls than boys reported a need for treatment for use of cocaine, crack, heroin, or amphetamines. However, significantly more boys than girls reported needing treatment for marijuana use.

The results of the logistic regression analyses predicting dependence and perceived need for treatment are summarized in Table 5. Gender was not a significant predictor of self-reported dependence or perceived need for treatment. The only significant predictors of dependence were drug problem severity and current use. Compared with respondents who had no severity indicators, those who had one, two, or three indicators were significantly more likely to report dependence on at least one drug. Respondents who had one or two current use indicators were also more likely than those with no current use indicators to report dependence. Perceived need for treatment was predicted by the severity of the drug problem and current use, race or ethnicity, and interview year. Greater severity and higher current use scores were associated with a greater likelihood of a perceived need for treatment.

We further investigated sex differences by entering two interaction terms—sex by severity and sex by current use—into the logistic regression models (data not shown). The sex-by-severity interaction significantly predicted dependence. Girls who had one severity indicator were 1.47 times as likely as boys to report that they were dependent on a drug (95 per-

Table 3

Indicators of drug problems in a sample of 4,644 boys and girls from the Drug Use Forecasting Survey sample between 1992 and 1995

Variable	Boys (N=2,325) N or mean±SD	%	Girls (N=2,319) N or mean±SD	%	Test statistic[a]
First use before age 14	982	56.5	990	61.3	χ^2=2.64
Polydrug use	255	11	365	15.7	χ^2=22.65*
Ever injected drugs	20	1.2	80	5	χ^2=39.65*
High frequency of use in previous month	563	24.2	462	19.9	χ^2=12.44*
Positive urinalysis result	791	34	425	18.3	χ^2=147.96*
Severity (mean)	.75±.7		.89±.81		t=-5.36*
Current use (mean)	.76±.79		.53±.71		t=6.92*

[a] df=1
*p<.001

Table 4

Self-reported dependence and perceived need for treatment among 2,325 boys and 2,319 girls from the Drug Use Forecasting Survey sample between 1992 and 1995

Drug[a]	Dependence: Boys N	%	Girls N	%	χ^2[b]	Perceived need for treatment: Boys N	%	Girls N	%	χ^2[b]
Any of seven drugs[c]	179	7.8	215	9.5	4.05*	132	5.7	136	5.9	.09
Marijuana	147	6.8	143	9	.20	109	83.6	85	64.4	12.9***
Cocaine	27	6.9	60	13.5	9.72**	20	15.3	38	28.6	6.61**
Crack	20	13.9	33	16.4	.41	13	9.9	25	18.8	4.22*
Amphetamines	3	1.5	20	7.5	8.65**	4	3	13	9.6	4.86*
Heroin, including black tar heroin	1	.2	6	9	2.56	1	.8	9	6.6	6.4*
Crystal methamphetamine	15	7.8	40	13.9	4.27*	19	14.6	25	18.7	.78
Phencyclidine (PCP)	4	6.5	7	7.5	.07	3	5.3	2	1.5	3.03

[a] For each drug, the percentages are based on the number of respondents who reported lifetime use.
[b] The percentages are based on all the boys and girls in the sample.
[c] df=1
*p<.05
**p<.01
***p<.001

Table 5

Results of logistic regression predicting self-reported dependence and perceived need for treatment among juvenile arrestees, with cluster adjustment for site

Variable	Dependence (N=3,097)[a]		Perceived need for treatment (N=3,150)[b]	
	Odds ratio	95% CI	Odds ratio	95% CI
Age	1.06	.99–1.16	1.05	.93–1.16
Race or ethnicity				
White	1.00		1.00	
Black	.87	.70–1.08	.50	.25–.89*
Hispanic	.89	.67–1.18	.50	.41–.62***
Sex				
Male	1.00		1.00	
Female	1.38	.97–2.21	.91	.69–1.21
Severity index				
No indicators	1.00		1.00	
One indicator	2.44	1.68–3.54***	1.65	1.12–2.43*
Two indicators	7.11	4.89–10.34***	4.79	2.75–8.34***
Three indicators	15.99	9.65–26.51***	10.15	5.11–20.17***
Current use index				
No indicators	1.00		1.00	
One indicator	2.91	2.02–4.19***	2.31	1.70–3.15***
Two indicators	5.46	4.19–7.09***	3.41	2.16–5.35***
Interview year				
1992	1.00		1.00	
1993	.77	.45–1.24	.66	.49–.88**
1994	.96	.48–1.92	.77	.50–1.19
1995	1.04	.49–2.20	.68	.34–1.37
Family situation				
Two parents or step-parents	1.00		1.00	
No parents or step-parents	1.14	.81–1.59	1.25	.88–1.77
One parent or step-parent	1.03	.71–1.47	.95	.70–1.25

[a] Hosmer-Lemeshow goodness-of-fit test: χ^2=11.9, df=1, p=.16
[b] Hosmer-Lemeshow goodness-of-fit test: χ^2=3.89, df=1, p=.86
*p<.05
**p<.01
***p<.001

cent confidence interval=1.02 to 2.12). Among arrestees who had three severity indicators, girls were 3.32 times as likely as boys to admit dependence (CI=3.32 to 8.33).

For perceived need for treatment, the sex-by-severity interaction was significant at the level of only three severity indicators. Among the most severe drug users, girls were 7.1 times as likely as boys to say that they were dependent (CI=2.23 to 22.65). Current use interacted significantly with gender in predicting perceived need for treatment. Among respondents with either one current use indicator (odds ratio=.53; CI=.30 to .92) or two indicators (odds ratio=.40; CI=.24 to .68), girls were significantly less likely to report a need for treatment.

Discussion and conclusions

The female juvenile arrestees in our study were more likely than their male counterparts to endorse indicators of severe or chronic drug use. The boys, on the other hand, were more likely to be engaged in current frequent drug use. Thus our hypothesis that the evaluated need for treatment would be greater among girls than boys was only partially supported. As we expected, the perceived need for treatment was higher among girls than boys, but they were equally likely to state that they could use treatment. Our findings parallel those from studies of adult arrestees, in which a greater proportion of women than men reported dependence but women were no more likely not to report a need for treatment.

For both sexes, the severity of the drug problem was the strongest predictor of self-reported dependence and perceived need for treatment. The severity of the problem also interacted significantly with gender in predicting dependence and perceived need for treatment. In support of our hypothesis, girls were significantly more likely than boys to admit dependence at higher levels of severity and to acknowledge a need for help. By contrast, among those who were actively engaged in current drug use, girls were significantly less likely than boys to report a need for treatment.

These findings may be interpreted in the context of the relative proportions of males and females in the juvenile justice system. The vast majority of juvenile arrestees are boys, which suggests two major differences. First, adolescent girls who are arrested are more deviant relative to their same-sex peers than is the case for males. Research indicates that many delinquent girls are more likely than boys to have experienced trauma, such as physical and sexual abuse (6,15). The risk of drug abuse among persons who have been traumatized is significantly greater than among those who have not (25).

In addition, depression is significantly more common among jailed women than among their male counterparts (26). In the general population, adolescent girls have twice the rate of depression as adolescent boys (27). For many women who use drugs, drug use has been conceptualized as a coping strategy for escaping from stress (28). The girls in our study who currently used drugs frequently were more reluctant than the boys to state that they needed treatment, perhaps because they were more likely to rely on self-medication.

Second, because fewer girls are arrested than boys, it is possible that fewer services are available that are appropriate for girls. The smaller proportion of females in the criminal justice system means that the per capita expense of providing services similar to those provided for men is too high (29). Females in the criminal justice system are confronted with more barriers and have fewer options for drug treatment (16,30). Thus for girls to be willing to consider drug treatment as a potential-

by helpful resource, their level of drug use may need to be more extreme.

One implication of this finding is that delinquent girls' perceived barriers to treatment should be identified and reduced to increase their willingness to accept treatment, before the severity of their drug use becomes chronic and progresses to the point of injection and polydrug use. We could not determine whether girls who abuse drugs might be more willing to accept treatment that addresses past trauma or current mental health problems than substance abuse treatment per se. Future surveys of high-risk adolescents, such as the Arrestee Drug Use Monitoring Program, would be enhanced by obtaining information about psychiatric symptoms.

Our study used a convenience sample and was limited to juvenile arrestees in seven sites across the United States. Because of adjustment for possible clustering effects of site in the logistic regressions, the results are not generalizable beyond the sites used in these analyses (21), and caution is warranted in applying these findings to other samples. Nevertheless, the limitations of using a convenience sample were balanced by the strengths of the Drug Use Forecasting Program data. Large, multisite surveys of adolescents in the juvenile detention system are rare, and the inclusion of drug testing is costly.

As in many studies that rely on self-report, our study was limited by the possibility of differences in reporting patterns across demographic groups. In a previous study with a similar sample of juvenile arrestees, girls were more willing than boys to validly disclose marijuana use (31). This finding raises the possibility that the prevalence of marijuana use among boys in our study was an underestimate that influenced the results. However, in treatment research the validity of reporting a need for help is not necessarily problematic. A reluctance to report a need for professional help on the part of persons who are clinically evaluated as needing treatment is in itself an important topic of inquiry.

Our study showed how the perception of a need for help differs by gender and by drug problem severity. Service providers who work with high-risk delinquent youths in the juvenile justice system should consider these differences when attempting to engage such individuals in treatment. ♦

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Drug	Boys (N=2,325)		Girls (N=2,319)		
	N	%	N	%	χ^2[1]
[illegible] of seven drugs	1,684	72.4	1,617	66.7	4.12*
Marijuana	1,669	71.8	1,601	69	4.2*
Cocaine	409	17.6	453	19.5	2.9
Crack	146	6.3	208	9	11.93***
Amphetamines	215	9.2	277	11.9	8.92**
Heroin, including black tar heroin	50	2.2	89	3.8	11.35***
Crystal methamphetamine	197	8.5	288	12.4	19.33***
Phencyclidine (PCP)	64	2.8	97	4.2	7.10**

[1]df=1
*p<.05
**p<.01
***p<.001

Drug	Dependence					Perceived need for treatment				
	Boys		Girls			Boys		Girls		
	N	%	N	%	χ^2[a]	N	%	N	%	χ^2[a]
[illegible] drugs[b]	170	7.8	814	8.5	4.03*	132	5.7	130	2.8	19.
[illegible]ana	147	8.5	140	9	.39	120	63.6	65	61.4	12.1***
[illegible]	67	6.9	46	13.5	9.72**	59	55.1	26	25.6	6.61**
Crack	20	17.39	13	16.4	.01	13	9.9	8	5.5	4.22*
Amphetamines	3	1.3	20	7.5	6.63**	4	3	13	10.6	4.99*
Heroin, including black tar heroin	1	.5	6	11	2.36	1	.8	9	8.8	6.47
Crystal meth-amphetamine	15	7.5	46	13.9	4.27*	19	14.6	25	16.7	.24
Phencyclidine (PCP)	4	6.5	7	7.5	.07	2	5.1	2	1.8	3.07

[illegible] the percentages are based on the number of respondents who reported [illegible]

[b] The percentages are based on all the boys and girls in the sample.

*p<.05

**p<.01

***p<.001

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The relationship between performance on the standardised field sobriety tests, driving performance and the level of Δ9-tetrahydrocannabinol (THC) in blood

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Abstract

The consumption of Δ9-tetrahydrocannabinol (THC) as cannabis has been shown to result in impaired and culpable driving. Testing drivers for the presence of THC in blood is problematic as THC and its metabolites may remain in the blood for several days following its consumption, even though the drug may no longer have an influence on driving performance. In the present study, the aim was to assess whether performance on the standardised field sobriety tests (SFSTs) provides a sensitive measure of impaired driving behaviour following the consumption of THC. In a repeated measures design, 40 participants consumed cigarettes that contained either 0% THC (placebo), 1.74% THC (low dose) or 2.93% THC (high dose). For each condition, after smoking a cigarette, participants performed the SFSTs on three occasions (5, 55 and 105 min after the smoking procedure had been completed) as well as a simulated driving test on two occasions (30 and 80 min after the smoking procedure had been completed). The results revealed that driving performance was not significantly impaired 30 min after the consumption of THC but was significantly impaired 80 min after the consumption of THC in both the low and high dose conditions. The percentage of participants whose driving performance was correctly classified as either impaired or not impaired based on the SFSTs ranged between 65.8 and 76.3%, across the two THC conditions. The results suggest that performance on the SFSTs provides a moderate

predictor of driving impairment following the consumption of THC and as such, the SFSTs may provide an appropriate screening tool for authorities that wish to assess the driving capabilities of individuals suspected of being under ' ' fluence of a drug other than alcohol.

Keywords: Marijuana; Δ9-tetrahydrocannabinol; SFSTs; Driving impairment

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NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION

Drugs and Human Performance Fact Sheets

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15. Supplementary Notes

The following toxicologists made significant contributions to both the drafting and review of the Fact Sheets: Michael Corbett Ph.D., Laurel Farrell MS., Marilyn Huestis Ph.D., Wayne Jeffrey MS, and Jan Raemakers, Ph.D. James F.Frank Ph.D. served as the NHTSA Contracting Officer's Technical Representative.

16. Abstract

A panel of international experts on drug-impaired driving met in Seattle during August 2000 to review developments in the field of drugs and human performance over the last 10 years; to identify the specific effects that both illicit and prescription drugs have on driving, and to develop guidance for others when dealing with drug-impaired driving problems. Delegates represented the fields of psychopharmacology, behavioral psychology, drug chemistry, forensic toxicology, medicine, and law enforcement experts trained in the recognition of drug effects on drivers in the field.

These Fact Sheets represent the conclusions of the Panel and include the state of current scientific knowledge in the area of drugs and human performance for the 16 drugs selected for evaluation. The selected drugs include over-the-counter medications such as dextromethorphan and diphenhydramine; prescription medications such as carisoprodol, diazepam and zolpidem; and abused and/or illegal drugs such as cocaine, GHB, ketamine, LSD, marijuana, methadone, methamphetamine, MDMA, morphine, PCP and toluene.

Keyword continuation: illicit and licit drugs and traffic safety, drugs and driving, drug-impaired driving.

17. Key Words	18. Distribution Statement
Carisoprodol, cocaine, dextromethorphan, diazepam, diphenhydramine, GHB,ketamine, LSD, marijuana,methadone, methamphetamine,MDMA, morphine, PCP, toluene, zolpidem,	

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Table of Contents

Introduction

The use of psychoactive drugs followed by driving has been an issue of continual concern to law enforcement officers, physicians, attorneys, forensic toxicologists and traffic safety professionals in the U.S. and throughout the world. At issue are methods for identifying the impaired driver on the road, the assessment and documentation of the impairment they display, the availability of appropriate chemical tests, and the interpretation of the subsequent results. A panel of international experts on drug-related driving issues met to review developments in the field of drugs and human performance over the last 10 years; to identify the specific effects that both illicit and prescription drugs have on driving; and to develop guidance for others when dealing with drug-impaired driving problems.

This publication is based on the deliberations of the International Consultative Panel on Drugs and Driving Impairment held in Seattle, WA in August 2000. This meeting was sponsored by the National Safety Council, Committee on Alcohol and other Drugs; the State of Washington Traffic Safety Commission; and the National Highway Traffic Safety Administration. Delegates represented the fields of psychopharmacology, behavioral psychology, drug chemistry, forensic toxicology, medicine, and law enforcement experts trained in the recognition of drug effects on drivers in the field. The Fact Sheets reflect the conclusions of the Panel and have been designed to provide practical guidance to toxicologists, pharmacologists, law enforcement officers, attorneys and the general public on issues related to drug impaired driving.

Sixteen drugs were selected for review and include over-the-counter medications, prescription drugs, and illicit and/or abused drugs. The selected drugs are cannabis/marijuana, carisoprodol, cocaine, dextromethorphan, diazepam, diphenhydramine, gamma-hydroxybutyrate, ketamine, lysergic acid diethylamide, methadone, methamphetamine/amphetamine, methylenedioxymethamphetmaine, morphine/heroin, phencyclidine, toluene, and zolpidem.

The Fact Sheets are based on the state of current scientific knowledge and represent the conclusions of the panel. They have been designed to provide practical guidance to toxicologists, pharmacologists, law enforcement officers, attorneys and the general public to use in the evaluation of future cases. Each individual drug Fact Sheet covers information regarding drug chemistry, usage and dosage information, pharmacology, drug effects, effects on driving, drug evaluation and classification (DEC), and the panel's assessment of driving risks. A list of key references and recommended reading is also provided for each drug. Readers are encouraged to use the Fact Sheets in connection with the other cited impaired driving-related texts.

The information provided is uniform for all the Fact Sheets and provides details on the physical description of the drug, synonyms, and pharmaceutical or illicit sources; medical and recreational uses, recommended and abused doses, typical routes of administration, and potency and purity; mechanism of drug action and major receptor sites; drug absorption, distribution, metabolism and elimination data; blood and urine concentrations; psychological and physiological effects, and drug interactions; drug

effects on psychomotor performance effects; driving simulator and epidemiology studies; and drug recognition evaluation profiles. Each Fact Sheet concludes with general statements about the drugs' ability to impair driving performance. The authors strongly believe that all the above information needs to be taken into account when evaluating a drug.

Case interpretation can be complicated by a number of factors and one of the main limitations of the Fact Sheets is that they primarily relate to single drug use. Other factors which influence the risk of effects on driving for any drug include the dose, the dosage frequency, acute and residual effects, chronic administration, route of administration, the concentration of the drug at the site of action, idiosyncrasies of metabolism, drug tolerance or hypersensitivity, and the combined effects of the drug with other drugs or alcohol, to name but a few.

Individual Fact Sheets

Cannabis/Marijuana
Carisoprodol (and Meprobamate)
Cocaine
Dextromethorphan
Diazepam
Diphenhydramine
Gamma-Hydroxybutyrate (GHB, GBL, and 1,4-BD)
Ketamine
Lysergic acid diethylamide (LSD)
Methadone
Methamphetamine (and Amphetamine)
Methylenedioxymethamphetamine (MDMA, Ecstasy)
Morphine (and Heroin)
Phencyclidine (PCP)
Toluene
Zolpidem (and Zaleplon, Zopiclone)

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Disclaimer

The information contained in the Drugs and Human Performance Fact Sheets represents the views of the contributors and not necessarily those of their place of employment or the National Highway Traffic Safety Administration.

Cannabis / Marijuana (Δ^9-Tetrahydrocannabinol, THC)

Marijuana is a green or gray mixture of dried shredded flowers and leaves of the hemp plant *Cannabis sativa*. Hashish consists of resinous secretions of the cannabis plant. Dronabinol (synthetic THC) is a light yellow resinous oil.

Synonyms: Cannabis, marijuana, pot, reefer, buds, grass, weed, dope, ganja, herb, boom, gangster, Mary Jane, sinsemilla, shit, joint, hash, hash oil, blow, blunt, green, kilobricks, Thai sticks; Marinol®

Source: Cannabis contains chemicals called cannabinoids, including cannabinol, cannabidiol, cannabinolidic acids, cannabigerol, cannabichromene, and several isomers of tetrahydrocannabinol (THC). One of these isomers, Δ^9-THC, is believed to be responsible for most of the characteristic psychoactive effects of cannabis. Marijuana refers to the leaves and flowering tops of the cannabis plant; the buds are often preferred because of their higher THC content. Hashish consists of the THC-rich resinous secretions of the plant, which are collected, dried, compressed and smoked. Hashish oil is produced by extracting the cannabinoids from plant material with a solvent. In the U. S., marijuana, hashish and hashish oil are Schedule I controlled substances. Dronabinol (Marinol®) is a Schedule III controlled substance and is available in strengths of 2.5, 5 or 10 mg in round, soft gelatin capsules.

Drug Class: *Cannabis/Marijuana*: spectrum of behavioral effects is unique, preventing classification of the drug as a stimulant, sedative, tranquilizer, or hallucinogen. *Dronabinol*: appetite stimulant, antiemetic.

Medical and Recreational Uses: *Medicinal*: Indicated for the treatment of anorexia associated with weight loss in patients with AIDS, and to treat mild to moderate nausea and vomiting associated with cancer chemotherapy. *Recreational*: Marijuana is used for its mood altering effects, euphoria, and relaxation. Marijuana is the most commonly used illicit drug throughout the world.

Potency, Purity and Dose: THC is the major psychoactive constituent of cannabis. Potency is dependent on THC concentration and is usually expressed as %THC per dry weight of material. Average THC concentration in marijuana is 1-5%, hashish 5-15%, and hashish oil ≥ 20%. The form of marijuana known as *sinsemilla* is derived from the unpollinated female cannabis plant and is preferred for its high THC content (up to 17% THC). Recreational doses are highly variable and users often titer their own dose. A single intake of smoke from a pipe or joint is called a hit (approximately 1/20th of a gram). The lower the potency or THC content the more hits are needed to achieve the desired effects; 1-3 hits of high potency sinsemilla is typically enough to produce the desired effects. In terms of its psychoactive effect, a drop or two of hash oil on a cigarette is equal to a single "joint" of marijuana. Medicinally, the initial starting dose of Marinol® is 2.5 mg, twice daily.

Route of Administration: Marijuana is usually smoked as a cigarette ('joint') or in a pipe or bong. Hollowed out cigars packed with marijuana are also common and are called

Joints and blunts are often laced with adulterants including PCP or crack cocaine. Joints can also be dipped in liquid PCP or in codeine cough syrup. Marijuana is also orally ingested.

Pharmacodynamics: THC binds to cannabinoid receptors and interferes with important endogenous cannabinoid neurotransmitter systems. Receptor distribution correlates with brain areas involved in physiological, psychomotor and cognitive effects. Correspondingly, THC produces alterations in motor behavior, perception, cognition, memory, learning, endocrine function, food intake, and regulation of body temperature.

Pharmacokinetics: Absorption is slower following the oral route of administration with lower, more delayed peak THC levels. Bioavailability is reduced following oral ingestion due to extensive first pass metabolism. Smoking marijuana results in rapid absorption with peak THC plasma concentrations occurring prior to the end of smoking. Concentrations vary depending on the potency of marijuana and the manner in which the drug is smoked, however, peak plasma concentrations of 100-200 ng/mL are routinely encountered. Plasma THC concentrations generally fall below 5 ng/mL less than 3 hours after smoking. THC is highly lipid soluble, and plasma and urinary elimination half-lives are best estimated at 3-4 days, where the rate-limiting step is the slow redistribution to plasma of THC sequestered in the tissues. Shorter half-lives are generally reported due to limited collection intervals and less sensitive analytical methods. Plasma THC concentrations in occasional users rapidly fall below limits of quantitation within 8 to 12 h. THC is rapidly and extensively metabolized with very little THC being excreted unchanged from the body. THC is primarily metabolized to 11-hydroxy-THC which has equipotent psychoactivity. The 11-hydroxy-THC is then rapidly metabolized to the 11-nor-9-carboxy-THC (THC-COOH) which is not psychoactive. A majority of THC is excreted via the feces (~65%) with approximately 30% of the THC being eliminated in the urine as conjugated glucuronic acids and free THC hydroxylated metabolites.

Molecular Interactions / Receptor Chemistry: THC is metabolized via cytochrome P450 2C9, 2C11, and 3A isoenzymes. Potential inhibitors of these isoenzymes could decrease the rate of THC elimination if administered concurrently, while potential inducers could increase the rate of elimination.

Blood to Plasma Concentration Ratio: 0.55

Interpretation of Blood Concentrations: It is difficult to establish a relationship between a person's THC blood or plasma concentration and performance impairing effects. Concentrations of parent drug and metabolite are very dependent on pattern of use as well as dose. THC concentrations typically peak during the act of smoking, while peak 11-OH THC concentrations occur approximately 9-23 minutes after the start of smoking. Concentrations of both analytes decline rapidly and are often < 5 ng/mL at 3 hours. Significant THC concentrations (7 to 18 ng/mL) are noted following even a single puff or hit of a marijuana cigarette. Peak plasma THC concentrations ranged from 46-188 ng/mL in 6 subjects after they smoked 8.8 mg THC over 10 minutes. Chronic users can have mean plasma levels of THC-COOH of 45 ng/mL, 12 hours after use; corresponding

THC levels are, however, less than 1 ng/mL. Following oral administration, THC concentrations peak at 1-3 hours and are lower than after smoking. Dronabinol and THC-COOH are present in equal concentrations in plasma and concentrations peak at approximately 2-4 hours after dosing.

It is inadvisable to try and predict effects based on blood THC concentrations alone, and currently impossible to predict specific effects based on THC-COOH concentrations. It is possible for a person to be affected by marijuana use with concentrations of THC in their blood below the limit of detection of the method. Mathematical models have been developed to estimate the time of marijuana exposure within a 95% confidence interval. Knowing the elapsed time from marijuana exposure can then be used to predict impairment in concurrent cognitive and psychomotor effects based on data in the published literature.

Interpretation of Urine Test Results: Detection of total THC metabolites in urine, primarily THC-COOH-glucuronide, only indicates prior THC exposure. Detection time is well past the window of intoxication and impairment. Published excretion data from controlled clinical studies may provide a reference for evaluating urine cannabinoid concentrations; however, these data are generally reflective of occasional marijuana use rather than heavy, chronic marijuana exposure. It can take as long as 4 hours for THC-COOH to appear in the urine at concentrations sufficient to trigger an immunoassay (at 50ng/mL) following smoking. Positive test results generally indicate use within 1-3 days; however, the detection window could be significantly longer following heavy, chronic, use. Following single doses of Marinol®, low levels of dronabinol metabolites have been detected for more than 5 weeks in urine. Low concentrations of THC have also been measured in over-the-counter hemp oil products – consumption of these products may produce positive urine cannabinoid test results.

Effects: Pharmacological effects of marijuana vary with dose, route of administration, experience of user, vulnerability to psychoactive effects, and setting of use.
Psychological: At recreational doses, effects include relaxation, euphoria, relaxed inhibitions, sense of well-being, disorientation, altered time and space perception, lack of concentration, impaired learning and memory, alterations in thought formation and expression, drowsiness, sedation, mood changes such as panic reactions and paranoia, and a more vivid sense of taste, sight, smell, and hearing. Stronger doses intensify reactions and may cause fluctuating emotions, flights of fragmentary thoughts with disturbed associations, a dulling of attention despite an illusion of heightened insight, image distortion, and psychosis.
Physiological: The most frequent effects include increased heart rate, reddening of the eyes, dry mouth and throat, increased appetite, and vasodilatation.

Side Effect Profile: Fatigue, paranoia, possible psychosis, memory problems, depersonalization, mood alterations, urinary retention, constipation, decreased motor coordination, lethargy, slurred speech, and dizziness. Impaired health including lung damage, behavioral changes, and reproductive, cardiovascular and immunological effects have been associated with regular marijuana use. Regular and chronic marijuana smokers may have many of the same respiratory problems that tobacco smokers have (daily cough

and phlegm, symptoms of chronic bronchitis), as the amount of tar inhaled and the level of carbon monoxide absorbed by marijuana smokers is 3 to 5 times greater than among tobacco smokers. Smoking marijuana while shooting up cocaine has the potential to cause severe increases in heart rate and blood pressure.

Duration of Effects: Effects from smoking cannabis products are felt within minutes and reach their peak in 10-30 minutes. Typical marijuana smokers experience a high that lasts approximately 2 hours. Most behavioral and physiological effects return to baseline levels within 3-5 hours after drug use, although some investigators have demonstrated residual effects in specific behaviors up to 24 hours, such as complex divided attention tasks. Psychomotor impairment can persist after the perceived high has dissipated. In long term users, even after periods of abstinence, selective attention (ability to filter out irrelevant information) has been shown to be adversely affected with increasing duration of use, and speed of information processing has been shown to be impaired with increasing frequency of use. Dronabinol has an onset of 30-60 minutes, peak effects occur at 2-4 hours, and it can stimulate the appetite for up to 24 hours.

Tolerance, Dependence and Withdrawal Effect: Tolerance may develop to some pharmacological effects of dronabinol. Tolerance to many of the effects of marijuana may develop rapidly after only a few doses, but also disappears rapidly. Marijuana is addicting as it causes compulsive drug craving, seeking, and use, even in the face of negative health and social consequences. Additionally, animal studies suggests marijuana causes physical dependence. A withdrawal syndrome is commonly seen in chronic marijuana users following abrupt discontinuation. Symptoms include restlessness, irritability, mild agitation, hyperactivity, insomnia, nausea, cramping, decreased appetite, sweating, and increased dreaming.

Drug Interactions: Cocaine and amphetamines may lead to increased hypertension, tachycardia and possible cardiotoxicity. Benzodiazepines, barbiturates, ethanol, opioids, antihistamines, muscle relaxants and other CNS depressants increase drowsiness and CNS depression. When taken concurrently with alcohol, marijuana is more likely to be a traffic safety risk factor than when consumed alone.

Performance Effects: The short term effects of marijuana use include problems with memory and learning, distorted perception, difficultly in thinking and problem-solving, and loss of coordination. Heavy users may have increased difficulty sustaining attention, shifting attention to meet the demands of changes in the environment, and in registering, processing and using information. In general, laboratory performance studies indicate that sensory functions are not highly impaired, but perceptual functions are significantly affected. The ability to concentrate and maintain attention are decreased during marijuana use, and impairment of hand-eye coordination is dose-related over a wide range of dosages. Impairment in retention time and tracking, subjective sleepiness, distortion of time and distance, vigilance, and loss of coordination in divided attention tasks have been reported. Note however, that subjects can often "pull themselves together" to concentrate on simple tasks for brief periods of time. Significant performance impairments are

usually observed for at least 1-2 hours following marijuana use, and residual effects have been reported up to 24 hours.

Effects on Driving: The drug manufacturer suggests that patients receiving treatment with Marinol® should be specifically warned not to drive until it is established that they are able to tolerate the drug and perform such tasks safely. Epidemiology data from road traffic arrests and fatalities indicate that after alcohol, marijuana is the most frequently detected psychoactive substance among driving populations. Marijuana has been shown to impair performance on driving simulator tasks and on open and closed driving courses for up to approximately 3 hours. Decreased car handling performance, increased reaction times, impaired time and distance estimation, inability to maintain headway, lateral travel, subjective sleepiness, motor incoordination, and impaired sustained vigilance have all been reported. Some drivers may actually be able to improve performance for brief periods by overcompensating for self-perceived impairment. The greater the demands placed on the driver, however, the more critical the likely impairment. Marijuana may particularly impair monotonous and prolonged driving. Decision times to evaluate situations and determine appropriate responses increase. Mixing alcohol and marijuana may dramatically produce effects greater than either drug on its own.

DEC Category: Cannabis

DEC Profile: Horizontal gaze nystagmus not present; vertical gaze nystagmus not present; lack of convergence present; pupil size normal to dilated; reaction to light normal to slow; pulse rate elevated; blood pressure elevated; body temperature normal to elevated. Other characteristic indicators may include odor of marijuana in car or on subject's breath, marijuana debris in mouth, green coating of tongue, bloodshot eyes, body and eyelid tremors, relaxed inhibitions, incomplete thought process, and poor performance on field sobriety tests.

Panel's Assessment of Driving Risks: Low doses of THC moderately impair cognitive and psychomotor tasks associated with driving, while severe driving impairment is observed with high doses, chronic use and in combination with low doses of alcohol The more difficult and unpredictable the task, the more likely marijuana will impair performance.

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Carisoprodol (and Meprobamate)

Carisoprodol is a white, crystalline powder. Meprobamate is a white powder. Both are available in tablet form.

Synonyms: *Carisoprodol*: N-isopropyl-2-methyl-2-propyl-1,3-propanediol dicarbamate; Soma®, Sodol®, Soprodol®, Soridol®. *Meprobamate*: Miltown®, Equanil®, Equagesic®, Meprospan®.

Source: Carisoprodol and meprobamate are available by prescription only. Carisoprodol itself is not a federally scheduled compound, while meprobamate is a Schedule IV drug. Soma® is available as a 350 mg strength round, white tablet; Soma® Compound is a 250 mg strength two-layered, white and light orange round tablet (also contains aspirin); and Soma® Compound with Codeine is a 250 mg strength two-layered, white and yellow oval tablet (also contains aspirin and codeine phosphate) and is a schedule III controlled substance. Miltown® is available as a 200 mg and 400 mg strength white tablet; Equanil® is a 200 mg and 400 mg strength tablet; and Equagesic® is a 200 mg strength two-layered, pink and yellow, round tablet (also contains aspirin).

Drug Class: *Carisoprodol*: muscle relaxant, CNS depressant; *Meprobamate*: antianxiety, CNS depressant.

Medicinal and Recreational Uses: Carisoprodol is a centrally acting skeletal muscle relaxant prescribed for the treatment of acute, musculoskeletal pain. Meprobamate is a major metabolite of carisoprodol, and is a CNS depressant in its own right, indicated for the management of anxiety disorders or for short-term treatment of anxiety symptoms. Use of these drugs begins with prescription for muscular pain or anxiety, and abuse develops for their sedative-hypnotic effects, resulting in increased dosage without medical advice, or continued use after pain or anxiety has subsided.

Potency, Purity and Dose: Carisoprodol is present as a racemic mixture. During treatment, the recommended dose of carisoprodol is for one 350 mg tablet taken three times daily and at bedtime (1400 mg/day). The usual dose for meprobamate is one 400 mg taken four times daily, or daily divided doses of up to 2400 mg. To control chronic pain, carisoprodol is often taken concurrently with other drugs, particularly opiates, benzodiazepines, barbiturates, and other muscle relaxants.

Route of Administration: Oral.

Pharmacodynamics: The pharmacological effects of carisoprodol appear to be due to the combination of the effects of carisoprodol and its active metabolite, meprobamate. Meprobamate is equipotent to carisoprodol. There is some evidence suggesting carisoprodol is a $GABA_A$ receptor indirect agonist with CNS chloride ion channel conductance effects. In animals, carisoprodol produces muscle relaxation by blocking interneuronal activity and depressing transmission of polysynaptic neurons in the descending reticular formation and spinal cord. It is unknown if this mechanism of action is also present in humans. In addition to the desired skeletal muscle relaxing effects,

carisoprodol and meprobamate produce weak anticholinergic, antipyretic and analgesic properties.

Pharmacokinetics: Carisoprodol is rapidly absorbed from the gastrointestinal tract and rapidly distributed throughout the CNS. Protein binding is approximately 60%. Carisoprodol is predominantly dealkylated to meprobamate in the liver, and to a lesser extent hydroxylated to hydroxycarisoprodol and hydroxymeprobamate, followed by conjugation and excretion. The half-life of carisoprodol is approximately 100 minutes. Some individuals have impaired metabolism of carisoprodol, and exhibit a half life of 2-3 times that in normal subjects. The half-life of meprobamate is many times longer, between 6 and 17 hours. As a result of the significantly longer half-life of meprobamate relative to carisoprodol, accumulation of meprobamate during chronic therapy may occur.

Molecular Interactions / Receptor Chemistry: The cytochrome P450 2C19 isoenzyme is responsible for the conversion of carisoprodol to meprobamate. Potential inhibitors of the 2C19 isoenzyme could decrease the rate of drug elimination if administered concurrently, while potential inducers of the 2C19 isoenzyme could increase the rate of elimination.

Blood to Plasma Concentration Ratio: Data not available for carisoprodol; 3.3 to 5.0 for meprobamate.

Interpretation of Blood Concentrations: Following therapeutic doses of carisoprodol, blood concentrations are typically between 1 and 5 mg/L for carisoprodol, and between 2 and 6 mg/L for meprobamate. A single oral dose of 350 mg carisoprodol produced average peak plasma concentrations of 2.1 mg/L carisoprodol at one hour, declining to 0.24 mg/L at 6 hours. Following a single oral dose of 700 mg, average peak plasma concentrations of carisoprodol were 3.5 mg/L at 45 minutes, and meprobamate concentrations of 4.0 mg/L were obtained in 220 minutes. A single oral dose of 700 mg carisoprodol has also produced peak plasma concentrations of 4.8 mg/L carisoprodol. Following administration of meprobamate in the treatment of anxiety, concentrations are typically around 10 mg/L, but can range between 3 and 26 mg/L. A single oral dose of 1200 mg meprobamate produced concentrations of 15.6 mg/L at 4 hours. Plasma meprobamate concentrations of greater than 100 mg/L have been associated with deep coma; light coma between 60 and 120 mg/L; and patients with levels below 50 mg/L are invariably conscious.

Interpretation of Urine Test Results: Both drugs are excreted into the urine and are likely be detectable for several days following cessation of use. Less than 1% of a single oral dose of carisoprodol is excreted unchanged in the 24 hour urine, with meprobamate accounting for 4.7% of the dose. Following administration of meprobamate, up to 11% of a single dose is excreted in the urine in 24 hours.

Effects:

Psychological: Dizziness, drowsiness, sedation, confusion, disorientation, slowed thinking, lack of comprehension, drunken behavior, obtunded, coma.

Physiological: CNS depression, nystagmus (becoming more evident as concentrations increase), loss of balance and coordination, sluggish movements, slurred speech, bloodshot eyes, ataxia, tremor, sleep disturbances.

Side Effect Profile: Agitation, tremor, paresthesia, irritability, depression, facial flushing, headache, vertigo, postural hypotension, fainting, weakness, loss of balance and coordination, impairment of visual accommodation, tachycardia, nausea, vomiting, and stomach upset. In abuse or overdose, subjects are consistently sedated and obtunded, frequently becoming comatose. Overdose symptoms may include shallow breathing, clammy skin, dilated pupils, weak and rapid pulse, paradoxical excitement and insomnia, convulsions, and possible death. Meprobamate overdose can produce drowsiness, ataxia, severe respiratory depression, severe hypotension, shock, heart failure, and death.

Duration of Effects: The effects of carisoprodol begin within 30 minutes of oral administration, and last for up to 4-6 hours. In overdose, coma may last from several hours to a day or more. Meprobamate has a much longer duration of effect than carisoprodol due to a much longer half-life.

Tolerance, Dependence and Withdrawal: Development of abuse and moderate physical and psychological dependence can occur with chronic use of both carisoprodol and meprobamate. Abrupt discontinuation of long-term use can be followed by mild withdrawal symptoms such as anxiety, abdominal cramps, insomnia, headache, nausea, vomiting, ataxia, tremor, muscle twitching, confusion, and occasionally chills, convulsions and hallucinations. Onset of withdrawal from meprobamate occurs within 12-48 hours following cessation of use, and can last a further 12-48 hours. Carisoprodol has been shown to produce cross-tolerance to barbiturates.

Drug Interactions: Alcohol enhances the impairment of physical abilities produced by carisoprodol, and increased sedation, extreme weakness, dizziness, agitation, euphoria and confusion may be observed. Alcohol also inhibits the metabolism of meprobamate and produces an additive depressant effect on the CNS that includes sleepiness, disorientation, incoherence and confusion. The concurrent administration of other centrally acting drugs such as opiates, benzodiazepines, barbiturates, and other muscle relaxants can contribute to impairment. Meprobamate may enhance the analgesic effects of other drugs.

Performance Effects: Very limited studies are available for carisoprodol, however, single oral doses of 700 mg have not been shown to affect psychomotor and cognitive tests within 3 hours of dosing, to a significant degree. In contrast, single doses of meprobamate are capable of causing significant performance impairment. Performance effects include impaired divided attention, impaired coordination and balance, slowed reflexes and increased reaction time. With chronic dosing of either drug, it is likely that decrements in psychomotor performance would be even more pronounced.

Effects on Driving: The drug manufacturer suggests patients should be warned that carisoprodol and meprobamate may impair the mental and/or physical abilities required

for the performance of potentially hazardous tasks, such as driving a motor vehicle. Reported signs of psychomotor and cognitive impairment in subjects found to be driving under the influence of carisoprodol/meprobamate include poor perception, impaired reaction time, slow driving, confusion, disorientation, inattentiveness, slurred or thick speech, slow responses, somnolence, lack of balance and coordination, unsteadiness, and difficulty standing, walking or exiting vehicles.

Logan et al., 2000 describes 21 driving under the influence cases where carisoprodol and/or meprobamate were the only drugs detected. The mean carisoprodol and meprobamate concentrations were 4.6 mg/L (range 0-15 mg/L) and 14.5 mg/L (range 1-36 mg/L), respectively. Signs of impairment were noted at blood concentrations as low as 1 mg/L of meprobamate, however, the most severe driving impairment and the most overt symptoms of intoxication occurred in drivers whose combined carisoprodol and meprobamate blood concentrations were greater than 10 mg/L. Signs consistent with CNS depression were typically observed, including poor balance and coordination, horizontal gaze nystagmus, slurred speech, dazed or groggy appearance, depressed reflexes, slow movements, disorientation to place and time, and a tendency to dose off or fall asleep. Many subjects were involved in accidents, and other observed driving behaviors included extreme lane travel and weaving, striking other vehicles and fixed objects, slow speed, and hit and run accidents where the subject appeared unaware they had hit another vehicle.

DEC Category: CNS depressant

DEC Profile: Horizontal gaze nystagmus present; vertical gaze nystagmus may be present in high doses; lack of convergence present; pupil size normal to dilated, reaction to light slow; pulse rate normal to down; blood pressure normal to down; body temperature normal to down. Other characteristic indicators may include slurred speech, drowsiness, disorientation, drunken behavior without the odor of alcohol, and poor performance on field sobriety tests.

Panel's Assessment of Driving Risks: A single therapeutic dose of carisoprodol is unlikely to cause significant performance impairment. However, single therapeutic doses of meprobamate and chronic doses of carisoprodol may produce moderate to severe impairment of psychomotor skills associated with safe driving.

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Cocaine

Cocaine hydrochloride is a white to light brown crystalline powder, shiny rather than dull in appearance. Cocaine base is white to beige in color; waxy/soapy to flaky solid chunks.

Synonyms: Methylbenzoylecgonine. *Cocaine hydrochloride*: coke, snow, flake, blow, cane, dust, shake, toot, nose candy, white lady. *Cocaine base*: crack, rock, free-base.

Source: Naturally derived CNS stimulant extracted and refined from the leaves of the coca plant (*Erythroxylon coca*), grown primarily in the Andean region of South America and to a lesser extent in India, Africa and Indonesia. The picked coca leaves are dried in the open air and then "stomped" as part of the process to extract the alkaloid, resulting in coca paste and eventually cocaine hydrochloride. It is illegal to possess and sell cocaine in the U.S. and cocaine is a Schedule II controlled substance. "Crack" is the street name given to cocaine that has been processed from cocaine hydrochloride. It is prepared by adding baking soda to aqueous cocaine hydrochloride and heating it until the free-base cocaine precipitates into small pellets. The mixture is cooled and filtered, and then the "rocks" are smoked in a crack pipe.

Drug Class: CNS stimulant, local anesthetic.

Medical and Recreational Uses: Minor use as a topical local anesthetic for ear, nose and throat surgery. Traditionally, the coca leaves are chewed or brewed into a tea for refreshment and to relieve fatigue. Recreationally, cocaine is used to increase alertness, relieve fatigue, feel stronger and more decisive, and is abused for its intense euphoric effects.

Potency, Purity and Dose: In ear, nose and throat surgery cocaine is commercially supplied as the hydrochloride salt in a 40 or 100 mg/mL solution. Depending on the demographic region, street purity of cocaine hydrochloride can range from 20-95%, while that of crack cocaine is 20-80%. The hydrochloride powder is often diluted with a variety of substances such as sugars for bulk (lactose, sucrose, inositol, mannitol), other CNS stimulants (caffeine, ephedrine, phenylpropanolamine), or other local anesthetics (lidocaine, procaine, benzocaine). Commonly abused doses are 10-120 mg. Repeated doses are frequently taken to avoid the dysphoric crash that often follows the initial intense euphoric effects. Cocaine is frequently used in combination with other drugs; injected with heroin ("speedball") or taken with alcohol to reduce irritability; smoked with phencyclidine ("tick"); and smoked in marijuana blunts ("turbo").

Route of Administration: Topically applied for use as a local anesthetic. Recreationally, coca leaves can be chewed, however, cocaine abusers typically smoke "crack" in a glass pipe or inject the hydrochloride salt intravenously. Cocaine hydrochloride can be smoked to some effect but this is very inefficient as the powder tends to burn rather than vaporize. Snorting (insufflation/intranasal) is also popular. Subcutaneous injection (skin-popping) is rarely used.